OpenEdge Management:
Servers, DataServers, Messengers, and Adapters
These materials and all Progress® software products are copyrighted and all rights are reserved by Progress Software Corporation. The information in these materials is subject to change without notice, and Progress Software Corporation assumes no responsibility for any errors that may appear therein. The references in these materials to specific platforms supported are subject to change.

Third party acknowledgements — See the “Third party acknowledgements” section on page 21.

February 2013

Last updated with new content: Release 11.2.0

Product Code: 4496; R11.2.0

For the latest documentation updates see OpenEdge Product Documentation on PSDN (http://communities.progress.com/pcom/docs/DOC-16074).
Contents

Preface .................................................................................................................. 13

1. Supporting OpenEdge Servers, Messengers, DataServers, and Adapters .... 37
   Overview .......................................................................................................... 38
   AppServer ...................................................................................................... 40
   NameServer ................................................................................................. 40
   WebSpeed Transaction Server ....................................................................... 40
   WebSpeed Messenger .................................................................................... 41
   AppServer Internet Adapter .......................................................................... 41
   SonicMQ Adapter ......................................................................................... 41
   Web Services Adapter ................................................................................... 41
   DataServers for ODBC, Oracle, and MS SQL Server ..................................... 42
   Managing broker resources .......................................................................... 42
   The ubroker.properties file ......................................................................... 42
   Server and agent details .............................................................................. 43
   Log file monitors and log file viewers ......................................................... 43
   Features supporting OpenEdge server, DataServer, Messenger, and Adapter resources ................................................................. 44
   OpenEdge Management monitoring prerequisites ........................................ 45
   Installation ..................................................................................................... 45
   Discovering and enabling local resources .................................................... 45
   Discovering and enabling remote resources ............................................... 45
   Role authorization and OpenEdge Management tasks .................................. 46

2. Getting Started. ............................................................................................... 47
   OpenEdge Management console ................................................................ 48
   OpenEdge Management menu bar and toolbar ........................................... 48
   Using the management console menu bar for OpenEdge server tasks ......... 50
   Using the OpenEdge Management resource details page ......................... 51
   Details page format and content .................................................................. 51
   Accessing OpenEdge Management resource information ........................ 54
   Accessing OpenEdge resources from the grid frame .................................. 54
   Accessing an OpenEdge Management Details page ................................. 55
   Starting or Stopping OpenEdge resources .................................................. 55
### Contents

Deleting OpenEdge Management resources ............................................. 57  
Effects of an AdminServer warm start on OpenEdge Management ................. 58  
Stages of a warm start .............. 58  
Understanding OpenEdge server graphs .................................................. 59  
Graphs available on Performance View pages .......................................... 59  
Displaying OpenEdge viewlets on a Collection view ................................. 61  
Changing OpenEdge pinup graphical views ............................................. 63  

3. Managing WebSpeed Transaction Server Data ....................................... 65  
Overview ................................................................................................. 66  
Reviewing WebSpeed broker status .......................................................... 67  
Modifying WebSpeed control settings ....................................................... 69  
WebSpeed Control page content ............................................................... 70  
Changing WebSpeed broker controls ......................................................... 72  
Viewing broker process details ................................................................. 74  
Agent Pool Control page content .............................................................. 76  
Adding or trimming agents ..................................................................... 80  
Killing a WebSpeed agent process ............................................................. 81  
Accessing and reviewing WebSpeed-related log file data ............................ 83  
Getting started with log files for WebSpeed resources ............................... 83  
Characteristics of WebSpeed resource log file monitors ............................... 84  
WebSpeed log file monitor default values ................................................. 85  
Reviewing predefined log file monitor search criteria .................................. 85  
Customizing a WebSpeed broker log file monitor ..................................... 86  
Using the WebSpeed log file viewers ....................................................... 89  
Refreshing log file data ........................................................................... 90  
Examining WebSpeed-related Operational views ....................................... 91  
Accessing and reviewing the Broker Performance View ............................. 91  
Accessing and reviewing the Agents Performance View .......................... 94  
Examining WebSpeed-related Informational views .................................... 96  

4. Managing AppServer Data ................................................................. 97  
AppServer overview .................................................................................. 98  
Reviewing AppServer broker status .......................................................... 99  
Modifying AppServer control settings ...................................................... 101  
AppServer Control .................................................................................... 102  
Changing AppServer broker controls ....................................................... 103  
Viewing broker process details ................................................................. 105  
Server Pool Control .................................................................................. 107  
Adding or trimming AppServers ............................................................... 111  
Killing an AppServer process ................................................................... 112  
Accessing and reviewing AppServer-related log file data .......................... 117  
Getting started with log files for AppServer resources ............................... 117  
Characteristics of AppServer resource log file monitors ............................ 118  
AppServer log file monitor default values ................................................. 119  
Reviewing predefined log file monitor search criteria .................................. 120  
Customizing an AppServer broker log file monitor .................................. 121  
Using the AppServer log file viewers ....................................................... 124  
Refreshing log file data ........................................................................... 125  
Examining AppServer-related Operational views ....................................... 126  
Accessing and reviewing the Broker Performance View ............................. 126  
Accessing and reviewing the Servers Performance View ........................... 129  
Examining AppServer-related Informational views .................................... 131
5. Managing NameServer Data ........................................ 133
   NameServer overview ............................................ 134
   Reviewing NameServer status ................................ 135
   Modifying NameServer control settings ...................... 136
      NameServer Control ........................................ 137
      Changing NameServer controls ............................ 138
   Accessing and reviewing NameServer-related log file data .... 139
      Getting started with NameServer log files ............... 139
      Characteristics of a NameServer log file monitor ........ 139
      NameServer log file monitor default values .............. 140
      Reviewing predefined log file monitor search criteria ... 141
      Customizing a NameServer log file monitor .............. 142
   Using the NameServer log file viewer ......................... 144
      Refreshing log file data .................................... 146
   Examining NameServer Operational and Informational views ... 147
      Accessing and reviewing Operational views ............... 147
      Accessing and reviewing Informational views ............. 151

6. Managing DataServer Data ........................................ 155
   DataServer overview ............................................ 156
   ODBC, Oracle, and MS SQL Server DataServers ............... 156
   Reviewing DataServer broker status .......................... 157
   Modifying DataServer control settings ...................... 158
      DataServer Control page content ........................ 159
      Changing DataServer broker controls ..................... 160
      Viewing broker process details ............................ 161
      Killing a DataServer broker process ...................... 163
   Accessing and reviewing DataServer-related log file data .... 165
      Getting started with log files for DataServer resources ... 165
      Characteristics of DataServer resource log file monitors 166
      DataServer log file monitor default values .............. 167
      Reviewing predefined log file monitor search criteria ... 167
      Customizing a DataServer broker log file monitor ......... 168
   Using the DataServer log file viewers ......................... 171
      Refreshing log file data .................................... 173

7. Managing AppServer Internet Adapter Data ..................... 175
   AppServer Internet Adapter overview ......................... 176
   Configuring AppServer Internet Adapter properties ........ 176
   Working with AppServer Internet Adapter control settings .... 177
      AppServer Internet Adapter Control page content ......... 178
   Accessing and reviewing AppServer Internet Adapter log file data ... 179
      Getting started with log files for AIA resources ......... 179
      Characteristics of an AppServer Internet Adapter resource log file monitor 179
      AppServer Internet Adapter log file monitor default values 181
      Reviewing predefined log file monitor search criteria .... 182
      Customizing an AppServer Internet Adapter log file monitor 183
   Using the AppServer Internet Adapter log file viewer .......... 185
      Refreshing log file data .................................... 186
8. Managing SonicMQ Adapter Data .............................................. 187
   SonicMQ Adapter overview ............................................. 188
      Configuring SonicMQ Adapter properties ......................... 188
   Reviewing SonicMQ Adapter broker status ......................... 189
   Modifying SonicMQ Adapter control settings ..................... 190
      SonicMQ Adapter Control ........................................... 191
      Changing SonicMQ Adapter controls ............................ 192
      Viewing broker process details ................................. 193
      Killing a SonicMQ Adapter broker process and threads ....... 195
   Accessing and reviewing SonicMQ Adapter log file data ........... 197
      Getting started with log files for SonicMQ Adapter resources . 197
      Characteristics of SonicMQ Adapter resource log file monitors 198
      SonicMQ Adapter log file monitor default values ............. 199
      Reviewing predefined log file monitor search criteria ........ 200
      Customizing a SonicMQ Adapter broker log file monitor ....... 201
   Using the SonicMQ Adapter log file viewers ....................... 203
      Refreshing log file data ........................................ 204
   Examining SonicMQ Adapter Operations views ..................... 205
      Accessing and reviewing SonicMQ Adapter status .......... 205

9. Managing Web Services Adapter Data ..................................... 209
   Web Services Adapter overview .................................... 210
      Configuring Web Services Adapter properties .................. 210
   Reviewing Web Services Adapter status .......................... 211
   Modifying Web Services Adapter control settings ............... 212
      Web Services Adapter Control ................................... 213
      Logging in to or logging off from the Web server ............ 213
   Accessing and reviewing Web Services Adapter log file data ..... 214
      Getting started with log files for Web Services Adapter resources . 214
      Characteristics of Web Services Adapter resource log file monitors 214
      Web Services Adapter log file monitor default values ....... 215
      Reviewing predefined log file monitor search criteria ........ 216
      Customizing a Web Services Adapter log file monitor ....... 217
   Using the Web Services Adapter log file viewer .................. 220
      Refreshing log file data ........................................ 221
   Examining Web Services Adapter Operations views .............. 222
      Accessing and reviewing Web Services Adapter status ....... 222
      Accessing and reviewing Web Services Adapter statistics .... 222
      Accessing and reviewing Web Services Adapter run-time properties 223

10. Managing WebSpeed Messenger Data .................................... 225
    Messenger overview .................................................. 226
        Configuring WebSpeed Messenger properties .................. 226
        CGIIP, WSASP, WSISA, and WSNSA Messengers ............... 226
    Working with Messenger control settings ....................... 227
        Messengers Control ............................................. 228
    Accessing and reviewing Messenger log file data ............... 229
        Getting started with log files for Messenger resources .... 229
        Characteristics of a Messenger resource log file monitor ... 229
        Messenger log file monitor default values .................. 231
        Reviewing predefined log file monitor search criteria ....... 231
        Customizing a Messenger log file monitor .................. 233
    Using the Messenger log file viewer ............................. 235
        Refreshing log file data ..................................... 236
## 11. Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters

237

OpenEdge Management resource monitoring overview .......................... 238
Key terms and definitions ....................................................... 238
Default polling and trend values .............................................. 241
Trend default values for WebSpeed and AppServer brokers ................. 242
Default monitoring plan details ............................................... 242
Monitoring plan default values ............................................... 243
OpenEdge default monitoring plan examples .................................. 244
Maintaining monitoring plans .................................................. 245
Updating monitoring plans ...................................................... 245
General rule conventions ....................................................... 250
Understanding and using resource monitor rules ............................... 251
Common rule characteristics .................................................. 251
Average Procedure Duration High rule ...................................... 251
Rejected Request Percent High rule ......................................... 253
Queued Request Percent High rule ......................................... 254
Agent (Server) Unavailable rule .............................................. 254
Working with rule sets .......................................................... 256
Benefits of using rule sets ..................................................... 256
Editing a rule set .................................................................. 258
Copying a rule set .................................................................. 258
Deleting a rule set .................................................................. 259
Adding rule sets that have one or more rules in common ..................... 259
Associating a rule set with a monitoring plan ................................. 259

## 12. Calculating Rule Threshold Settings Using the Configuration Advisor

261

Configuration Advisor overview .............................................. 262
Rule details ............................................................................ 262
Data analysis and recommended values overview ......................... 263
Generating and applying threshold rule settings ......................... 266
Setting rules-related criteria .................................................. 267
Understanding the recommended threshold settings ....................... 269
Evaluating recommended settings ............................................ 270
Comparing and selecting threshold settings ................................ 272
Submitting your threshold setting selections ............................... 273
Determining the effectiveness of your selections ............................ 274

## 13. Analyzing OpenEdge Application Performance

275

Overview .............................................................................. 276
Investigating application performance issues ................................. 277
OpenEdge Management in the workplace .................................... 278
OpenEdge Management at XYZ Corporation ............................... 278
Consulting OpenEdge Management documentation ...................... 278
Planning an application performance review ............................... 279
Problem definition ............................................................... 279
Initial investigation ................................................................ 280
Drilling deeper into OpenEdge Management-supplied data ............. 281
Testing and documenting your potential solutions ....................... 284
Responding to an application crisis .......................................... 285
Problem definition ............................................................... 285
Initial investigation ................................................................ 285
Drilling deeper into OpenEdge Management-supplied data ............. 287
Testing and documenting your potential solutions ....................... 292
For more information about application performance .................. 293
## Contents

14. **Managing OE Web Server Data** ................................................................. 295
   OE Web Server overview ................................................................. 296
   Configuring OE Web Server properties .............................................. 296
   Reviewing OE Web Server status ..................................................... 297
   Modifying OE Web Server control settings ........................................ 298
   OE Web Server Control ................................................................. 299
   Logging in to or logging off from the OE Web Server ......................... 299
   Accessing and reviewing OE Web Server log file data ......................... 300
   Getting started with log files for OE Web Server resources .................. 300
   Characteristics of OE Web Server resource log file monitors ............... 300
   OE Web Server log file monitor default values ................................... 301
   Reviewing predefined log file monitor search criteria ....................... 302
   Customizing an OE Web Server log file monitor ............................... 302
   Using the OE Web Server log file viewer ......................................... 305
   Refreshing log file data ............................................................. 306
   Examining OE Web Server Operations views .................................... 307
   Accessing and reviewing OE Web Server status .................................. 307
   Accessing and reviewing OE Web Server statistics ............................. 307
   Accessing and reviewing OE Web Server run-time properties ............... 308

**Index** ................................................................................................. 309
Figures

Figure 1: Menu bar ................................................................. 50
Figure 2: Toolbars in the Collection view ................................. 51
Figure 3: WebSpeed Details page ........................................ 53
Figure 4: Broker statistics not available information ................. 55
Figure 5: Binoculars icon ..................................................... 62
Figure 6: WebSpeed Status section ....................................... 69
Figure 7: Command and control section ................................. 71
Figure 8: WebSpeed Control page ........................................ 72
Figure 9: Agent Pool Control page example ........................... 78
Figure 10: WebSpeed broker log file viewer example ............... 91
Figure 11: WebSpeed Operational views section .................... 93
Figure 12: WebSpeed Informational views .............................. 98
Figure 13: AppServer Status section ..................................... 101
Figure 14: Command and control section .............................. 103
Figure 15: AppServer Control page ....................................... 104
Figure 16: Server Pool Control page ...................................... 109
Figure 17: AppServer-related search criteria ......................... 120
Figure 18: AppServer Broker log file viewer ......................... 126
Figure 19: AppServer Operational views ............................... 128
Figure 20: AppServer Informational views ............................. 133
Figure 21: NameServer Status section ................................. 137
Figure 22: Command and control section ............................... 138
Figure 23: NameServer Control ........................................... 139
Figure 24: NameServer log file viewer ................................. 146
Figure 25: Oracle DataServer Status section ......................... 159
Figure 26: Command and control section ............................... 160
Figure 27: DataServer Control page ..................................... 161
Figure 28: Search criteria .................................................. 168
Figure 29: DataServer Broker log file viewer ....................... 173
Figure 30: Command and control section .............................. 179
Figure 31: AppServer Internet Adapter Control page .............. 180
Figure 32: Library Search criteria ........................................ 182
Figure 33: SonicMQ Adapter Status section ......................... 191
Figure 34: Command and control section .............................. 192
Figure 35: SonicMQ Adapter Control page ............................ 193
Figure 36: Search criteria .................................................. 200
Figure 37: SonicMQ Adapter Broker log file viewer ............... 205
Figure 38: Operations views section ................................. 207
Figure 39: Web Services Adapter Status section .................... 213
Figure 40: Command and control section .............................. 214
Figure 41: Command and control section .............................. 229
Figure 42: Messengers Control page .................................... 230
Figure 43: Library Search criteria ........................................ 232
Figure 44: NameServer instance default monitoring example .... 246
Figure 45: Accessing rule sets from the detail frame ............... 260
Figure 46: Configuration Advisor page ................................. 265
Figure 47: Configuration Advisor recommended thresholds ....... 267
Figure 48: Configuration Advisor recommended values .......... 271
Figure 49: Recommended Values field content ....................... 272
Figure 50: Detail page analysis content .................................. 273
Figure 51: AppServer Profile Report for Average_Afternoon data 284
Figure 52: AppServer Profile Report for Average_Afternoon data 285
Figure 53: AppServer Profile Report for Crisis_Report data ...... 286
Figure 54: Broker Performance View for asbroker1 ............... 290
Figure 55: AS Broker Activity Status for asbroker1 ............... 291
Contents

Figure 56: AppServer asbroker1 log file ........................................... 292
Figure 57: Servers Performance View page for asbroker1 ................. 293
Figure 58: Total Servers CPU for asbroker1 ................................... 293
Figure 59: OE Web Server Status section ....................................... 299
Figure 60: Command and control section ...................................... 300
### Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1</td>
<td>OpenEdge Management feature availability</td>
<td>38</td>
</tr>
<tr>
<td>Table 2</td>
<td>Performing OpenEdge Management activities</td>
<td>52</td>
</tr>
<tr>
<td>Table 3</td>
<td>Sections of the OpenEdge Management Details page</td>
<td>54</td>
</tr>
<tr>
<td>Table 4</td>
<td>Performance pages and their graphical content</td>
<td>61</td>
</tr>
<tr>
<td>Table 5</td>
<td>Graph properties and options for time-based graphs</td>
<td>65</td>
</tr>
<tr>
<td>Table 6</td>
<td>WebSpeed Status details</td>
<td>69</td>
</tr>
<tr>
<td>Table 7</td>
<td>Additional WebSpeed information</td>
<td>71</td>
</tr>
<tr>
<td>Table 8</td>
<td>Process statistics operational data</td>
<td>77</td>
</tr>
<tr>
<td>Table 9</td>
<td>Agent pool initial configuration field definitions</td>
<td>80</td>
</tr>
<tr>
<td>Table 10</td>
<td>Agents state field definitions</td>
<td>80</td>
</tr>
<tr>
<td>Table 11</td>
<td>Agent pool summary field definitions</td>
<td>81</td>
</tr>
<tr>
<td>Table 12</td>
<td>Broker connection workload details</td>
<td>94</td>
</tr>
<tr>
<td>Table 13</td>
<td>WebSpeed Broker performance-related graphs</td>
<td>95</td>
</tr>
<tr>
<td>Table 14</td>
<td>WebSpeed agents performance-related graphs</td>
<td>97</td>
</tr>
<tr>
<td>Table 15</td>
<td>AppServer status details</td>
<td>101</td>
</tr>
<tr>
<td>Table 16</td>
<td>Additional AppServer information</td>
<td>103</td>
</tr>
<tr>
<td>Table 17</td>
<td>Process statistics operational data</td>
<td>108</td>
</tr>
<tr>
<td>Table 18</td>
<td>Server pool initial configuration fields</td>
<td>110</td>
</tr>
<tr>
<td>Table 19</td>
<td>Servers state fields</td>
<td>111</td>
</tr>
<tr>
<td>Table 20</td>
<td>Server pool summary fields</td>
<td>112</td>
</tr>
<tr>
<td>Table 21</td>
<td>Client Connection Summary</td>
<td>117</td>
</tr>
<tr>
<td>Table 22</td>
<td>AppServer broker connection workload details</td>
<td>129</td>
</tr>
<tr>
<td>Table 23</td>
<td>AppServer broker performance-related graphs</td>
<td>130</td>
</tr>
<tr>
<td>Table 24</td>
<td>AppServers performance-related graphs</td>
<td>132</td>
</tr>
<tr>
<td>Table 25</td>
<td>NameServer Status details</td>
<td>137</td>
</tr>
<tr>
<td>Table 26</td>
<td>Additional NameServer information</td>
<td>138</td>
</tr>
<tr>
<td>Table 27</td>
<td>Summary details on the Operational Status page</td>
<td>150</td>
</tr>
<tr>
<td>Table 28</td>
<td>NameServer details on the Operational Status page</td>
<td>152</td>
</tr>
<tr>
<td>Table 29</td>
<td>Properties details on the Static Configuration page</td>
<td>154</td>
</tr>
<tr>
<td>Table 30</td>
<td>DataServer status details</td>
<td>159</td>
</tr>
<tr>
<td>Table 31</td>
<td>Additional DataServer information</td>
<td>160</td>
</tr>
<tr>
<td>Table 32</td>
<td>Process statistics section real-time operational data</td>
<td>164</td>
</tr>
<tr>
<td>Table 33</td>
<td>Additional AppServer Internet Adapter information</td>
<td>179</td>
</tr>
<tr>
<td>Table 34</td>
<td>SonicMQ Adapter Status details</td>
<td>191</td>
</tr>
<tr>
<td>Table 35</td>
<td>Additional SonicMQ Adapter information</td>
<td>192</td>
</tr>
<tr>
<td>Table 36</td>
<td>Process statistics operational data</td>
<td>197</td>
</tr>
<tr>
<td>Table 37</td>
<td>SonicMQ Adapter data summary</td>
<td>208</td>
</tr>
<tr>
<td>Table 38</td>
<td>Web Services Adapter Status details</td>
<td>213</td>
</tr>
<tr>
<td>Table 39</td>
<td>Additional Web Services Adapter information</td>
<td>214</td>
</tr>
<tr>
<td>Table 40</td>
<td>Additional Messenger information</td>
<td>229</td>
</tr>
<tr>
<td>Table 41</td>
<td>Monitoring plan default values</td>
<td>245</td>
</tr>
<tr>
<td>Table 42</td>
<td>Resource status legend</td>
<td>252</td>
</tr>
<tr>
<td>Table 43</td>
<td>Examples of AppServer-related ABL procedure entries</td>
<td>255</td>
</tr>
<tr>
<td>Table 44</td>
<td>Configuration Advisor details</td>
<td>268</td>
</tr>
<tr>
<td>Table 45</td>
<td>Tasks using the Configuration Advisor Calculations page</td>
<td>271</td>
</tr>
<tr>
<td>Table 46</td>
<td>Detail page fields and descriptions</td>
<td>273</td>
</tr>
<tr>
<td>Table 47</td>
<td>Initial investigative checklist</td>
<td>282</td>
</tr>
<tr>
<td>Table 48</td>
<td>Crisis review checklist</td>
<td>288</td>
</tr>
<tr>
<td>Table 49</td>
<td>OE Web Server Status details</td>
<td>299</td>
</tr>
<tr>
<td>Table 50</td>
<td>Additional OE Web Server information</td>
<td>300</td>
</tr>
</tbody>
</table>
Preface

This Preface contains the following sections:

- Purpose
- Audience
- Organization
- Using this manual
- Typographical conventions
- Examples of syntax descriptions
- OpenEdge messages
- Third party acknowledgements
Purpose

This guide describes how OpenEdge® Management supports monitoring and managing specific resources associated with these Server, DataServer, Messenger, and Adapter products:

- AppServer
- WebSpeed® Transaction Server
- NameServer
- OpenEdge® DataServer for ODBC
- OpenEdge® DataServer for Oracle
- OpenEdge® DataServer for Microsoft SQL Server
- WebSpeed® Messengers (CGIIP, WSASP, WSISA, WSNSA)
- AppServer Internet Adapter
- SonicMQ® Adapter
- Web Services Adapter

Note: The OpenEdge database is documented separately in OpenEdge Management: Database Management.

Audience

This manual is designed for system administrators, database administrators, and any other personnel responsible for the administrative and daily activities associated with managing an OpenEdge-based application environment that uses OpenEdge Management.

Organization

Chapter 1, “Supporting OpenEdge Servers, Messengers, DataServers, and Adapters”

Presents an overview of the OpenEdge Management features that support the OpenEdge Servers, DataServers, Messengers, and Adapters.

Chapter 2, “Getting Started”

Describes how to navigate the OpenEdge Management console.

Chapter 3, “Managing WebSpeed Transaction Server Data”

Explains how to use OpenEdge Management features with WebSpeed Transaction Servers.
Chapter 4, “Managing AppServer Data”
Explains how to use the OpenEdge Management features with AppServers.

Chapter 5, “Managing NameServer Data”
Explains how to use the OpenEdge Management features with NameServers.

Chapter 6, “Managing DataServer Data”
Explains how to use the OpenEdge Management features with DataServers.

Chapter 7, “Managing AppServer Internet Adapter Data”
Explains how to use the OpenEdge Management features with AppServer Internet Adapters.

Chapter 8, “Managing SonicMQ Adapter Data”
Explains how to use the OpenEdge Management features with SonicMQ Adapters.

Chapter 9, “Managing Web Services Adapter Data”
Explains how to use the OpenEdge Management features with Web Services Adapters.

Chapter 10, “Managing WebSpeed Messenger Data”
Explains how to use the OpenEdge Management features with WebSpeed Messengers.

Chapter 11, “Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters”
Describes how to set up OpenEdge Management monitoring plans and rules for OpenEdge server, DataServer, Messenger, and Adapter resources.

Chapter 12, “Calculating Rule Threshold Settings Using the Configuration Advisor”
Describes how to use the Configuration Advisor to generate recommended threshold rule settings for specific WebSpeed and AppServer rules.

Chapter 13, “Analyzing OpenEdge Application Performance”
Describes how you can use OpenEdge Management features to analyze OpenEdge server application performance.
Using this manual

OpenEdge® provides a special purpose programming language for building business applications. In the documentation, the formal name for this language is ABL (Advanced Business Language). With few exceptions, all keywords of the language appear in all uppercase, using a font that is appropriate to the context. All other alphabetic language content appears in mixed case.

For the latest documentation updates, see the OpenEdge Product Documentation category on PSDN (http://communities.progress.com/pcom/docs/DOC-16074).

References to ABL compiler and run-time features

ABL is both a compiled and an interpreted language that executes in a run-time engine. The documentation refers to this run-time engine as the ABL Virtual Machine (AVM). When the documentation refers to ABL source code compilation, it specifies ABL or the compiler as the actor that manages compile-time features of the language. When the documentation refers to run-time behavior in an executing ABL program, it specifies the AVM as the actor that manages the specified run-time behavior in the program.

For example, these sentences refer to the ABL compiler’s allowance for parameter passing and the AVM’s possible response to that parameter passing at run time: “ABL allows you to pass a dynamic temp-table handle as a static temp-table parameter of a method. However, if at run time the passed dynamic temp-table schema does not match the schema of the static temp-table parameter, the AVM raises an error.” The following sentence refers to run-time actions that the AVM can perform using a particular ABL feature: “The ABL socket object handle allows the AVM to connect with other ABL and non-ABL sessions using TCP/IP sockets.”

References to ABL data types

ABL provides built-in data types, built-in class data types, and user-defined class data types. References to built-in data types follow these rules:

- Like most other keywords, references to specific built-in data types appear in all uppercase, using a font that is appropriate to the context. No uppercase reference ever includes or implies any data type other than itself.

- Wherever integer appears, this is a reference to the INTEGER or INT64 data type.

- Wherever character appears, this is a reference to the CHARACTER, LONGCHAR, or CLOB data type.

- Wherever decimal appears, this is a reference to the DECIMAL data type.

- Wherever numeric appears, this is a reference to the INTEGER, INT64, or DECIMAL data type.

References to built-in class data types appear in mixed case with initial caps, for example, Progress.Lang.Object. References to user-defined class data types appear in mixed case, as specified for a given application example.
## Typographical conventions

This manual uses the following typographical conventions:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bold</strong></td>
<td>Bold typeface indicates commands or characters the user types, provides emphasis, or the names of user interface elements.</td>
</tr>
<tr>
<td><em>Italic</em></td>
<td>Italic typeface indicates the title of a document, or signifies new terms.</td>
</tr>
<tr>
<td><strong>SMALL, BOLD CAPITAL LETTERS</strong></td>
<td>Small, bold capital letters indicate OpenEdge key functions and generic keyboard keys; for example, GET and CTRL.</td>
</tr>
<tr>
<td><strong>KEY1+KEY2</strong></td>
<td>A plus sign between key names indicates a <strong>simultaneous</strong> key sequence: you press and hold down the first key while pressing the second key. For example, <strong>CTRL+X</strong>.</td>
</tr>
<tr>
<td><strong>KEY1 KEY2</strong></td>
<td>A space between key names indicates a <strong>sequential</strong> key sequence: you press and release the first key, then press another key. For example, <strong>ESCAPE H</strong>.</td>
</tr>
</tbody>
</table>

### Syntax:

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed width</strong></td>
<td>A fixed-width font is used in syntax statements, code examples, system output, and filenames.</td>
</tr>
<tr>
<td><strong>Fixed-width italics</strong></td>
<td>Fixed-width italics indicate variables in syntax statements.</td>
</tr>
<tr>
<td><strong>Fixed-width bold</strong></td>
<td>Fixed-width bold indicates variables with special emphasis.</td>
</tr>
<tr>
<td><strong>UPPERCASE fixed width</strong></td>
<td>Uppercase words are ABL keywords. Although these are always shown in uppercase, you can type them in either uppercase or lowercase in a procedure.</td>
</tr>
<tr>
<td>![3 arrows]</td>
<td>This icon (three arrows) introduces a multi-step procedure.</td>
</tr>
<tr>
<td>![1 arrow]</td>
<td>This icon (one arrow) introduces a single-step procedure.</td>
</tr>
<tr>
<td><strong>Period (.)</strong> or <strong>colon (:)</strong></td>
<td>All statements except <strong>DO</strong>, <strong>FOR</strong>, <strong>FUNCTION</strong>, <strong>PROCEDURE</strong>, and <strong>REPEAT end with a period</strong>. <strong>DO</strong>, <strong>FOR</strong>, <strong>FUNCTION</strong>, <strong>PROCEDURE</strong>, and <strong>REPEAT</strong> statements can end with either a period or a colon.</td>
</tr>
<tr>
<td><strong>[]</strong></td>
<td>Large brackets indicate the items within them are optional.</td>
</tr>
<tr>
<td><strong>[]</strong></td>
<td>Small brackets are part of ABL.</td>
</tr>
<tr>
<td><strong>{}</strong></td>
<td>Large braces indicate the items within them are required. They are used to simplify complex syntax diagrams.</td>
</tr>
<tr>
<td><strong>{}</strong></td>
<td>Small braces are part of ABL. For example, a called external procedure must use braces when referencing arguments passed by a calling procedure.</td>
</tr>
</tbody>
</table>
Examples of syntax descriptions

In this example, ACCUM is a keyword, and aggregate and expression are variables:

**Syntax**

```
ACCUM aggregate expression
```

FOR is one of the statements that can end with either a period or a colon, as in this example:

```
FOR EACH Customer NO-LOCK:
   DISPLAY Customer.Name.
END.
```

In this example, STREAM stream, UNLESS-HIDDEN, and NO-ERROR are optional:

**Syntax**

```
DISPLAY [ STREAM stream ] [ UNLESS-HIDDEN ] [ NO-ERROR ]
```

In this example, the outer (small) brackets are part of the language, and the inner (large) brackets denote an optional item:

**Syntax**

```
INITIAL [ constant [ , constant ] ]
```

A called external procedure must use braces when referencing compile-time arguments passed by a calling procedure, as shown in this example:

**Syntax**

```
( &argument-name )
```

In this example, EACH, FIRST, and LAST are optional, but you can choose only one of them:

**Syntax**

```
PRESELECT [ EACH | FIRST | LAST ] record-phrase
```
In this example, you must include two expressions, and optionally you can include more. Multiple expressions are separated by commas:

Syntax

```
MAXIMUM ( expression , expression [, expression ] ... )
```

In this example, you must specify MESSAGE and at least one expression of SKIP [ (n) ], and any number of additional expression or SKIP [ ( n ) ] is allowed:

Syntax

```
MESSAGE { expression | SKIP [ ( n ) ] } ...
```

In this example, you must specify {include-file, then optionally any number of argument or &argument-name = "argument-value", and then terminate with }:

Syntax

```
{ include-file
  [ argument | &argument-name = "argument-value" ] ... )
```

Long syntax descriptions split across lines

Some syntax descriptions are too long to fit on one line. When syntax descriptions are split across multiple lines, groups of optional and groups of required items are kept together in the required order.

In this example, WITH is followed by six optional items:

Syntax

```
WITH [ ACCUM max-length ] [ expression DOWN ]
[ CENTERED ] [ n COLUMNS ] [ SIDE-LABELS ]
[ STREAM-IO ]
```

Complex syntax descriptions with both required and optional elements

Some syntax descriptions are too complex to distinguish required and optional elements by bracketing only the optional elements. For such syntax, the descriptions include both braces (for required elements) and brackets (for optional elements).

In this example, ASSIGN requires either one or more field entries or one record. Options available with field or record are grouped with braces and brackets:
OpenEdge messages

OpenEdge displays several types of messages to inform you of routine and unusual occurrences:

- **Execution messages** inform you of errors encountered while OpenEdge is running a procedure; for example, if OpenEdge cannot find a record with a specified index field value.

- **Compile messages** inform you of errors found while OpenEdge is reading and analyzing a procedure before running it; for example, if a procedure references a table name that is not defined in the database.

- **Startup messages** inform you of unusual conditions detected while OpenEdge is getting ready to execute; for example, if you entered an invalid startup parameter.

After displaying a message, OpenEdge proceeds in one of several ways:

- Continues execution, subject to the error-processing actions that you specify or that are assumed as part of the procedure. This is the most common action taken after execution messages.

- Returns to the Procedure Editor, so you can correct an error in a procedure. This is the usual action taken after compiler messages.

- Halts processing of a procedure and returns immediately to the Procedure Editor. This does not happen often.

- Terminates the current session.

OpenEdge messages end with a message number in parentheses. In this example, the message number is **200**:

```
** Unknown table name table. (200)
```

If you encounter an error that terminates OpenEdge, note the message number before restarting.
Obtaining more information about OpenEdge messages

In Windows platforms, use OpenEdge online help to obtain more information about OpenEdge messages. Many OpenEdge tools include the following Help menu options to provide information about messages:

- Choose Help → Recent Messages to display detailed descriptions of the most recent OpenEdge message and all other messages returned in the current session.
- Choose Help → Messages and then type the message number to display a description of a specific OpenEdge message.
- In the Procedure Editor, press the HELP key or F1.

On UNIX platforms, use the OpenEdge pro command to start a single-user mode character OpenEdge client session and view a brief description of a message by providing its number.

To use the pro command to obtain a message description by message number:

1. Start the Procedure Editor:

   ```
   OpenEdge-install-dir/bin/pro
   ```

2. Press F3 to access the menu bar, then choose Help → Messages.

3. Type the message number and press ENTER. Details about that message number appear.

4. Press F4 to close the message, press F3 to access the Procedure Editor menu, and choose File → Exit.

Third party acknowledgements

One or more products in the Progress OpenEdge v11.2 release includes third party components covered by licenses that require that the following documentation notices be provided:

Progress OpenEdge v11.2 may incorporate ANT v1.5.4. Such technology is subject to the following terms and conditions: The Apache Software License, Version 1.1, applies to all versions of up to ant 1.6.0 included. The Apache Software License, Version 1.1 - Copyright (C) 2000-2003 The Apache Software Foundation. All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met: 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. 3. The end-user documentation included with the redistribution, if any, must include the following acknowledgment: "This product includes software developed by the Apache Software Foundation"
Progress OpenEdge v11.2 may incorporate Xalan XSLT Processor v2.5.1 and Xerces for Java XML Parser v2.6.2. Such technology is subject to the following terms and conditions: The Apache Software License, Version 1.1 Copyright (c) 1999 The Apache Software Foundation. All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met: 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. 3. The end-user documentation included with the redistribution, if any, must include the following acknowledgment: "This product includes software developed by the Apache Software Foundation (http://www.apache.org/)." Alternately, this acknowledgment may appear in the software itself, if and wherever such third-party acknowledgments normally appear. 4. The names "Xerces" and "Apache Software Foundation" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact apache@apache.org. 5. Products derived from this software may not be called "Apache", nor may "Apache" appear in their name, without prior written permission of the Apache Software Foundation. THIS SOFTWARE IS PROVIDED "AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE APACHE SOFTWARE FOUNDATION OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. This software consists of voluntary contributions made by many individuals on behalf of the Apache Software Foundation. For more information on the Apache Software Foundation, please see <http://www.apache.org/>.
made by many individuals on behalf of the Apache Software Foundation and was originally based on software copyright (c) 1999, International Business Machines, Inc., http://www.ibm.com. For more information on the Apache Software Foundation, please see <http://www.apache.org/>.

Progress OpenEdge v11.2 may incorporate Crimson v1.1.3 from Progress Extensions for Eclipse v2.2.1. Such technology is subject to the following terms and conditions: The Apache Software License, Version 1.1 Copyright (c) 1999-2003 The Apache Software Foundation. All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met: 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. 3. The end-user documentation included with the redistribution, if any, must include the following acknowledgment: "This product includes software developed by the Apache Software Foundation (http://www.apache.org/)." Alternately, this acknowledgment may appear in the software itself, if and wherever such third-party acknowledgments normally appear. 4. The names "Xerces" and "Apache Software Foundation" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact apache@apache.org. 5. Products derived from this software may not be called "Apache", nor may "Apache" appear in their name, without prior written permission of the Apache Software Foundation. THIS SOFTWARE IS PROVIDED `AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE APACHE SOFTWARE FOUNDATION OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. This software consists of voluntary contributions made by many individuals on behalf of the Apache Software Foundation and was originally based on software copyright (c) 1999, International Business Machines, Inc., http://www.ibm.com. For more information on the Apache Software Foundation, please see <http://www.apache.org/>.

Progress OpenEdge v11.2 may incorporate SOAP v2.3.1 from Apache Foundation. Such technology is subject to the following terms and conditions: The Apache Software License, Version 1.1

Copyright (c) 1999 The Apache Software Foundation. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. The end-user documentation included with the redistribution, if any, must include the following acknowledgment: "This product includes software developed by the Apache Software Foundation (http://www.apache.org/)."

Alternately, this acknowledgment may appear in the software itself, if and wherever such third-party acknowledgments normally appear.

4. The names "SOAP" and "Apache Software Foundation" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact apache@apache.org.

5. Products derived from this software may not be called "Apache", nor may "Apache" appear in their name, without prior written permission of the Apache Software Foundation.

This software consists of voluntary contributions made by many individuals on behalf of the Apache Software Foundation. For more information on the Apache Software Foundation, please see <http://www.apache.org/>.

Progress OpenEdge v11.2 may incorporate ANTLR (Another Tool for Language Recognition) v2.7.6. Such technology is subject to the following terms and conditions: ANTLR 3 License [The BSD License] Copyright (c) 2003-2006, Terence Parr All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met: Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. Neither the name of the author nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission. THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Progress OpenEdge v11.2 may incorporate Decimal Conversion Code (dtoa.c; g_fmt.c; md_prod.s; decstrtof.c; decstrtod.c; dmisc.c; gdtoa.c; gdtoa.h; gdtoaimp.h; gethex.c; gmisc.c; hd_init.c; misc.c; smisc.c; strtodg.c; strtord.c; sum.c; ulp.c). Such technologies are subject to the following terms and conditions: dtoa.c License: The author of this software is David M. Gay. Copyright (c) 1991, 2000, 2001 by Lucent Technologies. Permission to use, copy, modify, and distribute this software for any purpose without fee is hereby granted, provided that this entire notice is included in all copies of any software which is or includes a copy or modification of this software and in all copies of the supporting documentation for such software. THIS SOFTWARE IS BEING PROVIDED "AS IS", WITHOUT ANY EXPRESS OR IMPLIED WARRANTY. IN PARTICULAR, NEITHER THE AUTHOR NOR LUCENT MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND CONCERNING THE MERCHANTABILITY OF THIS SOFTWARE OR ITS FITNESS FOR ANY PARTICULAR PURPOSE. g_fmt.c License: The author of this software is David M. Gay. Copyright (c) 1991, 1996 by Lucent Technologies. Permission to use, copy, modify, and distribute this software for any purpose without fee is hereby granted, provided that this entire notice is included in all copies of any software which is or includes a copy or modification of this software and in all copies of the supporting documentation for such software. THIS SOFTWARE IS BEING PROVIDED "AS IS", WITHOUT ANY EXPRESS OR IMPLIED WARRANTY. IN PARTICULAR, NEITHER THE AUTHOR NOR LUCENT MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND CONCERNING THE MERCHANTABILITY OF THIS SOFTWARE OR ITS FITNESS FOR ANY PARTICULAR PURPOSE.

md_prod.s License: The author of this software is David M. Gay. Copyright (c) 1991 by Lucent Technologies. Permission to use, copy, modify, and distribute this software for any purpose without fee is hereby granted, provided that this entire notice is included in all copies of any software which is or includes a copy or modification of this software and in all copies of the supporting documentation for such software. THIS SOFTWARE IS BEING PROVIDED "AS IS", WITHOUT ANY EXPRESS OR IMPLIED WARRANTY. IN PARTICULAR, NEITHER THE AUTHOR NOR LUCENT MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND CONCERNING THE MERCHANTABILITY OF THIS SOFTWARE OR ITS FITNESS FOR ANY PARTICULAR PURPOSE. decstrtod.c License: The author of this software is David M. Gay. Copyright (C) 1998-2001 by Lucent Technologies All Rights Reserved Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that the copyright notice and this permission notice and warranty disclaimer appear in supporting documentation, and that the name of Lucent or any of its entities not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. Lucent DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL LUCENT OR ANY OF ITS ENTITIES BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR
IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

decstrtof.c License: The author of this software is David M. Gay. Copyright (C) 1998, 2000 by Lucent Technologies All Rights Reserved Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that the copyright notice and this permission notice and warranty disclaimer appear in supporting documentation, and that the name of Lucent or any of its entities not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. LUCENT DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL LUCENT OR ANY OF ITS ENTITIES BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

dmisc.c License: The author of this software is David M. Gay. Copyright (C) 1998 by Lucent Technologies All Rights Reserved Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that the copyright notice and this permission notice and warranty disclaimer appear in supporting documentation, and that the name of Lucent or any of its entities not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. LUCENT DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL LUCENT OR ANY OF ITS ENTITIES BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

gdtoa.c License: The author of this software is David M. Gay. Copyright (C) 1998, 1999 by Lucent Technologies All Rights Reserved Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that the copyright notice and this permission notice and warranty disclaimer appear in supporting documentation, and that the name of Lucent or any of its entities not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. LUCENT DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL LUCENT OR ANY OF ITS ENTITIES BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

gdtoa.h License: The author of this software is David M. Gay. Copyright (C) 1998 by Lucent Technologies All Rights Reserved Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that the copyright notice and this permission notice and warranty disclaimer appear in supporting documentation, and that the name of Lucent or any of its entities not be used in advertising or publicity pertaining to
distribution of the software without specific, written prior permission. LUCENT
DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING
ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT
SHALL LUCENT OR ANY OF ITS ENTITIES BE LIABLE FOR ANY SPECIAL,
INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER
RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION
OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF
OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.
gdtoaimp.h License: The author of this software is David M. Gay. Copyright (C)
1998-2000 by Lucent Technologies All Rights Reserved Permission to use, copy,
modify, and distribute this software and its documentation for any purpose and without
fee is hereby granted, provided that the above copyright notice appear in all copies and
that both that the copyright notice and this permission notice and warranty disclaimer
appear in supporting documentation, and that the name of Lucent or any of its entities
not be used in advertising or publicity pertaining to distribution of the software without
specific, written prior permission. LUCENT DISCLAIMS ALL WARRANTIES WITH
REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL LUCENT OR ANY OF ITS
ENTITIES BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL
DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE,
DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR
OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE
USE OR PERFORMANCE OF THIS SOFTWARE. gethex.c License: The author of this
software is David M. Gay. Copyright (C) 1998 by Lucent Technologies All Rights
Reserved Permission to use, copy, modify, and distribute this software and its
documentation for any purpose and without fee is hereby granted, provided that the
above copyright notice appear in all copies and that both that the copyright notice and
this permission notice and warranty disclaimer appear in supporting documentation,
and that the name of Lucent or any of its entities not be used in advertising or publicity
pertaining to distribution of the software without specific, written prior permission.
LUCENT DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE,
INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS.
IN NO EVENT SHALL LUCENT OR ANY OF ITS ENTITIES BE LIABLE FOR ANY
SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES
WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS,
WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS
ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR
PERFORMANCE OF THIS SOFTWARE. gmisc.c License: The author of this software
is David M. Gay. Copyright (C) 1998 by Lucent Technologies All Rights Reserved
Permission to use, copy, modify, and distribute this software and its documentation
for any purpose and without fee is hereby granted, provided that the above copyright
notice appear in all copies and that both that the copyright notice and this permission
notice and warranty disclaimer appear in supporting documentation, and that the name
of Lucent or any of its entities not be used in advertising or publicity pertaining to
distribution of the software without specific, written prior permission. LUCENT
DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING
ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT
SHALL LUCENT OR ANY OF ITS ENTITIES BE LIABLE FOR ANY SPECIAL,
INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER
RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION
OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF
OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.
hd_init.c License: The author of this software is David M. Gay. Copyright (C) 2000 by Lucent Technologies All Rights Reserved Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that the copyright notice and this permission notice and warranty disclaimer appear in supporting documentation, and that the name of Lucent or any of its entities not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. LUCENT DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL LUCENT OR ANY OF ITS ENTITIES BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

misc.c License: The author of this software is David M. Gay. Copyright (C) 1998, 1999 by Lucent Technologies All Rights Reserved Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both the copyright notice and this permission notice and warranty disclaimer appear in supporting documentation, and that the name of Lucent or any of its entities not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. LUCENT DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL LUCENT OR ANY OF ITS ENTITIES BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

misc.c License: The author of this software is David M. Gay. Copyright (C) 1998, 1999 by Lucent Technologies All Rights Reserved Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both the copyright notice and this permission notice and warranty disclaimer appear in supporting documentation, and that the name of Lucent or any of its entities not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. LUCENT DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL LUCENT OR ANY OF ITS ENTITIES BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

strtodg.c License: The author of this software is David M. Gay. Copyright (C) 1998-2001 by Lucent Technologies All Rights Reserved Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both the copyright notice and this permission notice and warranty disclaimer appear in supporting documentation, and that the name of Lucent or any of its entities not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. LUCENT DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL LUCENT OR ANY OF ITS ENTITIES BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.
LUCENT DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL LUCENT OR ANY OF ITS ENTITIES BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

strtord.c License: The author of this software is David M. Gay. Copyright (C) 1998, 2000 by Lucent Technologies All Rights Reserved Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that the copyright notice and this permission notice and warranty disclaimer appear in supporting documentation, and that the name of Lucent or any of its entities not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

LUCENT DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL LUCENT OR ANY OF ITS ENTITIES BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

sum.c License: The author of this software is David M. Gay. Copyright (C) 1998 by Lucent Technologies All Rights Reserved Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that the copyright notice and this permission notice and warranty disclaimer appear in supporting documentation, and that the name of Lucent or any of its entities not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

LUCENT DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL LUCENT OR ANY OF ITS ENTITIES BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

ulp.c License: The author of this software is David M. Gay. Copyright (C) 1998, 1999 by Lucent Technologies All Rights Reserved Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that the copyright notice and this permission notice and warranty disclaimer appear in supporting documentation, and that the name of Lucent or any of its entities not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. LUCENT DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL LUCENT OR ANY OF ITS ENTITIES BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.
Progress OpenEdge v11.2 may incorporate JSTL v1.0 from Sun Microsystems, Inc. Such technologies are subject to the following terms and conditions: Code sample License Copyright 1994-2006 Sun Microsystems, Inc. All Rights Reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met: Redistribution of source code must retain the above copyright notice, this list of conditions and the following disclaimer. Redistribution in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. Neither the name of Sun Microsystems, Inc. or the names of contributors may be used to endorse or promote products derived from this software without specific prior written permission. This software is provided "AS IS," without a warranty of any kind. ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE HEREBY EXCLUDED. SUN MICROSYSTEMS, INC. ("SUN") AND ITS LICENSORS SHALL NOT BE LIABLE FOR ANY DAMAGES SUFFERED BY LICENSEE AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THIS SOFTWARE OR ITS DERIVATIVES. IN NO EVENT WILL SUN OR ITS LICENSORS BE LIABLE FOR ANY LOST REVENUE, PROFIT OR DATA, OR FOR DIRECT, INDIRECT, SPECIAL, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES, HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF LIABILITY, ARISING OUT OF THE USE OF OR INABILITY TO USE THIS SOFTWARE, EVEN IF SUN HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. You acknowledge that this software is not designed, licensed or intended for use in the design, construction, operation or maintenance of any nuclear facility.

Progress OpenEdge v11.2 may incorporate Quartz Enterprise Job Scheduler v1.3.2 from James House. Such technologies are subject to the following terms and conditions: Copyright James House (c) 2001-2003 All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met: 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION). HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. You acknowledge that this software is not designed, licensed or intended for use in the design, construction, operation or maintenance of any nuclear facility.

Progress OpenEdge v11.2 may incorporate YAJL v0.4.0 from Lloyd Hilaiel. Such technology is subject to the following terms and conditions: Copyright 2007, Lloyd Hilaiel. Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met: 1. Redistributions of
source code must retain the above copyright notice, this list of conditions and the
following disclaimer. 2. Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation
and/or other materials provided with the distribution. 3. Neither the name of Lloyd
Hilaiel nor the names of its contributors may be used to endorse or promote products
derived from this software without specific prior written permission. THIS SOFTWARE
IS PROVIDED BY THE AUTHOR "AS IS" AND ANY EXPRESS OR IMPLIED
WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
 DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Progress OpenEdge v11.2 may incorporate zlib v1.1.4 from Jean-loup Gailly & Mark
Alder. Such technology is subject to the following terms and conditions: Copyright
notice: (C) 1995-2002 Jean-loup Gailly and Mark Adler This software is provided 'as-is',
without any express or implied warranty. In no event will the authors be held liable for
any damages arising from the use of this software. Permission is granted to anyone to
use this software for any purpose, including commercial applications, and to alter it and
redistribute it freely, subject to the following restrictions: 1. The origin of this software
must not be misrepresented; you must not claim that you wrote the original software. If
you use this software in a product, an acknowledgment in the product documentation
would be appreciated but is not required. 2. Altered source versions must be plainly
marked as such, and must not be misrepresented as being the original software. 3.
This notice may not be removed or altered from any source distribution.

Jean-loup Gailly        Mark Adler
jloup@gzip.org          madler@alumni.caltech.edu

Progress OpenEdge v11.2 may incorporate zlib ZLIB.NET Free v1.0.4 from
ComponentAce. Such technology is subject to the following terms and conditions:
Copyright (c) 2006-2007, ComponentAce http://www.componentace.com All rights
reserved. Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
Redistributions of source code must retain the above copyright notice, this list of
conditions and the following disclaimer. Redistributions in binary form must reproduce
the above copyright notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution. Neither the name
of ComponentAce nor the names of its contributors may be used to endorse or promote
products derived from this software without specific prior written permission. THIS
SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
 DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Progress OpenEdge v11.2 may incorporate Jing 20030619 from Progress Extensions for Eclipse v2.2.1. Such technology is subject to the following terms and conditions:

Jing Copying Conditions. Copyright (c) 2001-2003 Thai Open Source Software Center Ltd. All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. Neither the name of the Thai Open Source Software Center Ltd nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Third-party JARs - This distribution includes some additional JAR files, which have their own copying conditions:

- saxon.jar Comes from the Saxon 6.5.2 distribution and is covered by these conditions.
- xercesImpl.jar, xml-apis.jar Come from the Xerces-J 2.4.0 distribution and are covered by the Apache Software License.
- isorelax.jar Comes from ISO RELAX 2003/01/08 distribution and is covered by the following license: Copyright (c) 2001-2002, SourceForge ISO-RELAX Project (ASAMI Tomoharu, Daisuke Okajima, Kohsuke Kawaguchi, and MURATA Makoto) Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions: The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software. THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Progress OpenEdge v11.2 may incorporate Trang 20030619 from Progress Extensions for Eclipse v2.2.1. Such technology is subject to the following terms and conditions:
conditions: Copyright (c) 2002, 2003 Thai Open Source Software Center Ltd. All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. Neither the name of the Thai Open Source Software Center Ltd nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission. THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Progress OpenEdge v11.2 may incorporate xpp3-1.1.3.4.O from Progress Extensions for Eclipse v2.2.1. Such technology is subject to the following terms and conditions: Indiana University Extreme! Lab Software License Version 1.1.1 Copyright (c) 2002 Extreme! Lab, Indiana University. All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. The end-user documentation included with the redistribution, if any, must include the following acknowledgment:

"This product includes software developed by the Indiana University Extreme! Lab (http://www.extreme.indiana.edu/)."

Alternately, this acknowledgment may appear in the software itself, if and wherever such third-party acknowledgments normally appear.

4. The names "Indiana Univeristy" and "Indiana Univeristy Extreme! Lab" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact http://www.extreme.indiana.edu/.

5. Products derived from this software may not use "Indiana Univeristy" name nor may "Indiana Univeristy" appear in their name, without prior written permission of the Indiana University.
THIS SOFTWARE IS PROVIDED "AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHORS, COPYRIGHT HOLDERS OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Progress OpenEdge v11.2 may incorporate International Classes for Unicode (International Components for Unicode) v2.4 from IBM. Such technology is subject to the following terms and conditions: ICU License - The ICU project is licensed under the X License (see also the x.org original), which is compatible with GPL but non-copyleft. The license allows ICU to be incorporated into a wide variety of software projects using the GPL license. The X license is compatible with the GPL, while also allowing ICU to be incorporated into non-open source products. License ICU License - ICU 1.8.1 and later COPYRIGHT AND PERMISSION NOTICE Copyright (c) 1995-2003 International Business Machines Corporation and others All rights reserved. Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, provided that the above copyright notice(s) and this permission notice appear in all copies of the Software and that both the above copyright notice(s) and this permission notice appear in supporting documentation. THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE. Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder. All trademarks and registered trademarks mentioned herein are the property of their respective owners.

Progress OpenEdge v11.2 may incorporate International Components for Unicode v4.8.0. Such technology is subject to the following terms and conditions: ICU License - ICU 1.8.1 and later COPYRIGHT AND PERMISSION NOTICE Copyright (c) 1995-2011 International Business Machines Corporation and others All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge,
publish, distribute, and/or sell copies of the Software, and to permit persons to whom
the Software is furnished to do so, provided that the above copyright notice(s) and this
permission notice appear in all copies of the Software and that both the above
copyright notice(s) and this permission notice appear in supporting documentation.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR
ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR
ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR
PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER
TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR
PERFORMANCE OF THIS SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in
advertising or otherwise to promote the sale, use or other dealings in this Software
without prior written authorization of the copyright holder.

All trademarks and registered trademarks mentioned herein are the property of their
respective owners.

Progress OpenEdge v11.2 may incorporate Progress Extensions for Eclipse v2.2.1
which incorporates Saxon-B v8.9.0.4 (saxon8.jar, saxon8-xpath.jar, saxon8-xom.jar,
saxon8-sql.jar, saxon8-jdom.jar, saxon8-dom.jar). The contents of these files are
subject to the Mozilla Public License Version 1.0 (the "License") provided below; you
may not use this file except in compliance with the License. You may also obtain a copy
of the License at http://www.mozilla.org/MPL/. Software distributed under the
License is distributed on an "AS IS" basis, WITHOUT WARRANTY OF ANY KIND,
either express or implied. See the License for the specific language governing rights
and limitations under the License. PSC will, at Licensee's request, provide copies of the
source code for this third party technology, including modifications, if any, made by
PSC. PSC may charge reasonable shipping and handling charges for such distribution.
Licensee may also obtain the source code through
http://communities.progress.com/pcom/docs/DOC-16051 by following the
instructions set forth therein. The Original Code of Saxon comprises all those
components which are not explicitly attributed to other parties. The Initial Developer of
the Original Code is Michael Kay. Until February 2001 Michael Kay was an employee
of International Computers Limited (now part of Fujitsu Limited), and original code
developed during that time was released under this license by permission from
was an employee of Software AG, and code developed during that time was released
under this license by permission from Software AG, acting as a "Contributor".
Subsequent code has been developed by Saxonica Limited, of which Michael Kay is a
Director, again acting as a "Contributor". A small number of modules, or enhancements
to modules, have been developed by other individuals (either written specially for
Saxon, or incorporated into Saxon having initially been released as part of another
open source product). Such contributions are acknowledged individually in comments
attached to the relevant code modules. All Rights Reserved.

Progress OpenEdge v11.2 may incorporate Rhino v1.6R1 from Progress Extensions
for Eclipse v2.2.1. The contents of this file are subject to the Netscape Public License
Version 1.1 (the "License"); you may not use this file except in compliance with the
License. You may obtain a copy of the License at http://www.mozilla.org/NPL/. Software distributed under the License is distributed on an "AS IS" basis, WITHOUT WARRANTY OF ANY KIND, either express or implied. See the License for the specific language governing rights and limitations under the License.

The Original Code is Rhino code, released May 6, 1999. The Initial Developer of the Original Code is Netscape Communications Corporation. Portions created by Netscape are Copyright (C) 1997-1999 Netscape Communications Corporation. All Rights Reserved. Contributor(s): Igor Bukanov. PSC will, at Licensee's request, provide copies of the source code for this third party technology, including modifications, if any, made by PSC. PSC may charge reasonable shipping and handling charges for such distribution. Licensee may also obtain the source code through http://communities.progress.com/pcom/docs/DOC-16051 by following the instructions set forth therein.

Progress OpenEdge v11.2 includes the RSA Data Security, Inc. MD5 Message-Digest Algorithm. Copyright ©1991-2, RSA Data Security, Inc. Created 1991. All rights reserved. (MD5 Encryption Library v3.0 and MD5 Encryption vMD5C.C) These technologies are subject to the following terms and conditions: RSA Data Security MD5 message-digest algorithm RSA Data Security, Inc. MD5C.C - RSA Data Security, Inc., MD5 message-digest algorithm Copyright (C) 1991-2, RSA Data Security, Inc. Created 1991. All rights reserved. License to copy and use this software is granted provided that it is identified as the "RSA Data Security, Inc. MD5 Message-Digest Algorithm" in all material mentioning or referencing this software or this function. License is also granted to make and use derivative works provided that such works are identified as "derived from the RSA Data Security, Inc. MD5 Message-Digest Algorithm" in all material mentioning or referencing the derived work. RSA Data Security, Inc. makes no representations concerning either the merchantability of this software or the suitability of this software for any particular purpose. It is provided "as is" without express or implied warranty of any kind. These notices must be retained in any copies of any part of this documentation and/or software.
Supporting OpenEdge Servers, Messengers, DataServers, and Adapters

This chapter provides an overview of OpenEdge® Management support for the OpenEdge® server products (AppServer, WebSpeed® Transaction Server, and NameServer), DataServers (for ODBC, Oracle, and Microsoft SQL Server), and adapters (AppServer Internet Adapter, SonicMQ® Adapter, and Web Services Adapter).

Topics in this chapter include:

- **Overview**
- **Features supporting OpenEdge server, DataServer, Messenger, and Adapter resources**
- **OpenEdge Management monitoring prerequisites**

**Note:** Throughout this guide, references to OpenEdge servers are commonly interchanged with these references: OpenEdge, OpenEdge server-related resources, and OpenEdge resources.
Overview

You can use OpenEdge Management to configure and manage various OpenEdge resources. Refer to Table 1 for an overview of which features you can use with each server, DataServer, Messenger, or Adapter resource.

An overview of each of the resources follows Table 1-1.

<table>
<thead>
<tr>
<th>Feature available</th>
<th>App Server</th>
<th>Name Server</th>
<th>Web Speed Server</th>
<th>App Server Internet Adapter</th>
<th>Sonic MQ Adapter</th>
<th>Web Services Adapter</th>
<th>Data Server</th>
<th>Web Speed Msngr</th>
<th>OE Web Server</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configurati</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>on</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control (start/stop instances)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Enable/</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>disable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Status</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Operation</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes^1</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>al views</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log file</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>viewer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log file</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>monitor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitoring</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>plans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Configuration</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Advisor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job support</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Report templates</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Creating rule sets</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No^2</td>
<td>No^2</td>
<td>No^2</td>
<td>No^2</td>
<td>No^2</td>
<td>No</td>
</tr>
<tr>
<td>Using rules and</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes^3</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes^3</td>
<td>Yes</td>
</tr>
<tr>
<td>rule sets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alerts support</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

^1 Web Services Adapter Only
^2 Requires specific system configuration
^3 Requires specific rule set configuration
Table 1: **OpenEdge Management feature availability**

<table>
<thead>
<tr>
<th>Feature available</th>
<th>App Server</th>
<th>Name Server</th>
<th>Web Speed Server</th>
<th>App Server Internet Adapter</th>
<th>Sonic MQ Adapter</th>
<th>Web Services Adapter</th>
<th>Data Server</th>
<th>Web Speed Msngr</th>
<th>OE Server</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scheduling and polling support</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Graph support</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Trend support</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>My Dashboard support</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Collections support</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

1. A Deployed Web Service view is provided for the Web Services Adapter.
2. Although you cannot create new rules sets for this resource, you can add existing rules to its default rule set.
3. For log file monitor only.

**Note:** OpenEdge database monitoring is documented in *OpenEdge Management: Database Management.*
AppServer

The AppServer is an OpenEdge application that allows you to build and deploy complex distributed applications using ABL. Each AppServer consists of an Application broker (also known as an AppServer broker, or broker) and one or more Application servers. AppServers work with the AdminServer and an optional, integrated OpenEdge NameServer. OpenEdge Management supports configuring, discovering, and monitoring AppServer brokers and managing activities associated with their respective servers from the OpenEdge Management console.

NameServer

The NameServer is an administrative component that can be integrated with the Transaction Server and AppServer. The NameServer works with a pool of brokers to identify and distribute client requests to register specific application services. For example, an AppServer broker can register Application Services with a NameServer; a WebSpeed broker can register WebSpeed Services that it provides with a NameServer. Also, a NameServer can connect a client request for a WebSpeed Service that is registered with the NameServer with an available WebSpeed broker. The NameServer can also provide location transparency.

OpenEdge Management supports configuring, discovering, and monitoring NameServers. You can also manage activities associated with NameServers from the OpenEdge Management console.

Note: The NameServer can also be configured to work with other OpenEdge products such as OpenEdge DataServers and the SonicMQ Adapter. For more information, see the relevant OpenEdge product documentation.

WebSpeed Transaction Server

The WebSpeed product includes WebSpeed Messengers, WebSpeed brokers, and WebSpeed agents. WebSpeed Transaction Servers work with the AdminServer and NameServer. The WebSpeed brokers launch WebSpeed Agents to drive your Web applications.

OpenEdge Management supports configuring, discovering, and monitoring WebSpeed brokers and managing activities associated with their respective agents from the OpenEdge Management console.

Note: OpenEdge Management supports monitoring and managing the WebSpeed Transaction Server product. Throughout this guide, the WebSpeed Transaction Server is commonly referred to as either the Transaction Server or WebSpeed.
WebSpeed Messenger

The WebSpeed Messenger resides on the Web server machine. It is a process that handles the transfer of data between the Web server and the WebSpeed agent during a single Web transaction. The Messenger is either a CGI program, or an ISAPI or NSAPI process.

There are four different WebSpeed Messengers:

- **CGIIP Messenger** — Runs on almost all Web servers, but tends to have the slowest response times.
- **WSASP Messenger** — Calls WebSpeed applications from a Microsoft Active Server Page. It cannot coexist with any other Messenger on your Web server.
- **WSISA Messenger** — Runs on Microsoft IIS Web servers.
- **WSNSA Messenger** — Runs on Netscape Web servers.

You can use OpenEdge Management to edit the Messenger's properties. You cannot, however, create or delete WebSpeed Messengers from OpenEdge Management.

AppServer Internet Adapter

With the AppServer Internet Adapter (AIA), you can make AppServer or SonicMQ Adapter application services available over the Web to ABL applications, and you make AppServer application services available over the Web to .NET and Java Open Clients. The AIA is a Java Servlet that is invoked by a Java Servlet Engine (JSE).

SonicMQ Adapter

The SonicMQ Adapter allows OpenEdge applications to communicate via JMS Messaging through SonicMQ.

Web Services Adapter

The Web Services Adapter (WSA) is a Java servlet that exposes AppServer applications as Web services. The WSA is installed and runs in the context of a Java servlet engine (JSE) that, in turn, runs independently or in the context of a Web server.

To expose AppServer applications as Web services, the WSA serves a dual role:

- As a gateway between the Simple Object Access Protocol (SOAP) request messages, which Web services and Web service clients exchange, and ABL applications on the AppServer, which execute Web service requests
- As an application server that hosts, manages, and provides communications and run-time support for multiple deployed Web Service applications
Chapter 1: Supporting OpenEdge Servers, Messengers, DataServers, and Adapters

DataServers for ODBC, Oracle, and MS SQL Server

The OpenEdge ODBC DataServer allows the OpenEdge Application Development Environment (ADE) and applications created with OpenEdge to access certain ODBC-compliant databases, such as DB2 and Sybase.

The OpenEdge Oracle DataServer allows the OpenEdge Application Development Environment (ADE) and applications created with OpenEdge to access Oracle databases.

The OpenEdge MS SQL Server DataServer allows the OpenEdge Application Development Environment (ADE) and applications created with OpenEdge to access Microsoft SQL Server.

Managing broker resources

On systems that support shared processes, a broker is a main server process. A broker functions like a traffic director, handling client requests for specific resources that support the business logic associated with an application. A broker identifies and accounts for resource availability and consumption. The broker accomplishes these tasks by processing a pool of servers or agents and attempting to fulfill specific resource requests.

For example, an AppServer broker manages connection requests initiated by its clients for the business logic and processes located on an AppServer. In this context, a broker executes its tasks somewhat in isolation, only executing and performing according to its defined configuration properties and parameters.

Using OpenEdge Management you can configure brokers to optimize performance. The OpenEdge Management console supports viewing status details, and controlling, monitoring, and managing broker components to ensure appropriate resources are available.

The ubroker.properties file

The ubroker.properties file stores all the configuration definitions for each instance of the AppServer Internet Adapter, AppServer, DataServers, Messengers, NameServer, SonicMQ Adapter, WebSpeed Transaction Server, and the Web Services Adapter. Each configuration definition contains environment variables, registry entries (in Windows), and property settings for each product instance. OpenEdge Management references and displays this configuration data.

You can use OpenEdge Management, OpenEdge Explorer, or the command line to customize configuration details stored in the ubroker.properties file. Any property modifications you make to instances of OpenEdge servers, DataServers, Messengers, or Adapters in OpenEdge Management are automatically reflected in ubroker.properties. Likewise, any changes you make in ubroker.properties are automatically reflected in OpenEdge Management or OpenEdge Explorer.

Note: Although making manual edits to ubroker.properties file is possible, Progress Software recommends that you use OpenEdge Management, OpenEdge Explorer, or the Mergeprop utility to make property changes. For more information about the Mergeprop utility, see OpenEdge Getting Started: Installation and Configuration.
Server and agent details

In association with each broker, OpenEdge Management displays server and agent data. This information provides you additional performance data to better manage your connection workload. You can add or trim servers or agents to maximize the use of your existing resources and respond to fluctuations in processing demands.

The OpenEdge server resource discovery process begins with the discovery of resources and the automatic creation of default monitoring plans for these resources. As part of this process, OpenEdge Management creates log file monitors not only for the primary local resources, but also for the server and agent resources associated with these resources. For example, OpenEdge Management creates an AppServer broker server log file for each local AppServer broker resource.

Log file monitors, in general, are information tools that can help you to analyze the data you can collect from within their associated files. These details can help you determine performance expectations and examine trends.

Log file monitors and log file viewers

Log file monitors and log file viewers are available for each of the supported OpenEdge Management and OpenEdge resources. For specifics about each resource’s log file monitor or log file viewer, see the section listed in the following table:

<table>
<thead>
<tr>
<th>Resource</th>
<th>Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>WebSpeed</td>
<td>3, “Managing WebSpeed Transaction Server Data”</td>
</tr>
<tr>
<td>AppServer</td>
<td>4, “Managing AppServer Data”</td>
</tr>
<tr>
<td>NameServer</td>
<td>5, “Managing NameServer Data”</td>
</tr>
<tr>
<td>DataServer</td>
<td>6, “Managing DataServer Data”</td>
</tr>
<tr>
<td>AppServer Internet Adapter</td>
<td>7, “Managing AppServer Internet Adapter Data”</td>
</tr>
<tr>
<td>SonicMQ Adapter</td>
<td>8, “Managing SonicMQ Adapter Data”</td>
</tr>
<tr>
<td>Web Services Adapter</td>
<td>9, “Managing Web Services Adapter Data”</td>
</tr>
<tr>
<td>WebSpeed Messenger</td>
<td>10, “Managing WebSpeed Messenger Data”</td>
</tr>
<tr>
<td>OE Web Server</td>
<td>14, “Managing OE Web Server Data”</td>
</tr>
</tbody>
</table>
Features supporting OpenEdge server, DataServer, Messenger, and Adapter resources

The following OpenEdge Management features support servers, DataServers, Messengers, and Adapters:

- Automatic discovery of each server, DataServer, Messenger, and Adapter resource that is locally defined. Specific configuration tasks are not required for these resources because OpenEdge Management recognizes the configuration data already established in the `ubroker.properties` file.

  If you want to configure or reconfigure one of these instances, you can do so using OpenEdge Management (or OpenEdge Explorer). Configuration changes you make in OpenEdge Management are automatically reflected in the `ubroker.properties` file and vice versa.

- Automatic discovery of each WebSpeed, AppServer, and NameServer resource that is remotely defined. However, remote monitoring requires some additional steps before this feature is available. See OpenEdge Management and OpenEdge Explorer: Getting Started for details.

- Integration into the OpenEdge Management console and accessibility using OpenEdge Management features, functionality, and navigational conventions. See Table 1 for additional details about the features and functionality for each resource.

- Use of the Configuration Advisor feature for WebSpeed and AppServer broker resources. This feature helps you determine optimum settings for threshold values used for defined rules. The Configuration Advisor suggests values by analyzing data stored in the OpenEdge Management Trend Database.

- For WebSpeed and AppServer brokers resources, OpenEdge Management supports the collection of statistical data. This data can be used to generate OpenEdge Management-based reports and graphs.
OpenEdge Management monitoring prerequisites

This section highlights the criteria that must be met to enable OpenEdge Management to recognize and monitor OpenEdge server resources.

Installation

An OpenEdge Management installation and configuration process must include a Transaction Server product and/or AppServer product, depending on the specific product resource monitoring capabilities you intend to use. Trending is not required in order to monitor OpenEdge resources. In order to trend and run reports, however, a trend database must be configured either locally or remotely against another OpenEdge installation. (This requirement assumes that the other installation has a database license.)

Discovering and enabling local resources

Once you complete the installation and configuration steps, OpenEdge Management automatically creates an OpenEdge Management resource monitor for each AppServer Internet Adapter, AppServer broker, NameServer instance, WebSpeed broker, DataServer broker, Messenger, SonicMQ Adapter, and Web Services Adapter that it detects.

This discovery process occurs any time OpenEdge Management detects new OpenEdge resource instances. This process will initially take place after you install and configure OpenEdge Management, and any time new OpenEdge resources are introduced.

As part of this discovery process, OpenEdge Management enables each locally defined broker or instance and begins monitoring them immediately. You can elect to disable any resources, implement data collection (for brokers only), and modify the default monitoring plan and rules as needed.

Note: OpenEdge Management runs as a managed service in the AdminServer. Therefore, a local resource is defined as a resource recognized by OpenEdge Management and running in the AdminServer on the same machine where OpenEdge Management is installed.

Discovering and enabling remote resources

If you have performed the necessary steps to monitor remote resources, OpenEdge Management will also create a resource monitor for each remote broker or instance it detects.

As in the discovery process for local resources, OpenEdge Management enables each remotely defined broker or instance and begins monitoring each of them immediately. This discovery process occurs any time OpenEdge Management detects new OpenEdge resource instances. This process will initially take place after you install and configure OpenEdge Management, and any time new OpenEdge resources are introduced.
As needed, you can elect to disable any resources, implement data collection (for brokers only), or modify the default monitoring plan and rules.

**Note:** OpenEdge Management runs as a managed service in the AdminServer. Therefore, a remote resource is defined as an OpenEdge Management-recognized resource that runs in an AdminServer that is not running OpenEdge Management. This resource might be on a machine that is physically separate from the machine where OpenEdge Management is installed, or it could be a different instance of an AdminServer running on the same machine on which OpenEdge Management is running.

### Role authorization and OpenEdge Management tasks

Users with Administrator privileges can automatically perform all of the following OpenEdge Management tasks:

- Starting and stopping brokers
- Adding and trimming agents
- Adding and trimming servers
- Stopping, or killing, processes
- Configuring and modifying properties for AppServer Internet Adapter, AppServer, NameServer, DataServer, Messenger, Sonic MQ Adapter, WebSpeed Transaction Server, and Web Services Adapter resource instances
- Initiating OpenEdge rule threshold calculations using the Configuration Advisor (applicable for AppServer and WebSpeed Transaction Server instances)
- Deleting AppServer Internet Adapter, AppServer, DataServer, NameServer, SonicMQ Adapter, WebSpeed Transaction Server, and WebSpeed Server Transaction instances

For users with Operator privileges, the OpenEdge Management Administrator must grant explicit authorization to perform any of the tasks in the previous list.
Getting Started

This chapter describes how to navigate the OpenEdge Management console to access OpenEdge resource-related details. Information presented in this chapter assumes that you have a working knowledge of the management console functionality described in *OpenEdge Management: Resource Monitoring*.

Topics in this chapter include:

- OpenEdge Management console
- Using the OpenEdge Management resource details page
- Accessing OpenEdge Management resource information
- Starting or Stopping OpenEdge resources
- Deleting OpenEdge Management resources
- Effects of an AdminServer warm start on OpenEdge Management
- Understanding OpenEdge server graphs
OpenEdge Management console

The menu bar and toolbar available from the OpenEdge Management console allow you to access features and functionality.

This section highlights:

- OpenEdge Management menu bar and toolbar
- Using the management console menu bar for OpenEdge server tasks

OpenEdge Management menu bar and toolbar

OpenEdge Management provides a management console menu bar and a toolbar.

Management console menu bar

The management console menu bar, shown in Figure 1, appears at the top of the management console. The bar consists of several tabs that allow you to work with different features.

![Menu bar screenshot](image)

**Figure 1:** Menu bar

Clicking a tab changes the content that appears in the management console’s list frame (the left pane) and detail frame (the right pane), allowing you to perform tasks associated with that feature.

See the “Using the management console menu bar for OpenEdge server tasks” section on page 50 for more information about the OpenEdge tasks you can perform.
Management console toolbar

The detail frame toolbar appears at the top of the detail frame, and the list frame toolbar appears at the top of the list frame in the management console.

Figure 2 shows the detail menu bar that appears on the My Collections Home Default page when you click My Dashboard on the management console menu bar.

Figure 2: Toolbars in the Collection view

The Collection and View options allow you to access specific activities associated with setting up and managing collections. These options supplement the other management console menu bar options.

For more details about menu bars and how to navigate through the OpenEdge Management console, see the appropriate section of *OpenEdge Management and OpenEdge Explorer: Getting Started*. 
Using the management console menu bar for OpenEdge server tasks

Table 2 describes how to use the management console menu bar to perform OpenEdge server-related tasks. For a broader definition of each menu bar’s functional area and its associated activities, see the appropriate section of OpenEdge Management and OpenEdge Explorer: Getting Started.

Table 2: Performing OpenEdge Management activities

<table>
<thead>
<tr>
<th>Click this tab . . .</th>
<th>To perform these activities . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resources</td>
<td>Configure properties; access and update resource details. When OpenEdge Management is installed, local and remote OpenEdge resources are automatically discovered as Enabled and initial status information is reported. For more information about this topic, see the “Accessing OpenEdge Management resource information” section on page 54. Additional specific management and monitoring tasks can be performed using the OpenEdge Management Details page. For more information, see the “Using the OpenEdge Management resource details page” section on page 51.</td>
</tr>
<tr>
<td>Library</td>
<td>Access and perform the library-based functions available for a particular resource. See the relevant chapters in this guide for library options, such as creating and deleting rule sets for specific OpenEdge resources.</td>
</tr>
<tr>
<td>Reports</td>
<td>Access and generate reports. Note: Report templates are not available for all resources. For details about reports, see the appropriate sections of OpenEdge Management: Reporting.</td>
</tr>
<tr>
<td>Options</td>
<td>Review and update authorization features related to OpenEdge resources. For a summary of OpenEdge Management authorization options, see the “Role authorization and OpenEdge Management tasks” section on page 46.</td>
</tr>
</tbody>
</table>

Note: For details about the Job category and jobs, see the appropriate sections of OpenEdge Management: Resource Monitoring.

For details about managing and working with databases enabled for multi-tenancy, see OpenEdge Management and OpenEdge Explorer: Configuring Multi-tenancy.
Using the OpenEdge Management resource details page

The OpenEdge Management resource Details page is the central user interface of the management console. From the Details page you can access information for each OpenEdge resource. Each resource instance has its own Details page (also called Home page); and each Details page provides the controls, activities, and data associated with the resource.

Note: This guide references the OpenEdge Management Details page when addressing functionality common to the OpenEdge Management resource-related Details pages. However, for a discussion of functionality unique to a product, the specific Details page is referenced, as appropriate.

See the "Accessing OpenEdge Management resource information" section on page 54 for information about how to access the OpenEdge Details page.

Details page format and content

Figure 3 shows a WebSpeed Details page.
Each details page follows the OpenEdge Management title page naming conventions. That is, the specific resource type, container name, and resource name appear in the upper-left corner of the Details page. For example, in Figure 3, the title **WebSpeed: nbaspauldxip2.wsbroker1** identifies the default **wsbroker1** broker discovered on the container (host) **nbaspauldxip2** as a Transaction Server.

A container represents a named instance of an AdminServer that is either running OpenEdge Management or configured to be monitored by OpenEdge Management. There is a one-to-one relationship between the host name and container name, unless there are multiple AdminServers running OpenEdge Management on the same host.

Table 3 identifies and provides a general description of the four sections on the typical Details page in OpenEdge Management.

**Table 3: Sections of the OpenEdge Management Details page**

<table>
<thead>
<tr>
<th>This section . . .</th>
<th>Identifies information you use to . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Status</strong></td>
<td>Review the current operational statistics for a specific resource</td>
</tr>
<tr>
<td><strong>Command and control</strong></td>
<td>Perform various tasks associated with a resource, including:</td>
</tr>
<tr>
<td></td>
<td>• Modifying the start and stop controls for a specific resource, or adding and/or trimming a resource’s pool of available agents (WebSpeed) or servers (AppServer)</td>
</tr>
<tr>
<td></td>
<td>• Accessing and examining log file monitor and viewer details</td>
</tr>
<tr>
<td></td>
<td>• Configuring monitoring plans and rules</td>
</tr>
<tr>
<td></td>
<td>• Generating recommended rule threshold settings using the Configuration Advisor (WebSpeed brokers and AppServer brokers polled rules only)</td>
</tr>
<tr>
<td></td>
<td>• Configuring the broker/resource’s properties</td>
</tr>
<tr>
<td></td>
<td>• List AppServer Client Connections (AppServer resource only)</td>
</tr>
<tr>
<td><strong>Operational views</strong></td>
<td>Help analyze the performance of AppServers, NameServers, WebSpeed Transaction Servers, SonicMQ Adapters, Web Services Adapters, and DataServers</td>
</tr>
<tr>
<td><strong>Informational views</strong></td>
<td>Review the static configuration values for a resource as they are defined in the ubroker.properties file</td>
</tr>
</tbody>
</table>
Polling and statistical details on the OpenEdge Management Details page

As shown in Figure 4, the upper-right corner of the page shows summarized resource polling information pertinent to the currently displayed resource monitor. This section can also report broker resource status details.

Figure 4: Broker statistics not available information

Figure 4 shows the additional line of information—Statistics collection not enabled—in the upper-right corner. This message indicates that this resource is not currently collecting statistical data. Therefore, no trending, polling, or graphing can occur.

The WebSpeed and AppServer Details pages also present the collection status information in the Status section.

For more information about collecting statistics and specific OpenEdge resources, see:

- The “Data collection details” section on page 73, as it describes using this field with WebSpeed broker resources
- The “Data collection details” section on page 104, as it describes using this field with AppServer broker resources
Accessing OpenEdge Management resource information

From the management console, you can display OpenEdge Management resources and their associated data. There is a unique Details page for each instance of an OpenEdge resource type.

This section describes how to access:

- OpenEdge Management resource information from the list frame
- A specific Details page

For more details about navigating the OpenEdge Management console, see *OpenEdge Management and OpenEdge Explorer: Getting Started*.

Accessing OpenEdge resources from the grid frame

This section describes how to access OpenEdge resources from the grid frame.

To access OpenEdge resources from the grid frame:

1. Click **Resources** in the management console menu. All resources managed by your console appear in the grid frame. By default, the resources are grouped by their current status.

2. From the grid frame, you can:

   • Select multiple resources to perform a Start or Stop operation (depending on the resource type) or view their overall status.
   
   • Search for resources using a keyword, wildcard characters, or tags.
   
   • Filter resources based either on their **Type** or their current **Status**, or both.
   
   • Group resources based on the **Container** (local or remote), **Status**, or **Type**.
   
   • Sort resources by **Resource**, **Type**, **Status**, or **Alerts**. You can also sort resources by **Container**. To add or remove columns to sort resources, refer to *OpenEdge Management and OpenEdge Explorer: Getting Started*.

   • View a resource's detail by clicking the Edit icon for the resource.

   • View the summary of a specific resource and perform Start or Stop operation (based on the resource type) in the **Resource Summary** section.

   • View alerts associated with a resource in the **Alerts** section.
Accessing an OpenEdge Management Details page

This section describes the procedure to access an OpenEdge Management Details page.

To access an OpenEdge Management Details page:

1. Click Resources in the management console menu. All resources managed by your console appear in the grid frame.

2. Search, sort, or filter for the OpenEdge resource whose details page you want to access.

   Note: The OpenEdge resource categories predefined in the local container of your OpenEdge Management and OpenEdge Explorer console are AppServer Internet Adapter, AppServer, Database, Messengers, MSS DataServer, NameServer, ODBC DataServer, Oracle DataServer, SonicMQ Adapter, WebSpeed, and Web Services Adapter.

3. Click the Edit icon for the specific resource. The resource’s details page appears.

Starting or Stopping OpenEdge resources

You can start or stop a single or multiple OpenEdge resource(s) from the Resources panel in the grid frame, the Resource Summary section, or the resource details page.

To start or stop OpenEdge Resources from the Resources panel:

1. Click Resources in the management console menu. All resources managed by your console appear in the grid frame.

2. Select the check box for the OpenEdge resource(s) you want to start or stop.

   Note: You can start or stop OpenEdge resources depending on what their current status is.

3. From the Resources panel in the grid frame, click the Start brokers icon or the Stop brokers icon to start or stop a single or multiple OpenEdge broker instance(s).

4. Click the Refresh page icon on the resources panel to view the change in status of the OpenEdge resource(s) in the grid frame.
To start or stop an OpenEdge Resource from the Resource Summary section:

1. Click **Resources** in the management console menu. All resources managed by your console appear in the grid frame.

2. Select the OpenEdge resource you want to start or stop. The **Resource Summary** section displays the resource properties along with its current status. Notice that based on the current status of the resource, the **Start** or the **Stop** button is grayed out.

3. From the Resource Summary section, do one of the following:
   - If the status indicates **Not Running** or if the **Stop** button is grayed out, click the **Start** button to start the OpenEdge resource.
   - If the status indicates **Running** or **Active**, or if the **Start** button is grayed out, click the **Stop** button to stop the OpenEdge resource.

   The status of the OpenEdge resource automatically changes on the **Resource Summary** section depending on your action.

4. Click the **Refresh page** icon on the resources panel to view the change in the status of the OpenEdge resource in the grid frame.

To start or stop an OpenEdge Resource from the resource details page:

1. Click **Resources** in the management console menu. All resources managed by your console appear in the grid frame.

2. Search, sort, or filter for the OpenEdge resource whose details page you want to access.

3. Click the Edit icon for the specific resource you want to start or stop. The resource’s details page appears.

4. In the **Command and control** section of the details page, click **Control** or **Broker control** depending on the type of OpenEdge resource you access.

5. From the resource’s details page, depending on the status of the resource, do one of the following:
   - Click the **Start** button to start the OpenEdge resource. For example, to start an AppServer broker, click **Start AppServer** in the **AppServer control** page.
   - Click the **Stop** button to stop the OpenEdge resource. For example, to stop an AppServer broker, click **Start AppServer** in the **AppServer control** page.

   Notice that the status of the OpenEdge resource changes in the **Summary** section of the OpenEdge resource’s control page.

6. Click the **Resources** link on the breadcrumb trail to go back to the Resources grid frame.
Deleting OpenEdge Management resources

Note the following considerations before attempting to delete any resource:

- You cannot delete a remote resource when the container in which it resides is currently offline. The container must be back online before you can delete a remote resource of this kind.

- Before attempting to delete a resource, you must stop it.

- OpenEdge Management cannot recognize specific requests, including resource deletions, while an AdminServer warm start process is occurring. For more details about initiating an AdminServer warm start and its implications for OpenEdge Management functionality, see the "Effects of an AdminServer warm start on OpenEdge Management" section on page 58.

To delete a resource:

1. Click Resources in the management console menu. All resources managed by your console appear in the grid frame.

2. Search, sort, or filter for the OpenEdge resource you want to delete.

3. Click the Edit icon for the specific resource. The resource’s details page appears.

4. Verify that the resource you want to delete is stopped or disabled.

5. Click Delete. This action removes the configuration data stored in the ubroker.properties file.

6. Confirm the deletion when prompted.

The resource instance that you deleted no longer appears in the grid frame.
Effects of an AdminServer warm start on OpenEdge Management

An AdminServer warm start is a user-initiated process that allows you to manually edit the ubroker.properties file while the AdminServer is running. Performing this type of activity is reserved for making small, simple changes to an individual resource’s configuration properties stored in the ubroker.properties file.

To do this, you can use the Mergeprop utility. For more information, see the information about using the Mergeprop utility in OpenEdge Getting Started: Installation and Configuration.

Stages of a warm start

The general stages in an AdminServer warm start are:

1. An advanced user works with the Mergeprop utility to modify the ubroker.properties file, making minimal configuration property changes.

2. The user saves the changes.

3. The AdminServer loads the changes.

   OpenEdge Management cannot accept any other broker-related requests that users might try to initiate. This situation means that you, and other users logged in to OpenEdge Management at this time, might see as unavailable links that are normally available.

4. Complete OpenEdge Management functionality is restored when the AdminServer completes the warm start. This includes the availability of all temporarily disabled links.
Understanding OpenEdge server graphs

OpenEdge Management displays OpenEdge server data in a graphical format for:

- WebSpeed and AppServer resources on Performance View pages
- OpenEdge resource members on user-selected viewlets in collections

Graphs available on Performance View pages

OpenEdge resources that have defined monitoring plans can display certain data in graphical formats. Table 4 identifies various OpenEdge resource types, the data that can appear in individual graphs, and the performance data page on which the graphs appear.

Table 4: Performance pages and their graphical content

<table>
<thead>
<tr>
<th>For this OpenEdge resource type . . .</th>
<th>Data addressing each of these topics . . .</th>
<th>Appears as an individual graph on this page . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>WebSpeed brokers</td>
<td>• Broker Request Activity</td>
<td>Broker Performance View</td>
</tr>
<tr>
<td></td>
<td>• Broker Activity Status</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Client Connections</td>
<td></td>
</tr>
<tr>
<td>WebSpeed Agents</td>
<td>• Agents State</td>
<td>Agents Performance View</td>
</tr>
<tr>
<td></td>
<td>• Total Agents CPU</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Total Agents Memory</td>
<td></td>
</tr>
<tr>
<td>AppServer brokers</td>
<td>• Broker Requests</td>
<td>Broker Performance View</td>
</tr>
<tr>
<td></td>
<td>• Client Connections</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Last Run Procedures</td>
<td></td>
</tr>
<tr>
<td>AppServers</td>
<td>• Servers State</td>
<td>Servers Performance View</td>
</tr>
<tr>
<td></td>
<td>• Server pool summary</td>
<td></td>
</tr>
</tbody>
</table>

For an explanation of each graph’s content, see the performance view sections in Chapter 3, "Managing WebSpeed Transaction Server Data," and Chapter 4, "Managing AppServer Data."

Note: The production of graphs is CPU-intensive. If you are monitoring CPU usage, an alert may fire when the graph is generated. To avoid the firing of such an alert, increase the number of failed polls after which OpenEdge Management throws an alert.
Launching graph pinup pages

To launch a separate graph pinup page for any of the individual graphs identified in Table 4, select the binoculars icon, as shown in Figure 5, associated with that graph on its respective performance page.

![Figure 5: Binoculars icon](image)

As needed, you can change the displayed characteristics of the graph that appears in the pinup. See the “Changing OpenEdge pinup graphical views” section on page 63 for details.

Additional graph-related considerations

Depending on the browser in which you are viewing a graph, the graph type and its property settings, and the number of data points displayed, you can display pop-up content details from within the graph. Review the pop-up content to inspect resource activity in greater detail.

To pop up content from within a graph, place the mouse over regions of the graph.
Displaying OpenEdge viewlets on a Collection view

Collections allow you to define and organize OpenEdge resource details and to prominently display these details in OpenEdge Management. Specifically, you can define OpenEdge resource viewlets to display resource information in a graphical form on a collections page. In Table 4, the second column, titled “Data addressing each of these topics,” identifies some of the graphs that the OpenEdge viewlets support.

You can define viewlets for any OpenEdge resource that is a member of a collection.

To access and select OpenEdge resource viewlets for display on a collections page:

1. Click My Dashboard on the management console menu bar. The My Collections.Home:Default page appears in the detail frame:

2. If you are updating the My Collections.Home:Default page, go to Step 4. Otherwise, from the list frame, expand the collections category (My Collections or Shared Collections) that contains the collection page you want to update.

3. Click the collection. The collections page appears in the detail frame.
4. From the toolbar on the collections page, click View → Customize View → View Content. (The check mark in the drop-down menu list identifies the currently active view.)

The Edit My Collections page for the collection appears, as shown in the following excerpt:

For each OpenEdge server resource type defined for the collection, the Resource viewlets to show section displays the associated viewlet options.

Note: The Resource viewlets to show section also supports these AppServer viewlets that are not available on the AppServer Performance View page: AS Total Servers CPU, AS Broker Queued Requests (percent), and AS Broker Rejected Requests (percent). The NameServer-related viewlet provides access to the NameServer instance’s Details page; there are no graphs associated with NameServer resources.

5. Click the box associated with a viewlet option to select it.

6. Click Save. The main view of the collections page reappears with the selected viewlets. Use the scroll bar to view all items you defined, as shown in the following example:
Changing OpenEdge pinup graphical views

You can modify a particular graph by displaying it as a pinup graph. A *pinup graph* is a graph that appears in a separate window and whose appearance you can customize. For example, you can choose elements such as the graph’s size, style, and how often it refreshes.

To access the pinup graph to change the appearance of a graph:

1. Click the binoculars icon in the lower right of the graph whose view you want to modify. The pinup graph window opens, displaying the graph.
2. Drag the lower-right corner of the window. The page expands, as shown:

![Graph window with pinup view]

The data label at the top of the graph serves as the graph’s legend.

3. From the pinup you can, depending on the graph, customize the graph properties described in Table 5.

<table>
<thead>
<tr>
<th>Property</th>
<th>Options</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Graph Size</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graph Size</td>
<td>Very small</td>
<td>If you have a graph with small statistics, you can choose to have the pinup graph larger so you can better see its details.</td>
</tr>
<tr>
<td>Small</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Graph Style</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Line</td>
<td>hi/low</td>
<td>Depending on the kind of graph you are viewing in the pinup, you can change its style to another recognized style.</td>
</tr>
<tr>
<td>Column</td>
<td>Area</td>
<td></td>
</tr>
<tr>
<td>Area</td>
<td>Stacked Area</td>
<td></td>
</tr>
<tr>
<td>Stacked Area</td>
<td>Stacked Column</td>
<td></td>
</tr>
</tbody>
</table>
4. Click **Change Pinup** when you finish making your selections. The graph appears in the pinup with the new characteristics.

**Note:** You cannot save the pinup graph settings.

<table>
<thead>
<tr>
<th>Property</th>
<th>Options</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Graph Data Averaging</strong></td>
<td>Off</td>
<td>The default is <strong>Off</strong>. If you select <strong>On</strong>, data appears as a weighted average for the time period set for the <strong>Graph max time</strong> option.</td>
</tr>
<tr>
<td></td>
<td><strong>On</strong></td>
<td>Setting this option to <strong>On</strong> reduces the number of data points displayed.</td>
</tr>
<tr>
<td><strong>Graph Dimension</strong></td>
<td>2D</td>
<td>Changes the display from 2-dimensional to 3-dimensional.</td>
</tr>
<tr>
<td></td>
<td>3D</td>
<td></td>
</tr>
<tr>
<td><strong>Grid</strong></td>
<td>Off</td>
<td>The default is <strong>Off</strong>.</td>
</tr>
<tr>
<td></td>
<td><strong>On</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Graph max time</strong></td>
<td>A number of options, from 5 minutes to 2 days.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Controls how much time the graph spans. Note that this value does not affect how often or how much data is collected for graphing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>However, the ranges for the specific value options from which you can select are governed by the settings you define for the <strong>Graph cache</strong> option. For details, see the appropriate section in <em>OpenEdge Management and OpenEdge Explorer: Getting Started</em>.</td>
</tr>
<tr>
<td><strong>Graph start time</strong></td>
<td>Select the check box. Provide year/month/day/time start time settings.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Identifies the start date and time for the graph. The purpose of this start information is to help you drill deeper into the resource activity details recorded for a specific time frame.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To select this option, click in the check box on the side left of the field label. Select the year/month/day/time settings from the fields displayed on the right side of the field label.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To ensure a meaning graphing of data, review the <strong>Graph cache</strong> option and the <strong>Graph max time</strong> setting values as you determine the value for this start time setting.</td>
</tr>
<tr>
<td><strong>Refresh rate</strong></td>
<td>None</td>
<td>The refresh rate is the rate at which the resource is checked to see if there is more information to put in the graph.</td>
</tr>
<tr>
<td></td>
<td>15 seconds</td>
<td>The refresh rate should not be less than the polling rate for the resource. For example, if you set the refresh rate to 1 minute and the polling rate is at 5 minutes, you do not get new graph data every minute; you get it only at the same rate as the polling occurs.</td>
</tr>
</tbody>
</table>
Managing WebSpeed Transaction Server Data

This chapter presents OpenEdge Management features and functionality related to the WebSpeed Transaction Server, as described in the following sections:

- Overview
- Reviewing WebSpeed broker status
- Modifying WebSpeed control settings
- Accessing and reviewing WebSpeed-related log file data
- Using the WebSpeed log file viewers
- Examining WebSpeed-related Operational views
- Examining WebSpeed-related Informational views
Overview

OpenEdge Management supports a variety of tasks that you can perform to manage a Transaction Server, including:

- Reviewing your current operating status and associated details.
- Modifying broker-related control settings, such as starting and stopping a broker, and adding or trimming agents.
- Accessing and viewing broker- and agent-specific data collected through log file resource monitors.
- Monitoring and managing WebSpeed brokers using monitoring plans and rules.
- Generating rule threshold values for rules using the Configuration Advisor.
- Working with OpenEdge resource-related data that is available through broker- and agent-specific information and operational views. WebSpeed information views provide data in both text and graph formats.

You must have appropriate OpenEdge Management role authorization to perform several of these tasks. See the “Role authorization and OpenEdge Management tasks” section on page 46 for details.

You can also use OpenEdge Management to configure WebSpeed properties. For details, see OpenEdge Management and OpenEdge Explorer: Configuration.
Reviewing WebSpeed broker status

The **WebSpeed Status** section of the **WebSpeed** Details page summarizes current operational details about the WebSpeed broker. **Figure 6** shows an example of the **WebSpeed Status** section.

<table>
<thead>
<tr>
<th>WebSpeed Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
<td>NBA0PAULDXP2</td>
</tr>
<tr>
<td>Broker</td>
<td>ACTIVE</td>
</tr>
<tr>
<td>Operating mode</td>
<td>Stateless</td>
</tr>
<tr>
<td>Broker statistics available</td>
<td>True</td>
</tr>
<tr>
<td>Servers available</td>
<td>1</td>
</tr>
<tr>
<td>Should register with NameServer?</td>
<td>True</td>
</tr>
</tbody>
</table>

**Figure 6: WebSpeed Status section**

**Table 6** describes each of the WebSpeed broker status details.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
<td>The host machine’s name.</td>
</tr>
<tr>
<td>Broker</td>
<td>The running status of the broker. Possible values are:</td>
</tr>
<tr>
<td></td>
<td>• ACTIVE — The broker is currently running.</td>
</tr>
<tr>
<td></td>
<td>• Not Running — The broker is not currently running.</td>
</tr>
<tr>
<td></td>
<td>The broker can also report <strong>Starting</strong> and <strong>Shutting Down</strong> values.</td>
</tr>
<tr>
<td></td>
<td>however, depending on the speed of the machine on which your management</td>
</tr>
<tr>
<td></td>
<td>console is running, you may not see these intermediary states.</td>
</tr>
<tr>
<td>Operating mode</td>
<td>The operating mode of the broker. This mode determines how client requests</td>
</tr>
<tr>
<td></td>
<td>are dispatched to individual agent processes running on the WebSpeed</td>
</tr>
<tr>
<td></td>
<td>instance.</td>
</tr>
<tr>
<td>Broker statistics available</td>
<td>The status of the broker as it relates to data collection. The possible</td>
</tr>
<tr>
<td></td>
<td>states are <strong>True</strong> or <strong>False</strong>. See the &quot;Data collection details&quot; section on page 73 for more information.</td>
</tr>
<tr>
<td>Servers available</td>
<td>The number of servers running and available to fulfill a connection request</td>
</tr>
<tr>
<td></td>
<td>from a client through this broker when the broker’s status is <strong>ACTIVE</strong>.</td>
</tr>
<tr>
<td></td>
<td>This value can change frequently, reporting the real-time changes in</td>
</tr>
<tr>
<td>Should register</td>
<td>The status of <strong>True</strong> or <strong>False</strong> to indicate whether the broker</td>
</tr>
<tr>
<td>with NameServer</td>
<td>resource is registered with a NameServer.</td>
</tr>
</tbody>
</table>

See the "Data collection details" section on page 73 for more information.
These points relate to the fields listed in the first column in Table 6:

- Broker-related changes that you can make, using either the Broker Control or Agent Pool Control options in the Command and control section of the WebSpeed Details page, can affect the broker and agent values that appear in the status section.

- The values that appear in the WebSpeed Status section are obtained from either the ubroker.properties file or the current, real-time status of the broker (if it is running).
Modifying WebSpeed control settings

The Command and control section of the WebSpeed Details page allows you to:

- Start and stop a WebSpeed broker, and change its associated property settings
- Add or trim the pool of available agents associated with the broker
- Obtain and review WebSpeed-related data collected through broker- and agent-specific log files for which you can set up resource monitors
- Monitor and manage WebSpeed brokers using monitoring plans and rules, including the option to use Configuration Advisor rule-recommended threshold settings
- Configure the WebSpeed server’s properties

Figure 7 shows an example of the Command and control section of the WebSpeed Details page.

Figure 7: Command and control section

The information in this section presents functional descriptions and procedural details related to the WebSpeed Control and Agent Pool Control pages.

Table 7 identifies where you can find information about other functionality related to the Command and control section.

Table 7: Additional WebSpeed information

<table>
<thead>
<tr>
<th>For WebSpeed-related details about . . .</th>
<th>See . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broker and agent pool log file monitors and viewers</td>
<td>The “Accessing and reviewing WebSpeed-related log file data” section on page 83</td>
</tr>
<tr>
<td>Broker monitoring plans and rules</td>
<td>Chapter 11, “Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters”</td>
</tr>
<tr>
<td>Broker rule sets</td>
<td>The “Customizing a WebSpeed broker log file monitor” section on page 86</td>
</tr>
<tr>
<td>Configuration</td>
<td>OpenEdge Management and OpenEdge Explorer: Configuration</td>
</tr>
</tbody>
</table>
WebSpeed Control page content

The WebSpeed Control page summarizes details about a specific WebSpeed broker resource. From this page, you can start and stop a WebSpeed broker, and change some broker-related properties, as needed.

Figure 8 shows an example of the WebSpeed Control page.

![WebSpeed Control page](image)

Note: The values associated with the Collect Statistics property and the Broker statistics available field are interdependent. See the “Data collection details” section on page 73 for details.

The WebSpeed Control page consists of two distinct sections:

- Broker summary
- Properties

Broker summary

The Broker summary section displays read-only values for these fields: the broker name, its host machine’s name, associated port number and process identification number (PID), the broker’s current status, operating mode, and whether the broker is currently set to collect broker-related statistical data.

Note the following additional details about these fields:

- The Broker name, Host (machine name), Port (number), and Operating mode fields display values as they are defined in the ubroker.properties file.

- The Broker PID and Status fields reflect real-time values based on the broker’s current status. The Broker PID is also a link to more broker process details. See the “Viewing broker process details” section on page 74 for more details.

- The Broker statistics available field also reflects a current, real-time value. However, the value displayed in this field depends on additional factors. See the “Data collection details” section on page 73 for more details.
Properties

The Properties section displays the status of two user-defined, broker-related properties, Enabled and Collect Statistics:

- The Enabled option indicates that this broker resource recognizes a monitoring plan and its associated rules when the broker resource is active.

  During the discovery process, all WebSpeed brokers that OpenEdge Management discovers and lists in the list frame under the WebSpeed category are enabled by default. Once a broker is enabled, OpenEdge Management uses the OpenEdge Management-supplied default values to establish a monitoring plan and rules. (You can customize the plan and rules at any time.)

- The Collect Statistics option enables data collection to occur in the WebSpeed broker. OpenEdge Management uses this data to identify the broker’s performance. If you do not select the Collect Statistics option (that is, True status) for a specific broker, OpenEdge Management displays only non-statistical data such as Status and PID (pid number) on the various WebSpeed broker pages. Polled rules are not evaluated and data is not trended.

- The Collect Statistics value plays a central role in data collection. See the “Data collection details” section on page 73 for more information.

A check mark indicates that the individual property is set.

Note: To set the Broker statistics available option to a True status for a specific broker, you must enable the Collect Statistics option. See the procedure in the “Data collection details” section on page 73.
Changing WebSpeed broker controls

You can change WebSpeed broker controls.

To change the WebSpeed broker's property settings:

1. From the grid frame for Resources, click the Edit icon to display the details page for the WebSpeed broker you want to start.

2. Click Broker Control in the Command and control section to display the WebSpeed Control page, as shown:

You can make the following changes:

- To change the current setting of the Enabled property, click Edit. Then select or deselect the Enabled property to add or remove the check mark. You must also restart the WebSpeed broker so that the property change is recognized.

  Note: A check mark appears to indicate that the Enabled property is set. To clear this option, click the check mark in the box associated with the option. The check mark is deleted to indicate that the option is no longer set.

- To change the current setting of the Broker statistics available property displayed in the Broker Summary section of the WebSpeed Control page, see the “Data collection details” section on page 73.

- To exit this page without changing any values and return to the WebSpeed Details page, click either Back in the browser, or the WebSpeed broker instance link on the breadcrumb trail.

You can also change the WebSpeed broker controls by starting or stopping the broker instance. To start or stop a WebSpeed broker instance, see the “Starting or Stopping OpenEdge resources” section on page 55.
Data collection details

Data collection ensures that broker-related performance statistics can be trended to the OpenEdge Management Trend Database. Options and conditions available on the WebSpeed Control page and the WebSpeed broker resource monitoring plan must be fulfilled to successfully implement data collection.

On the WebSpeed Control page, these conditions include:

- Selecting the **Collect Statistics** check box.
- Starting, or stopping and restarting the WebSpeed broker. You must explicitly perform this step on the WebSpeed Control page to effect this change.
- Verifying that the value **True** appears in the **Broker statistics available** field. (OpenEdge Management automatically updates this field when it detects that the Collect Statistics option is enabled after you have started, or stopped and restarted, the WebSpeed broker.)

In the WebSpeed broker monitoring plan definition, you must also check the **Trend Performance Data** option.

**Note:** You are not required to use trending with the data collection activity. However, without the Trend Performance Data option selected, you cannot trend data. Data trended to the OpenEdge Management Trend Database is required for WebSpeed-related rule evaluation, graphical displays, and report generation.

For information about the Trend Performance Data option and monitoring plans for WebSpeed broker resources, see the same information for AppServer brokers in Chapter 7, “Managing AppServer Internet Adapter Data.”

**Note:** Using data collection might cause the Web Speed broker to exhibit some level of performance degradation, memory degradation, or both.
To set the options to perform data collection in a WebSpeed broker:

1. Review the current setting of the **Collect Statistics** field in the Properties section of the WebSpeed Control page; a check mark indicates that the property is set.

   If the **Collect Statistics** field is not checked, click **Edit**. Select the **Collect Statistics** option. Click **Save**.

2. Stop and restart the WebSpeed broker you want to update.

---

**Note:** The Collect Statistics field can be modified dynamically, provided you have selected the Enable dynamic property updates option in the WebSpeed broker’s configuration properties. For details, see OpenEdge Management and OpenEdge Explorer: Configuration.

---

The Broker statistics available field in the Broker summary section will display **True** if the broker restarted successfully. The **True** value indicates that you have successfully set data collection and that broker statistical data is now available to be stored in the OpenEdge Management Trend Database.

---

**Viewing broker process details**

You can also access real-time details and statistics that provide you with snapshot information about an individual broker at the point you access this information from the WebSpeed Control page. Review this information to help you assess a broker’s performance.

---

**To access broker processing details:**

1. From the Resources grid, click the WebSpeed broker to view the details page for the WebSpeed broker instance whose processing details you want to access.

2. Click Broker Control in the Command and control section to display the WebSpeed Control page, as shown:
3. Click the unique PID number associated with the Broker PID field to display a Broker PID page. This page contains summary and real-time statistics about the broker, as shown:

![Broker PID page](image)

The two sections that comprise the Broker PID page present relevant information about the WebSpeed broker and its current operations:

- The Process summary section identifies the Process name and Process start time. User id and Group id values appear with UNIX-based data. The Parent pid indicates the identifier number associated with the process that spawned this current process.

- The Process statistics section presents details about the broker’s real-time operational status. Values presented without parentheses identify that the processing time determined since the last scheduled polling interval has occurred. Values presented within parentheses have been calculated based on information obtained since the start of the process. Table 8 identifies and describes these attributes.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident size</td>
<td>The physical size of the process as defined by the host system.</td>
</tr>
<tr>
<td>Virtual size</td>
<td>The virtual size of the process as defined by the host system.</td>
</tr>
<tr>
<td>CPU</td>
<td>The percentage of time spent using the CPU in either the user or kernel mode since the last scheduled poll.</td>
</tr>
</tbody>
</table>

Table 8: Process statistics operational data (1 of 2)
Agent Pool Control page content

Figure 9 displays the Agent Pool Control page. The page shows data relevant to your current WebSpeed workload and allows you to add or reduce the number of WebSpeed agents currently running.

Use this page to add agents when agent requests are high. You can add agents to the maximum number of agents that your license recognizes. Also, use this page to reduce the agent count during a lag in agent requests. Using the trim feature, you can reduce agents down to the Minimum agents property setting.

![Agent Pool Control page example](image)

**Table 8: Process statistics operational data (2 of 2)**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighted CPU</td>
<td>The percentage of time spent using the CPU in either the user or kernel mode since the last scheduled poll divided by the number of CPU processors on the system. This value appears only when there is more than one CPU process on the system where the process is running.</td>
</tr>
<tr>
<td>User time</td>
<td>The amount of CPU time spent in the user mode since the last scheduled poll.</td>
</tr>
<tr>
<td>Kernel time</td>
<td>The amount of CPU time spent in the kernel mode since the last scheduled poll.</td>
</tr>
<tr>
<td>Process time</td>
<td>The sum of the values that appear in the User time and Kernel time fields.</td>
</tr>
</tbody>
</table>
The **Agent Pool Control** page comprises these sections:

- An **Add** or **Trim** selection that you use to specify which activity you want to perform. When you initiate a manual trim request, OpenEdge Management determines which agents to remove. See the "Adding or trimming agents" section on page 80 for detailed steps.

- The following three distinct, agent-related data summary tables that allow you to review relevant agent-pool specific data quickly:
  - **Agent pool initial configuration**
  - **Agents state**
  - **Agent pool summary**

  The changes that you make through add/trim activities can affect the data that appears in these summary tables. The **Agent pool summary** also allows you to kill a specific agent process. See the “Killing a WebSpeed agent process” section on page 81 for the detailed steps.

  See the "Adding or trimming agents" section on page 80 for details about how to add or trim agents.

**Agent pool initial configuration**

The **Agent pool initial configuration** section identifies WebSpeed broker configuration properties set in the **ubroker.properties** file (which are also reflected in the configuration settings within OpenEdge Management). These values appear as read-only.

*Table 9* identifies and describes each field that displays in the **Agent pool initial configuration** section.
Chapter 3: Managing WebSpeed Transaction Server Data

Table 9: Agent pool initial configuration field definitions

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial number of agents to start</td>
<td>The value OpenEdge Management references when the WebSpeed broker starts agents. Depending on your license agreement and your strategy for setting up your configuration information, this value may be the same as the value displayed in the Licensed agents field.</td>
</tr>
<tr>
<td>Minimum agents</td>
<td>The minimum number of agents that must be simultaneously running before the WebSpeed broker will start additional agents. The broker strives to maintain this specified minimum. If at any time the number of agents falls below the specified minimum, the broker will automatically start the additional agents necessary to maintain this minimum. If you set a trim value that would require OpenEdge Management to trim the number of agents below the number specified for this field, OpenEdge Management displays a message.</td>
</tr>
<tr>
<td>Maximum agents</td>
<td>The maximum number of WebSpeed processes that can be running simultaneously. OpenEdge Management will not fulfill add requests you initiate that exceed this specified maximum. OpenEdge Management will display a message to state this condition so that you can reconsider your request and, if necessary, initiate a new request.</td>
</tr>
</tbody>
</table>

Agents state

The Agents state section provides a snapshot of the total number of agents currently associated with a specific agent state. The details related to agents and the number of agents reported reflect real-time data. This data can fluctuate due to changes in the agents’ workflow and changes you initiate using the add and trim feature.

Table 10 describes each field presented in the Agents state section.

Table 10: Agents state field definitions

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active agents</td>
<td>The name of agents currently running</td>
</tr>
<tr>
<td>Busy agents</td>
<td>The name of agents currently serving ABL client requests</td>
</tr>
<tr>
<td>Locked agents</td>
<td>The name of agents currently servicing a bound connection</td>
</tr>
<tr>
<td>Available agents</td>
<td>The name of agents currently available to handle broker requests</td>
</tr>
</tbody>
</table>
Agent pool summary section and the Kill process option

The Agent pool summary section provides:

- Detailed data about each individual agent in the WebSpeed pool associated with a specific WebSpeed broker. Table 11 identifies and describes each field displayed in the Agent pool summary section.

- Access to:
  - More data about a specific agent
  - A control to terminate, or kill, the agent process

Use the PID field to access these features.

Table 11 provides more information about PID.

### Table 11: Agent pool summary field definitions

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PID</td>
<td>The process identifier for this agent. Click on the specific PID number to display a detail page that provides specific information about this agent process and, as necessary, kill the process. See the &quot;Killing a WebSpeed agent process&quot; section on page 81 for more information.</td>
</tr>
<tr>
<td>State</td>
<td>The current execution state of the agent process.</td>
</tr>
<tr>
<td>Port</td>
<td>The TCP/IP port number that the agent process uses.</td>
</tr>
<tr>
<td>nRq (Number of Requests)</td>
<td>The number of messages sent to the agent process.</td>
</tr>
<tr>
<td>nRcvd</td>
<td>The number of messages received by the agent process.</td>
</tr>
<tr>
<td>nSent</td>
<td>The number of requests sent by the agent process.</td>
</tr>
<tr>
<td>CPU Use</td>
<td>The percentage of CPU user and system time consumed by a process.</td>
</tr>
<tr>
<td>Memory Use</td>
<td>The amount of virtual memory (in Kbytes) consumed by a process.</td>
</tr>
<tr>
<td>Started</td>
<td>The time stamp that indicates when the agent process started. If the broker is restarted for any reason, the PID and the Last Change value might change.</td>
</tr>
<tr>
<td>Last Change</td>
<td>The time stamp that indicates when the agent process last changed execution state.</td>
</tr>
</tbody>
</table>
Adding or trimming agents

This section describes the steps you perform to add and trim agents.

To initiate a WebSpeed agent add and trim request:

1. From the grid frame for Resources, click the Edit icon to display the details page for the WebSpeed broker for which you want to initiate an agent add and trim request.

2. Click Agent Pool Control in the Command and control section to display the Agent Pool Control page, as shown:

   ![Agent Pool Control screenshot]

   - From the drop-down list box, select Add or Trim.

3. In the agent(s) field, enter the number of agents you want to add or trim. The value you enter must be a positive integer.

   When you initiate an add or trim request, OpenEdge Management consults the following two sets of initial configuration details to determine if and how it can honor either request:
   - The number of agents for which you are licensed
   - The broker property configuration settings stored in the ubroker.properties file

   See the "Agent pool initial configuration" section on page 77 for information about the configuration details.
5. Click **Submit**. Depending on the changes you make and OpenEdge Management’s ability to implement them, you might notice updates to the numeric values that appear in the **Agents state** table. See the “**Agents state**” section on page 78 for more information.

**Note:** Any time you either add or trim WebSpeed agents, it is recommended that you refresh the management console to ensure that you are not viewing stale data.

### Killing a WebSpeed agent process

You might want to manually terminate an agent process under these two circumstances:

- An agent process hangs.
- You determine from the available data that an agent process is a runaway process.

The specific **PID** on the **Agent pool summary** section of the **Agent Pool Control** page allows you to access the necessary page to kill the offending agent’s process.

When either of the previously listed circumstances exists and you want to manually terminate an agent process, use this command:

```
kill -9
```

**Caution:** An agent (or server) process that has database locks can cause a database crash when you kill the process using the `kill -9` command. Therefore, use the command only as a last resort.

The description of the signal for the kill process is as follows:

- **Signal Name** — SIGKILL
- **Signal Number** — 9
- **Signal Description** — Kill program

Note that OpenEdge Management references the specific **PID** and its associated date and time start details to be sure of a process’ identity before it attempts to kill a process.

You can also kill an AppServer process. For details, see the “**Killing an AppServer process**” section on page 112.
To initiate a kill process:

1. Click the PID associated with the agent process you want to terminate. The specific WebSpeed Broker PID page appears, as shown:

![WebSpeed Broker PID page]

Note that the two sections on this page present relevant summary information about this WebSpeed agent and its current operational status. See the “Viewing broker process details” section on page 74 for details about this data.

2. Click **Kill** to terminate this process. (Alternatively, you can click **Cancel** at the top of the page to exit the page without terminating the process.)

OpenEdge Management will prompt you once again to verify you want to terminate this process. Click **OK**.

A final status page appears that identifies the status of your kill request and displays one of the following messages:

- **Process xxxx has been terminated** — This message indicates that the process was successfully killed. The PID number previously associated with this process is now available for the operating system to reassign.

- **Process xxxx cannot be killed at this time** — This message indicates that the process could not be killed. In very rare instances, it is possible that you will not be successful in an attempt to kill a process. You can retry the kill process procedure; however, it is possible that the process will persist for a number of unknown reasons.

- **Process xxxx has been reused** — OpenEdge Management has determined that the process PID number and associated time and date stamp do not match the values that the operating system has stored for this same process. Consequently, when you click **Kill**, the process cannot be destroyed.
Accessing and reviewing WebSpeed-related log file data

OpenEdge Management supports monitoring log files and their associated viewers for these WebSpeed resources:

- An individual WebSpeed broker
- The agents associated with the broker

Log files can store a tremendous amount of data. Therefore, monitoring and analyzing data collected within these files might help you to better determine performance expectations and examine trends related to brokers and agents.

This section presents information related to both types of WebSpeed log file monitors. However, only the procedures specific to a WebSpeed broker log file monitor and its associated viewer are presented. These same procedures will work with a WebSpeed agent log file monitor. For more general information about OpenEdge Management log file monitor features and functionality, see OpenEdge Management: Resource Monitoring.

**Note:** Log file monitors are not available for either remote WebSpeed brokers or their associated agents.

Getting started with log files for WebSpeed resources

For each local WebSpeed broker that OpenEdge Management discovers, OpenEdge Management supports the monitoring of its two associated log file monitors. OpenEdge Management provides a log file resource monitor for the WebSpeed broker itself and another for its associated agents. Each of these log file monitors has its own log file monitoring capabilities.

WebSpeed log file resource monitors are not enabled until the WebSpeed broker for which the resource monitors were created is started. When a log file monitor first starts monitoring either a WebSpeed broker or agents, it always starts at the end of the log file.

Naming conventions

OpenEdge Management prepends the broker’s name to the name of the broker and agent log file monitors and viewers. For a WebSpeed broker instance named *wsbroker1* and the container named *vesta*, OpenEdge Management generates the following log file monitor and associated viewer names:

- **Broker-related log file names** — Displays *vesta.wsbroker1BrokerLogFileMonitor* and *vesta.wsbroker1 WebSpeed Broker Log File Contents*.

- **Agent-related log file names** — Displays *vesta.wsbroker1AgentLogFileMonitor* and *vesta.wsbroker1 WebSpeed Server Log File Contents*.

You cannot change these names.
Characteristics of WebSpeed resource log file monitors

Data that you can capture and view using the WebSpeed resources log file monitors and viewers helps you to:

- Ensure the integrity of these log files by monitoring files for errors and allowing you to define actions that trigger when errors occur.

- Use predefined WebSpeed-related search criteria, or create your own, to run against the data in these log files. OpenEdge Management predefines search criteria to support the broker and agent log file monitors.

You can create and maintain the search criteria for each of the WebSpeed resources in two locations:

- At the WebSpeed resource local file monitor instance level. The search text and type cannot be shared at this level. See the “Customizing a WebSpeed broker log file monitor” section on page 86 for details.

- At the OpenEdge Management Component Library level under the appropriate WebSpeed subcategory. The search text and type can be shared at this level. See the “Working with rule sets” section on page 256 for details.

Specifically, the predefined search criteria provide:

- Detailed data about the recorded operations of a WebSpeed broker or agents

- A means for extracting the detailed data

WebSpeed log file monitor default values

Once a WebSpeed broker is enabled, OpenEdge Management creates log file monitors for any discovered brokers and their associated agents using several default values. You can modify only the default description. However, you have several options regarding the Search Criteria you can use for the log file monitor. See the “Customizing a WebSpeed broker log file monitor” section on page 86 for details.

The default values are as follows:

- The WebSpeed default log file monitor is disabled until the agent is first started.

- The Bookmark is set to Last Line, and it is unique.

- The On First Poll property is set to Search From End.

For detailed information about the Bookmark feature and the On First Poll property as they relate to log file monitors in general, see OpenEdge Management: Resource Monitoring.

File Resource Defaults

OpenEdge Management also supports a polling interval default value for the WebSpeed broker log file monitor and the WebSpeed agent log file monitor.
To display or update a polling interval default value:


You can revert back to the original OpenEdge Management-supplied default value set for the Polling Interval field at any time by clicking Restore Defaults.

Reviewing predefined log file monitor search criteria

Each log file provides predefined search criteria that address common WebSpeed broker- or agents-related events. You can use these searches as defined, or you can copy and customize them. Review the predefined search criteria before you customize a WebSpeed log file monitor.

Note: It is recommended that you not edit or delete the predefined criteria.

To review predefined log file monitor search criteria:

1. Select Library from the menu bar.

2. Click the plus (+) icon next to Search Criteria in the list frame to expand the category.

3. Click either WebSpeed Broker or WebSpeed Server in the list frame. A list of predefined search criteria related to the category that you selected appears in the detail frame. For example, the following screen shows the list of the WebSpeed Server default search criteria:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatal Memory Error</td>
<td>Catches the following error: Fatal memory error.</td>
</tr>
<tr>
<td>Fatal Transport Failure</td>
<td>Catches the following error: Fatal transport failure (error_code).</td>
</tr>
<tr>
<td>Insufficient Stack Space</td>
<td>Catches the following error: Insufficient stack space. Increase the startup parameter.</td>
</tr>
<tr>
<td>Transport Resources Unavailable</td>
<td>Catches the following error: Transport resources unavailable.</td>
</tr>
<tr>
<td>Unexpected Transport Error</td>
<td>Catches the following error: Unexpected transport error (error_code).</td>
</tr>
<tr>
<td>Unknown Transport Error</td>
<td>Catches the following error: Unknown transport error (error_code).</td>
</tr>
</tbody>
</table>

Note: You can also create your own search criteria to address a particular WebSpeed error for which you want to monitor a WebSpeed broker or agent. See the “Customizing a WebSpeed broker log file monitor” section on page 86 for details.
Customizing a WebSpeed broker log file monitor

You can customize a WebSpeed broker log file monitor (or a WebSpeed agent log file monitor).

To customize a WebSpeed log file monitor:

1. From the grid frame for Resources, click the Edit icon to display the details page for the WebSpeed broker whose log file monitor you want to customize.

2. Click Log File Monitor of Broker on the WebSpeed details page.

   The log file monitor summary monitoring page for the WebSpeed broker you selected appears:

3. Customize or view the contents of a WebSpeed broker log file monitor as follows:
   - Click Add Plan to add an existing monitoring plan to this resource monitor.
   - Click Edit at the top of the page to change the description of the log file monitor.
   - Click Log File Viewer at the top of the page to view the contents of the log file monitor.

Note: OpenEdge Management prevents the assignment of schedules that share days or times that overlap. For example, if you have a Default_Schedule set up for a resource monitor, you cannot set up an additional plan because the Default_Schedule is defined for 7 days a week, 24 hours a day. You must modify or remove the Default_Schedule to set up additional plans.

4. To add individual rules, click Edit within the Monitoring plans section to display the edit page for the log file monitor.
5. Click **Add Rule** under the **Rules selected for this plan** section of the broker monitoring plan page. You can add a rule that is already defined and/or create a new rule.

6. To use a WebSpeed broker rule already defined in the library:
   a. Select **WebSpeed Broker** from the drop-down list associated with the **Choose Criteria Category**.
   b. Select the appropriate value from the drop-down list associated with the **Choose Search Criteria**.

7. To create a new WebSpeed broker rule:
   a. Click **Create Criterion** to display the **Create Search Criterion** page.
   b. Enter values in the required fields: **Name** (identifies the name of the search criteria you are creating) and **Search Text** (identifies the information you are looking for in the log).
   c. Select the search types: **Literal Search** or **Regular Expression**.
   d. Choose whether to use an existing category or use a new category for the rule. Then select the **WebSpeed Broker** category.
   e. Click **Save**. The **Create Log File Rule** page reappears.

    The values you defined and selected to create a rule on the **Create Search Criterion** page are now available on the **Create Log File Rule** page. The **Choose Search Category** drop-down list displays the name you entered in the **Name** field on the **Create Search Criterion** page. The **Choose Criteria Category** drop-down list displays the category in which you elected to store the new rule.

8. Select the appropriate values from the **Severity** and **On Alert Action Perform** drop-down lists to complete the alert severity and action definition that you want to associate with this rule.

9. Click **Save**.

10. To add another individual rule, repeat Step 5 through Step 9.

11. Click **Select Rule Sets** to create a new log file rule or choose from existing rule sets to add to the monitoring plan.

12. Click **Save**.
13. Click the WebSpeed broker instance’s link on the breadcrumb trail to display the broker’s detail page again.

14. Click Log File Monitor of Broker again to view the new rules updated in the Rules Summary.

For more information about editing search criteria for rules, see the appropriate sections of OpenEdge Management: Resource Monitoring.

**Note:** You can copy the default WebSpeed log file rule set, but you cannot delete it.
Using the WebSpeed log file viewers

To view the contents of each WebSpeed log file, access the viewer associated with each individual log file.

The log file viewer allows you to examine the contents of a WebSpeed-related log file through an HTML interface. You can access these log file viewers from two locations:

- Click the link in the Command and control section of the WebSpeed Details page. Click Log File Viewer of Broker to display the broker’s file contents, or click Log File Viewer of Agents to display the agents’ file contents.

- Click the Log File Viewer button that appears at the top of the log file monitor summary monitoring page.

Figure 10 provides an example of the WebSpeed broker log file viewer, which is showing the contents of a WebSpeed broker log file.

![WebSpeed broker log file viewer example](image)

The following information helps you to use the WebSpeed log file viewer:

- Use the Show field to control how many WebSpeed log file entries appear at one time. The number entered into the Show field must not be less than 10.

- Use the Overlap field to control how many entries are repeated from screen to screen.

  Note: The value in the Overlap field must not be more than the number in the Show field minus one. For example, if you show 30 entries, you can overlap only 29 or fewer of them.

- Click Reload after changing the values in either the Show field or the Overlap field. Note that OpenEdge Management will prompt you to click Reload. The warning message that reads changed, reload needed appears in the Log status field in the Log file summary section of the page. If you do not reload, the viewer displays the previous values.
Click **Go To** to control which numbered entry in the log file the viewer begins its display with. For example, a value of 10 entered into the **Go To** field will begin the display from the tenth log file entry.

**Note:** You must click **Go To** after entering a value in the **Go To** field, or the viewer will not update its display.

- The default display of entries is in ascending order; choose **Descending** to change the display. Note that the **Show** field dictates the number of entries shown, whether they display in ascending or descending order.
- Click **First** to display the first \(x\) entries, where \(x\) is the value in the **Show** field.
- Click **Prior** to display the previous \(x\) entries, where \(x\) is the value in the **Show** field.
- Click **Next** to display the next \(x\) entries, where \(x\) is the value in the **Show** field.
- Click **Last** to display the last \(x\) entries, where \(x\) is the value in the **Show** field.
- To view additional log file entries without changing your current starting log file entry, leave the **Go To** field blank, change the value in the **Show** field, and click **Reload**.

### Refreshing log file data

Periodically refresh log file data. Select the **Refresh** page icon from the toolbar for either the list or detail frame to repaint an existing page. You can also set a default value that OpenEdge Management uses to automatically refresh the management console.

To set a default value that OpenEdge Management uses to automatically refresh the management console, select **Options → User Preferences**. Click the **Currently** dropdown list, and select the refresh value.

Refresh data to avoid the following situations:

- OpenEdge Management considers a viewer that has been inactive for more than four hours stale. Once a viewer becomes stale, OpenEdge Management releases ninety-five percent of any memory being held. If you try to use a stale viewer, OpenEdge Management automatically reloads the file. Because additional resource activity might have occurred during the viewer’s inactivity, the reloaded log file view might not match the previous log file view of that resource.

- OpenEdge Management considers a viewer that has been inactive for forty-eight hours dead. Once a viewer dies, OpenEdge Management releases all of its memory. To return to the log file displayed in a dead view, you need to renavigate to it, even if you pinned up the view or saved a link to it before the viewer died.
Examining WebSpeed-related Operational views

The WebSpeed Details page provides an Operational views section that allows you to access and review data related to the performance of:

- A specific WebSpeed broker
- A pool of agents associated with a specific broker

Data for both the WebSpeed broker and the broker's agent pool can appear in text and graph formats.

**Note:** The graphs associated with the WebSpeed Operational views appear only when the Broker statistics available field on the WebSpeed Control page displays a True status. See the “Data collection details” section on page 73 for details.

Figure 11 shows the Operational views section of the WebSpeed Details page, which also includes a link to status information.

![Operational views section](image)

**Figure 11:** WebSpeed Operational views section

The following sections describe how to access and interpret each of the performance views.

### Accessing and reviewing the Broker Performance View

The WebSpeed Operational views section allows you to review information about the WebSpeed broker’s performance and the state of the broker’s associated agents. Review this data frequently, as it will help you make informed decisions about your use of the broker and agent pool controls.

**To display and review this information:**

1. From the grid frame for Resources, click the Edit icon to display the details page for the WebSpeed broker you want to review.

2. Click Broker Performance View in the Operational views section. OpenEdge Management displays the WebSpeed Broker Performance View page, which comprises data summary sections and graphs.
Data summary

The summarized, read-only text data on this page consists of three sections:

- **Broker Requests** — Details about the broker’s connection workload as identified in Table 12.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed</td>
<td>Number of broker requests fulfilled</td>
</tr>
<tr>
<td>Queued</td>
<td>Number of broker requests to be processed</td>
</tr>
<tr>
<td>Rejected</td>
<td>Number of broker requests that could not be processed</td>
</tr>
<tr>
<td>Average Busy Time (ms)</td>
<td>Average amount of time that the broker is busy servicing requests (expressed in milliseconds)</td>
</tr>
<tr>
<td>Average Locked Time (ms)</td>
<td>Average amount of time that the broker is locked (expressed in milliseconds)</td>
</tr>
</tbody>
</table>

- **Client Connections** — Identifies the number of client connections that the broker is currently handling and the total number of client connections this broker has processed since the broker started.

- **Last Run Procedures** — Lists the most recent procedures that were run.

Graphs presentation

The graphs presentation section of the Broker Performance View contains three graphs: **WS Broker Request**, **WS Broker Activity Status**, and **Client Connections**. If conditions for data collection are set and the Trend option is selected (in the monitoring plan), the graphically displayed data appears and complements the summarized text data that appears on the WebSpeed Broker Performance View page. See the “Data collection details” section on page 73 for details.

One display format for these graphs, as shown on the Broker Performance View page, is a line graph. This format measures how a particular broker-related activity has changed over a period of time.
Table 13 briefly describes each of these graphs.

### Table 13: WebSpeed Broker performance-related graphs

<table>
<thead>
<tr>
<th>Graph name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WS Broker Request Activity</td>
<td>Displays two lines of broker-related performance data over a specified time period. The blue line identifies the number of requests that the broker has completed. The red line identifies the number of requests that this same broker has received in this time period.</td>
</tr>
<tr>
<td>WS Broker Activity Status</td>
<td>Displays two lines of broker-related performance data over a specified time period. The blue line identifies the percent of requests that the broker has rejected, up to and including the last poll OpenEdge Management has completed for this broker resource. The red line identifies the percent of requests in the queue waiting for the broker, up to and including the last poll completed.</td>
</tr>
<tr>
<td>Client Connections</td>
<td>Displays two lines of client connections related to this broker over a specified time period. The blue line identifies the client total number of connections requested. The red line identifies the number of clients currently connected to this broker. <strong>Note:</strong> It is possible for this graph to accurately show that the number of current connections is higher than the total number of connections. The <strong>Clients Total</strong> reflects only new connections over the specified time period. In contrast, the <strong>Clients Current</strong> reflects all current connections, both newly connected and those that might still be connected from a previous polling period, in place when the graph is displayed.</td>
</tr>
</tbody>
</table>

See the “Changing OpenEdge pinup graphical views” section on page 63 for details about changing the data appearance of graphs.
Chapter 3: Managing WebSpeed Transaction Server Data

Accessing and reviewing the Agents Performance View

The WebSpeed Operational views allow you to display information about agents’ status.

To display and review agents’ status information:

1. From the grid frame for Resources, click the Edit icon to display the details page for the WebSpeed broker whose agents’ status you want to review.

2. Click Agents Performance View in the Operational views section to display the WebSpeed Agents Performance View page, as shown:

Data summary

The summarized read-only text data on this page is comprised of two sections:

- **Agents state** — Displays the four possible states of the agents that are currently associated with this WebSpeed broker: Active, Busy, Locked, and Available. See Table 10 for a definition of each of these states.

- **Agent pool summary** — Displays detailed data about each individual agent in the WebSpeed agent pool that is associated with a specific WebSpeed broker. See Table 11 for a description of each field that appears in the Agent pool summary section. You also have access to additional data about a specific agent and a control that allows you to kill a process. See the “Killing a WebSpeed agent process” section on page 81 for detailed steps.
Graphs presentation

The graphs presentation section of the Agents Performance View contains three graphs: Agent States, Total Agents CPU, and Total Agents Memory. Provided that the options for data collection are set and the Trend option is selected, the graphically displayed data complements the summarized text data that appears on the WebSpeed Agents Performance View page. See the “Data collection details” section on page 73 for details.

One display format for these graphs is a line graph. This format measures how a particular broker-related activity has changed over a period of time. Table 14 identifies and briefly describes each of these graphs.

Table 14: WebSpeed agents performance-related graphs

<table>
<thead>
<tr>
<th>Graph name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent States</td>
<td>Displays two lines of agents-related performance data over a specified time period. The blue line identifies the number of free agents. The red line identifies the number of busy/locked agents during this same time period.</td>
</tr>
<tr>
<td>Total Agents CPU</td>
<td>Displays one line of agents-related performance data over a specified time period. This single data line indicates the total percent of the agents’ CPU usage.</td>
</tr>
<tr>
<td>Total Agents Memory</td>
<td>Displays one line of agents-related performance data over a specified time period. This single data line indicates the total percent of the agents’ memory consumption.</td>
</tr>
</tbody>
</table>

See the “Changing OpenEdge pinup graphical views” section on page 63 for details about changing the data appearance of graphs.
Examining WebSpeed-related Informational views

The WebSpeed Details page provides an Informational views section that allows you to access and review data related to the WebSpeed broker’s configuration properties. The values that appear originate from the ubroker.properties file.

Figure 12 shows the Informational views section of the WebSpeed Details page.

To display and review Configuration Properties view information:

1. From the grid frame for Resources, click the Edit icon to display the details page for the WebSpeed broker whose configuration properties you want to review.

2. Click Configuration Properties in the Informational views section to display the Configuration Properties page, as shown in the following excerpt:

3. Review the values. Note that the properties list is quite long. Scroll to see additional properties and their associated values.
Managing AppServer Data

This chapter presents OpenEdge Management features and functionality related to the AppServer, as outlined in the following sections:

- AppServer overview
- Reviewing AppServer broker status
- Modifying AppServer control settings
- Accessing and reviewing AppServer-related log file data
- Using the AppServer log file viewers
- Examining AppServer-related Operational views
- Examining AppServer-related Informational views
AppServer overview

OpenEdge Management supports a variety of tasks that you can perform to manage an AppServer, including:

- Reviewing your current operating status and associated details.
- Modifying broker-related control settings, such as starting and stopping a broker, and adding or trimming servers.
- Accessing and viewing broker- and server-specific data collected through log files.
- Monitoring and managing AppServer brokers using monitoring plans and rules.
- Generating threshold values for rules using the Configuration Advisor.
- Viewing information about clients connected to a particular AppServer.
- Working with OpenEdge resource-related data that is available through broker- and server-specific information and operational views. AppServer information views provide data in both text and graph formats.

You must have appropriate OpenEdge Management role authorization to perform several of these tasks. See the “Role authorization and OpenEdge Management tasks” section on page 46 for details.

You can also use OpenEdge Management to configure AppServer properties. For details, see OpenEdge Management and OpenEdge Explorer: Configuration.
Reviewing AppServer broker status

The AppServer Status section of the AppServer Details page summarizes current operational details about the AppServer broker. Figure 13 shows the AppServer Status section.

<table>
<thead>
<tr>
<th>AppServer Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host: NBASPAULDXP2</td>
</tr>
<tr>
<td>Broker: ACTIVE</td>
</tr>
<tr>
<td>Operating mode: State-reset</td>
</tr>
<tr>
<td>Broker statistics available: True</td>
</tr>
<tr>
<td>Servers available: 1</td>
</tr>
<tr>
<td>Should register with NameServer?: True</td>
</tr>
</tbody>
</table>

Figure 13: AppServer Status section

Table 15 describes each of the AppServer broker details in the AppServer Status section of the AppServer Details page.

Table 15: AppServer status details

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
<td>The host machine’s name.</td>
</tr>
</tbody>
</table>
| Broker | The running status of the broker. Possible values are:  
  - **ACTIVE** — The broker is currently running.  
  - **Not Running** — The broker is not currently running.  
The broker can also report **Starting** and **Shutting Down** values; however, depending on the speed of the machine on which your management console is running, you may not see these intermediary states. |
| Operating mode | The operating mode of the broker. This mode determines how client requests are dispatched to individual Application Server processes running on the AppServer instance. One of four possible modes can be reported: **Stateless**, **State-free**, **State-aware**, or **State-reset**. |
| Broker statistics available | The status of the broker as it relates to data collection. The possible states are **True** or **False**. See the “Data collection details” section on page 104 for more information about data collection. |
| Servers available | The number of AppServers running and available to fulfill a connection request from a client to an AppServer through this broker when the broker’s status is **ACTIVE**. This value can change frequently, reporting the real-time changes in number of servers available. |
| Should register with NameServer | The status of **True** or **False** to indicate whether or not the broker resource is registered with a NameServer. |
The following points relate to the fields listed in Table 15:

- Broker-related changes that you can make, using either the Broker Control or Server Pool Control options in the Command and control section of the AppServer Details page, can affect the broker and server values that appear in this status section.

- The values that appear in the AppServer Status section are obtained either from the ubroker.properties file or the current, real-time status of the broker (if it is running).
Modifying AppServer control settings

The **Command and control** section of the **AppServer** Details page for an AppServer broker allows you to:

- Start and stop the AppServer broker, and change its associated property settings
- Add or trim the pool of available AppServers associated with the broker
- Obtain and review AppServer-related data collected through broker- and server-specific log files associated with this instance
- Monitor and manage AppServer brokers using monitoring plans and rules, including the option to use Configuration Advisor-recommended settings
- Configure the AppServer’s properties

Figure 14 shows the **Command and control** section of the **AppServer** Details page.

Table 14 identifies where you can find information about other functionality related to the **AppServer** Command and control section.

Table 16: Additional AppServer information

<table>
<thead>
<tr>
<th>For AppServer-related details about . . .</th>
<th>See . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broker and server pool log file monitors and viewers</td>
<td>The “Accessing and reviewing AppServer-related log file data” section on page 117</td>
</tr>
<tr>
<td>Broker monitoring plans and rules</td>
<td>Chapter 11, “Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters”</td>
</tr>
<tr>
<td>Broker rule sets</td>
<td>The “Customizing an AppServer Internet Adapter log file monitor” section on page 183</td>
</tr>
<tr>
<td>Configuration</td>
<td>OpenEdge Management and OpenEdge Explorer: Configuration</td>
</tr>
<tr>
<td>AppServer Client connections</td>
<td>The “Listing AppServer Client connections” section on page 114</td>
</tr>
</tbody>
</table>
AppServer Control

The AppServer Control page summarizes details about a specific AppServer broker resource. From this page, you can start and stop an AppServer broker, and change some broker-related properties, as needed. Figure 15 shows an AppServer Control page.

![AppServer Control: nbspauldip2.asbroker1](image)

**Figure 15: AppServer Control page**

**Note:** The values associated with the Broker statistics available field and the Collect Statistics property are interdependent. See the procedure in the "Data collection details" section on page 104 for additional information.

For details about the WebSpeed Control page, see the "WebSpeed Control page content" section on page 70.

Broker summary

The Broker summary section presents read-only values for these fields: the broker name, its host machine’s name, associated port number and process identification number (PID), the broker’s current status, operating mode, and whether the broker is currently set to collect broker-related statistical data.

Note the following additional details about these fields:

- The Broker name, Host (machine name), Port (number), and Operating mode fields display values as they are defined in the ubroker.properties file.

- The Broker PID and Status fields reflect real-time values based on the broker’s current status. The Broker PID is also a link to more broker process details. See the "Viewing broker process details" section on page 105 for additional information.

- The Broker statistics available field also reflects a current, real-time value. However, the value that appears in this field depends on additional factors. See the "Data collection details" section on page 104 for more details.
Modifying AppServer control settings

Properties

The Properties section displays the status of two user-defined, broker-related properties, Enabled and Collect Statistics:

- The Enabled option indicates that this broker resource recognizes a monitoring plan and its associated rules when the broker resource is active.

  During the discovery process, all AppServer brokers that OpenEdge Management discovers and lists in the list frame under the AppServer category are enabled by default. Once a broker is enabled, OpenEdge Management uses the OpenEdge Management-supplied default values to establish a monitoring plan and rules. (You can customize the plan and rules at any time.)

- The Collect Statistics option enables data collection to occur in the AppServer broker. OpenEdge Management uses this data to identify the broker’s performance. If you do not select the Collect Statistics option for a specific broker (that is, the True status), OpenEdge Management presents only non-statistical data such as Status and PID (pid number) on the various AppServer broker pages. Polled rules are not evaluated and data is not trended.

  The Collect Statistics value plays a central role in data collection. See the “Data collection details” section on page 104 for more details.

A check mark associated with a property indicates that the property is set.

Note: To set the Broker statistics available option to a True status for a specific broker, you must enable the Collect Statistics option. See the procedure in the “Data collection details” section on page 104.

Changing AppServer broker controls

This section describes how to change AppServer broker controls.

To change the AppServer broker’s property settings:

1. From the grid frame for Resources, click the Edit icon to display the details page for the AppServer broker whose property settings you want to change. See the “Accessing OpenEdge Management resource information” section on page 54 for the detailed steps.

2. Click Broker Control in the Command and control section to display the AppServer Control page.

You can make the following changes:

- To change the current setting of the Enabled property, click Edit. Then select or deselect the Enabled property to add or remove the check mark. You must also restart the AppServer broker so that the property change is recognized.
**Note:** A check mark appears to indicate that the Enabled property is set. To clear this option, click the check mark in the box associated with the option.

- To change the current setting of the Broker statistics available property displayed in the Broker Summary section of the AppServer Control page, see the “Data collection details” section on page 104.

- To exit this page without changing any values and return to the AppServer details page, click either Back in the browser, or the AppServer broker instance’s link on the breadcrumb trail.

You can also change the AppServer broker controls by starting or stopping the broker instance. To start or stop an AppServer broker instance, see the “Starting or Stopping OpenEdge resources” section on page 55.

**Data collection details**

Data collection ensures that broker-related performance statistics can be trended to the OpenEdge Management Trend Database. Options and conditions available on the AppServer Control page and the AppServer broker resource monitoring plan must be fulfilled to successfully implement data collection.

On the AppServer Control page, these conditions include:

- Selecting the Collect Statistics option.

- Starting, or stopping and restarting the AppServer broker; you must explicitly perform this step on the AppServer Control page to effect this change.

- Verifying that the value True appears in the Broker statistics available field. (OpenEdge Management automatically updates this field when it detects that the Collect Statistics option was enabled after you started, or stopped and restarted, the AppServer broker.)

On the AppServer broker resource monitoring plan, you must also select the Trend Performance Data option.

**Note:** You are not required to use trending with the data collection activity. However, without the Trend Performance Data option selected, you cannot trend data. Data trended to the OpenEdge Management Trend Database is required for AppServer-related rule evaluation, graphical displays, and report generation.

Using data collection might cause the AppServer broker to exhibit some level of performance degradation, memory degradation, or both.
To set the options to perform data collection in an AppServer broker:

1. Review the current status of the Collect Statistics field in the Properties section of the AppServer Control page; a check mark indicates that the property is set.
   
   If the Collect Statistics field is not checked, then click Edit. In the Collect Statistics field, click in the check box; a check mark appears. Click Save.
   
2. Stop and restart the AppServer broker you want to update.

Note: The Collect Statistics field can be modified dynamically, provided you have selected the Enable dynamic property updates option in the AppServer broker’s configuration properties. For details, see OpenEdge Management and OpenEdge Explorer: Configuration.

The Broker statistics available field in the Broker summary section will have a value of True if the broker restarted successfully. This value indicates that you have successfully set data collection and that broker statistical data is now available to be stored in the OpenEdge Management Trend Database.

Viewing broker process details

You can also access real-time details and statistics that provide you with snapshot information about an individual broker at the point you access this information from the AppServer Control page. Review this information to help you assess a broker’s performance.

To access broker processing details:

1. From the grid frame for Resources, click the Edit icon to display the details page for the AppServer broker whose processing details you want to access. See the “Accessing OpenEdge Management resource information” section on page 54 for the detailed steps.
   
2. Click Broker Control in the Command and control section to display the AppServer Control page, as shown:

![AppServer Control page screenshot]
3. Click the unique PID number associated with the **Broker PID** field to display a **Broker PID** page. This page contains summary and real-time statistics about the broker.

The two sections that comprise the **Broker PID** page present relevant information about the AppServer broker and its current operations:

- The **Process summary** section identifies the **Process name** and **Process start time**. **User id** and **Group id** values appear when Unix-based data is shown. The **Parent pid** identifies the identifier number associated with the process that spawned this current process.

- The **Process statistics** section presents details about the broker’s real-time operational status. Values presented without parentheses identify that the processing time determined since the last scheduled polling interval, as noted, has occurred. Values presented within parentheses have been calculated based on information obtained since the start of the process.

**Table 17** identifies and describes the fields of information presented in the **Process statistics** section.

**Table 17: Process statistics operational data**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident size</td>
<td>The physical size of the process as defined by the host system.</td>
</tr>
<tr>
<td>Virtual size</td>
<td>The virtual size of the process as defined by the host system.</td>
</tr>
<tr>
<td>CPU</td>
<td>The percentage of time spent using the CPU in either the user or kernel mode since the last scheduled poll.</td>
</tr>
<tr>
<td>Weighted CPU</td>
<td>The percentage of time spent using the CPU in either the user or kernel mode since the last scheduled poll divided by the number of CPU processors on the system. This value appears only when there is more than one CPU process on the system where the process is running.</td>
</tr>
<tr>
<td>User time</td>
<td>The amount of CPU time spent in the user mode since the last scheduled poll.</td>
</tr>
<tr>
<td>Kernel time</td>
<td>The amount of CPU time spent in the kernel mode since the last scheduled poll.</td>
</tr>
<tr>
<td>Process time</td>
<td>The sum of the values that appear in the User time and Kernel time fields.</td>
</tr>
</tbody>
</table>
Server Pool Control

The Server Pool Control page, as shown in Figure 16, shows data relevant to your current AppServer workload, and allows you to add or reduce the number of AppServers currently running.

Figure 16: Server Pool Control page

For example, use this page to add agents when agent requests are high; you can add agents to the maximum number of agents that your license recognizes. Also, use this page to reduce the agent count during a lag in agent requests. Using the trim feature, you can reduce agents down to the Minimum agents property setting.

The Server Pool Control page consists of the following:

- An Add or Trim selection that you use to specify the activity you want to perform. When you initiate a manual trim request, OpenEdge Management determines which agent(s) to actually remove. See the “Adding or trimming AppServers” section on page 111 for detailed steps.

- Three distinct, agent-related data summary tables that allow you to review relevant AppServer-pool specific data quickly:
  - Server pool initial configuration
  - Servers state
  - Server pool summary

The changes you make through add/trim activities can affect the data shown in these summary tables. The Server pool summary also allows you to kill a specific server process. See the “Killing an AppServer process” section on page 112 for the detailed steps.
Server pool initial configuration

The **Server pool initial configuration** section identifies AppServer broker configuration properties set in the `ubroker.properties` file (and which are also reflected in the configuration settings within OpenEdge Management). These values appear as read-only.

**Table 18** identifies and describes each field that appears in the **Server pool initial configuration** section.

**Table 18: Server pool initial configuration fields**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial number of servers to start</strong></td>
<td>The value OpenEdge Management references when the AppServer broker starts AppServers.</td>
</tr>
<tr>
<td><strong>Minimum servers</strong></td>
<td>The minimum number of AppServers that must be simultaneously running before the AppServer broker will start additional servers. The broker strives to maintain this specified minimum. If at any time the number of servers falls below the specified minimum, the broker will automatically start the additional servers needed to maintain the minimum. If you set a trim value that requires OpenEdge Management to trim the number of servers below the number specified for this field, OpenEdge Management displays a message.</td>
</tr>
<tr>
<td><strong>Maximum servers</strong></td>
<td>The maximum number of AppServer processes that can be running simultaneously. OpenEdge Management will not fulfill add requests you initiate that will exceed the specified maximum. OpenEdge Management will display a message to state this condition so that you can reconsider your request and, if necessary, initiate a new request.</td>
</tr>
</tbody>
</table>
Servers state

The **Servers state** section provides a snapshot of the total number of AppServers currently associated with a specific server state. The state details related to agents and the number of agents reported reflect real-time data. This data can fluctuate due to changes in the AppServers’ workflow and changes you initiate using the add and trim option.

Table 19 describes each field presented in the **Servers state** section.

### Table 19: Servers state fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active servers</td>
<td>The number of AppServers currently running</td>
</tr>
<tr>
<td>Busy servers</td>
<td>The number of AppServers currently serving ABL client requests</td>
</tr>
<tr>
<td>Locked servers</td>
<td>The number of AppServers currently servicing a bound connection (This state applies to a stateless AppServer.)</td>
</tr>
<tr>
<td>Available servers</td>
<td>The number of AppServers currently available to handle broker requests</td>
</tr>
</tbody>
</table>

Server pool summary and the kill process option

The **Server pool summary** provides:

- Detailed data about each individual server in the AppServer pool associated with a specific AppServer broker. Table 20 identifies and describes each field shown in the section.

- Access to:
  - More data about a specific agent
  - A control to terminate, or kill, the agent process

Use the **PID** field to access these features. Table 20 provides more information about **PID**.

### Table 20: Server pool summary fields  

(1 of 2)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PID</td>
<td>The process identifier for this AppServer. Click the PID number to view a detail page that provides specific information about this server process and, as necessary, kill the process. See the “Killing an AppServer process” section on page 112 for more information.</td>
</tr>
<tr>
<td>State</td>
<td>The current execution state of the AppServer process.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Port</td>
<td>The TCP/IP port number that the AppServer process uses.</td>
</tr>
<tr>
<td>nRq (Number of Requests)</td>
<td>The number of messages sent to the AppServer process.</td>
</tr>
<tr>
<td>nRcvd</td>
<td>The number of messages received by the AppServer process.</td>
</tr>
<tr>
<td>nSent</td>
<td>The number of requests sent by the AppServer process.</td>
</tr>
<tr>
<td>CPU Use</td>
<td>The percentage of CPU user and system time consumed by a process.</td>
</tr>
<tr>
<td>Memory Use</td>
<td>The amount of virtual memory (in Kbytes) consumed by a process.</td>
</tr>
<tr>
<td>Started</td>
<td>The time stamp that indicates when the AppServer process started. If the broker is restarted for any reason, the PID and the Last Change values might change.</td>
</tr>
<tr>
<td>Last Change</td>
<td>The time stamp that indicates when the AppServer process last changed execution state.</td>
</tr>
</tbody>
</table>
Adding or trimming AppServers

This section describes how to add or trim AppServers.

To initiate an AppServer add or trim request:

1. From the grid frame for Resources, click the Edit icon to display the details page for the AppServer broker for which you want to initiate add or trim request. See the “Accessing OpenEdge Management resource information” section on page 54 for the detailed steps.

2. Click Server Pool Control in the Command and control section to display the Server Pool Control page, as shown:

3. From the drop-down list box, select Add or Trim.

4. In the server(s) field, enter the number of servers you want to add or trim. The value you enter must be a positive integer.

When you initiate an add or trim request, OpenEdge Management consults two sets of initial configuration details to determine if, and how, it can honor either request type:

- The number of AppServers for which you are licensed
- The broker property configuration settings stored in the ubroker.properties file

See the “Server pool initial configuration” section on page 108 for information about these configuration details.
5. Select **Submit**. Depending on the changes you make and OpenEdge Management’s capability to implement them, you might notice changes to the numeric values shown in the **Servers state** table. See the “**Servers state**” section on page 109 for more information.

Note: Any time you either add or trim AppServers, it is recommended that you refresh the management console to ensure that you are not viewing stale data.

---

**Killing an AppServer process**

You might want to manually terminate an agent process when:

- An agent process hangs
- You determine from the available data that an agent process is a runaway process

The specific **PID** in the **Agent pool summary** on the **Server Pool Control** page allows you to access the page to kill the offending agent’s process.

Note: OpenEdge Management references the specific **PID** and its associated date and time start details to be sure of a process’ identity before it attempts to kill the process.

You can choose to kill the process in two ways:

- **Kill**—Terminate the process immediately
- **Stop**—Complete the process and then terminate it.

Because you want to manually terminate an agent process only under the two circumstances listed above, the command used when you kill the process is:

```
kill -9
```

Note: An agent (or server) process that has database locks can cause a database crash when you kill the process using the **kill -9** command. Use the command, therefore, only as a last resort.

The description of the signal for the kill process is as follows:

- **Signal Name** — SIGKILL
- **Signal Number** — 9
- **Signal Description** — Kill program

Note: OpenEdge Management references the specific **PID** and its associated date and time start details to be sure of a process’ identity before it attempts to kill the process.
You can also kill a WebSpeed agent process. For details, see the “Killing a WebSpeed agent process” section on page 81.

**To initiate a kill process:**

1. Click **PID** associated with the server process you want to terminate. The specific AppServer **Agent PID** page appears.

   Note that the two sections on this page present relevant summary information about this AppServer agent and its current operational status. See the “Viewing broker process details” section on page 105 for details about this data.

2. Click **Kill** to terminate this process. (Alternatively, you can click **Cancel** at the top of the page to exit the page without terminating the process.)

   **Note:** You can also click **Stop** if you want the related process to complete before stopping.

3. OpenEdge Management will prompt you once again to ensure that you want to terminate this process. Click **OK**.

   OpenEdge Management displays a final status page that identifies the status of your kill request. OpenEdge Management displays one of the following messages:

   - **Process xxxxx has been terminated** — This message indicates that the process was successfully killed. The PID number previously associated with this process is now available for the operating system to reassign.

   - **Process xxxxx cannot be killed at this time** — This message indicates that the process could not be killed. In very rare instances, it is possible that you will not be successful in an attempt to kill a process. You can retry the kill process procedure; however, it is possible that the process will persist for any number of unknown reasons.

   - **Process xxxxx has been reused** — OpenEdge Management has determined that the process PID number and associated time and date stamp do not match the values that the operating system has stored for this same process. Consequently, when you click **Kill**, the process cannot be destroyed.
Listing AppServer Client connections

You can query a running AppServer to see a list of client systems to which the AppServer is currently connected. This information may be helpful in identifying application components that may not be functioning properly so you can intervene, if necessary.

You can view the information about the current client connections in a Summary page or a Detailed page. The Detailed page provides the information found in the Summary page as well as additional details.

To view AppServer Client connections information in a Summary view:

1. From the grid frame for Resources, click the Edit icon to display the details page for the AppServer broker whose client connections' information you want to view.

2. Click AppServer Client Connections in the Command and control section. The Client Connection Summary page appears:
To see a list of client connections for all AppServers, click **List All**.

![Client Connection Detail](image)

The information described in Table 21 is provided in the view.

**Table 21: Client Connection Summary**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection Handle</td>
<td>A unique value that identifies the connection. This value is a monotonically increasing number that is assigned when the client connects to the AppServer.</td>
</tr>
<tr>
<td>Username</td>
<td>A string that was passed as the user name parameter in the AppServer CONNECT method. The interpretation of this value is dependent on the application. The value will be blank if no user name was provided in the CONNECT method.</td>
</tr>
<tr>
<td>Remote IP Address</td>
<td>The IP address of the host machine where the client resides.</td>
</tr>
<tr>
<td>Remote Port Number</td>
<td>The port number of the client on the client host machine.</td>
</tr>
</tbody>
</table>
Connection State
A string that identifies the state of the connection at the time the query was performed. The possible values returned are as follows:
- CONNECTING
- CONNECTED
- SENDING
- RECEIVING
- DISCONNECTING

Connection ID
The globally unique identifier that is assigned to each client connection at the time the client connects to the AppServer.
This is usually the same value that is accessible to the ABL client application using the CLIENT-CONNECTION-ID attribute on the server object handle, and to the ABL server application using the SERVER-CONNECTION-ID attribute on the session handle.

Request Count
The number of requests executed by the client on the connection. This number will include the connection request itself.

Agent PID
The process identifier of the AppServer agent that is actively servicing a request from the specified client. If the client is not running a request at the time the inquiry is performed, this field is blank.

Agent Port Number
The listening port number of the AppServer agent that is actively servicing a request from the specified client. If the client is not running a request at the time the inquiry is performed, this field is blank.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection State</td>
<td>A string that identifies the state of the connection at the time the query was performed. The possible values returned are as follows: CONNECTING, CONNECTED, SENDING, RECEIVING, DISCONNECTING</td>
</tr>
<tr>
<td>Connection ID</td>
<td>The globally unique identifier that is assigned to each client connection at the time the client connects to the AppServer. This is usually the same value that is accessible to the ABL client application using the CLIENT-CONNECTION-ID attribute on the server object handle, and to the ABL server application using the SERVER-CONNECTION-ID attribute on the session handle.</td>
</tr>
<tr>
<td>Request Count</td>
<td>The number of requests executed by the client on the connection. This number will include the connection request itself.</td>
</tr>
<tr>
<td>Agent PID</td>
<td>The process identifier of the AppServer agent that is actively servicing a request from the specified client. If the client is not running a request at the time the inquiry is performed, this field is blank.</td>
</tr>
<tr>
<td>Agent Port Number</td>
<td>The listening port number of the AppServer agent that is actively servicing a request from the specified client. If the client is not running a request at the time the inquiry is performed, this field is blank.</td>
</tr>
</tbody>
</table>
Accessing and reviewing AppServer-related log file data

OpenEdge Management supports log file monitors and associated viewers for the following AppServer resources:

- An individual AppServer broker
- The AppServers associated with the broker

Log files can store a tremendous amount of data. Therefore, monitoring and analyzing data collected within these files might help you to better determine performance expectations and examine trends related to brokers and AppServers.

This section presents information related to both types of AppServer log file monitors. However, only the procedures specific to an AppServer broker log file monitor and its associated viewer are presented. These same procedures will work with an AppServer agent log file monitor. For more general information about OpenEdge Management log file monitor features and functionality, see OpenEdge Management: Resource Monitoring.

**Note:** Log file monitors are not available for either remote AppServer brokers or their associated AppServers.

---

Getting started with log files for AppServer resources

For each local AppServer broker that OpenEdge Management discovers, OpenEdge Management supports monitoring its two associated log file monitors. OpenEdge Management provides a log file resource monitor for the AppServer broker itself and another for its associated AppServer server. Each of these log file monitors has its own log file monitoring capabilities.

The AppServer log file resource monitors are not enabled until the AppServer for which the resource monitors were created is started. When the log file monitor first starts monitoring either an AppServer broker or AppServers, it always starts at the end of the log file.

**Naming conventions**

OpenEdge Management prepends the broker’s name to the name of the broker and server log file monitors and viewers. For example, OpenEdge Management generates the following log file monitor and associated viewer names for an AppServer broker instance named `asbroker50` and the container named `vesta`:

- **Broker-related log file names** — Displays `vesta.asbroker1BrokerLogFileMonitor` and `vesta.asbroker1 AppServer Broker Log File Contents`
- **AppServer-related log file names** — Displays `vesta.asbroker1ServerLogFileMonitor` and `vesta.asbroker1 AppServer Server Log File Contents`

You cannot change these names.
Characteristics of AppServer resource log file monitors

Data that you can capture and view using the AppServer resource log file monitors and viewers can help you:

- Ensure the integrity of these log files by monitoring files for errors and allowing you to define actions that trigger when errors occur.
- Use predefined AppServer-related search criteria, or create your own, to run against the data in these log files. OpenEdge Management predefines search criteria to support the broker and server log file monitors.

Figure 17 shows an excerpt of the Search Criteria subcategories, including the AppServer Broker and AppServer Server links to the predefined search criteria.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ebcedapslp:AppServer Broker</td>
<td></td>
</tr>
<tr>
<td>ebcedapslp:AppServer Server</td>
<td></td>
</tr>
<tr>
<td>ebcedapslp:Database</td>
<td></td>
</tr>
<tr>
<td>ebcedapslp:Message</td>
<td></td>
</tr>
<tr>
<td>ebcedapslp:Miscellaneous</td>
<td></td>
</tr>
<tr>
<td>ebcedapslp:MSS DataServer Broker</td>
<td></td>
</tr>
<tr>
<td>ebcedapslp:MSS DataServer Server</td>
<td></td>
</tr>
<tr>
<td>ebcedapslp:NameServer</td>
<td></td>
</tr>
<tr>
<td>ebcedapslp:Odbc DataServer Broker</td>
<td></td>
</tr>
<tr>
<td>ebcedapslp:Odbc DataServer Server</td>
<td></td>
</tr>
<tr>
<td>ebcedapslp:OE Replication</td>
<td></td>
</tr>
<tr>
<td>ebcedapslp:Oracle DataServer Broker</td>
<td></td>
</tr>
<tr>
<td>ebcedapslp:Oracle DataServer Server</td>
<td></td>
</tr>
</tbody>
</table>

Figure 17: AppServer-related search criteria

You can create and maintain the search criteria for each of the AppServer resources in the following two locations:

- At the AppServer resource local file monitor instance level. The search text and type are not shareable at this level. See the “Customizing an AppServer broker log file monitor” section on page 121 for details.
- At the OpenEdge Management Component Library level under the AppServer subcategory. The search text and type are shareable at this level.

Specifically, the predefined search criteria provide:

- Detailed data about the recorded operations of an AppServer broker or AppServers
- A means for extracting detailed data
Accessing and reviewing AppServer-related log file data

AppServer log file monitor default values

Once an AppServer is enabled, OpenEdge Management creates log file monitors for any discovered brokers and their associated AppServers, using several default values. Of all the default AppServer log file monitor properties, you can modify only its description. However, you have several options regarding the Search Criteria you can use for the log file monitor. See the “Customizing an AppServer broker log file monitor” section on page 121 for details.

The default values are as follows:

- The AppServer default log file monitor is disabled until the AppServer is first started.
- The **Bookmark** is set to **Last Line**, and it is unique.
- The **On First Poll** property is set to **Search From End**.

For detailed information about the Bookmark feature and **On First Poll** property as they relate to log file monitors in general, see *OpenEdge Management: Resource Monitoring.*

File Resource Defaults

OpenEdge Management also supports a polling interval default value for the AppServer broker log file monitor and the AppServer server log file monitor.

To display or update a polling interval default value:

1. From the Resources drop-down on the management console menu, click **Resource Monitoring Defaults**. The **Resource Monitor Defaults** page appears.

   The **Resource Monitor Defaults** page appears:

2. Click **File Resource Defaults**. The **File Resource Defaults** page appears.

3. Scroll down the **File Resource Defaults** page to display the **AppServer Broker Log File Monitor** and the **AppServer Server Log File Monitor** entries.

   You can revert back to the original OpenEdge Management-supplied default value set for the **Polling Interval** field at any time by clicking **Restore Defaults**.
Reviewing predefined log file monitor search criteria

Each log file provides predefined search criteria that address common AppServer broker- or AppServer-related events. Use these searches as defined, or copy and customize them. Review the predefined search criteria before you customize an AppServer log file monitor.

Note: It is recommended that you not edit or delete the predefined criteria.

To review predefined log file monitor search criteria:

1. Select Library from the management console menu bar.

2. Click the plus (+) icon next to Search Criteria in the list frame to expand this category.

3. Click either AppServer Broker or AppServer Server in the list frame. A list of predefined search criteria related to the category that you selected appears in the detail frame. For example, the following screen shows a partial list of the AppServer Broker default search criteria:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broker Error. MSG Received</td>
<td>Catches the following error: Admin error response received: (adminErrorMsg).</td>
</tr>
<tr>
<td>Connect Start Server</td>
<td>Catches the following error: ERROR: cannot start server.</td>
</tr>
<tr>
<td>Connection Refused</td>
<td>Catches the following error: ERROR: connection refused: maximum number of client connections has reached.</td>
</tr>
<tr>
<td>Disconnecting Client</td>
<td>Catches the following error: Error (errMsg) .. disconnecting client.</td>
</tr>
<tr>
<td>Error Loading Prop File</td>
<td>Catches the following error: Error loading properties file (propPathFile) : (PropError_msg) : (PropErrorMsg_string).</td>
</tr>
<tr>
<td>Fatal Error</td>
<td>Catches the following error: FATAL ERROR : specErrora (errMsg).</td>
</tr>
<tr>
<td>Invalid Action For State</td>
<td>Catches the following error: Client FSM Error : Invalid ACTION for STATE : state: (state) : state: (state) : state: (state).</td>
</tr>
<tr>
<td>Invalid Admin Response</td>
<td>Catches the following error: Invalid admin response received: (adminErrorMsg).</td>
</tr>
<tr>
<td>Invalid State</td>
<td>Catches the following error: FSM Error : Invalid State : state: (state) : state: (state).</td>
</tr>
<tr>
<td>IOException Client Response</td>
<td>Catches the following error: IOException while sending clientResp : (IOException_string).</td>
</tr>
<tr>
<td>IOException Message From Server</td>
<td>Catches the following error: IOException reading messages from server : (IOException_string).</td>
</tr>
<tr>
<td>IOExceptionException</td>
<td>Catches the following error: IOException exception on client connection : (IOException_string).</td>
</tr>
<tr>
<td>NameServer Consistency Error</td>
<td>Catches the following error: Internal Consistency Error on NameServer hostname : (InternalConsistencyException).</td>
</tr>
<tr>
<td>NameServer PEException</td>
<td>Catches the following error: PEException on startup of NameServer hostname : (IOException_string).</td>
</tr>
<tr>
<td>NameServer keepAlive stopped</td>
<td>Catches the following error: NameServer keepAlive to NameServer hostname : (IOException_string).</td>
</tr>
<tr>
<td>NameServer NOT started</td>
<td>Catches the following error: NameServer NOT started for services on hostname : (IOException_string).</td>
</tr>
<tr>
<td>No Servers Available</td>
<td>Catches the following error: ERROR: No servers available.</td>
</tr>
<tr>
<td>Server Exec. Error</td>
<td>Catches the following error: Server exec error: command line: (serverStartupCmdLine).</td>
</tr>
<tr>
<td>ServerPCEXception</td>
<td>Catches the following error: ServerPCEXception on hostname : (IOException_string).</td>
</tr>
<tr>
<td>Unimplemented State</td>
<td>Catches the following error: FSM Error : Unimplemented State : state: (state) : state: (state).</td>
</tr>
</tbody>
</table>

Note: You can also create your own search criteria to address a particular AppServer error for which you want to monitor an AppServer. See the "Customizing an AppServer broker log file monitor" section on page 121 for details.
Customizing an AppServer broker log file monitor

The following procedure describes how to customize an AppServer broker log file monitor. Use these same general steps to customize a log file monitor for AppServers.

To customize an AppServer broker log file monitor:

1. From the grid frame for Resources, click the Edit icon to display the details page for the AppServer broker whose log file monitor you want to customize. See the “Accessing OpenEdge Management resource information” section on page 54.

2. Click Log File Monitor of Broker in the Command and control section on the AppServer details page. The Log File Monitor summary monitoring page for the AppServer broker you selected appears:

3. Customize or view the contents of an AppServer broker log file monitor as follows:
   - Click Add Plan to add an existing monitoring plan to this resource monitor.
   - Click Edit at the top of the page to change the description of the log file monitor.
   - Click Log File Viewer at the top of the page to view the contents of the log file monitor.

Note: OpenEdge Management prevents the assignment of schedules that share days or times that overlap. For example, if you have a Default_Schedule set up for a resource monitor, you cannot set up an additional plan because the Default_Schedule is defined for 7 days a week, 24 hours a day. You must modify or remove the Default_Schedule to set up additional plans.
4. To add individual rules, click **Edit** within the **Monitoring plans** section to view the edit page for the log file monitor.

5. Click **Add Rule** under the **Rules selected for this plan** section of the broker monitoring plan page. You can add a rule that is already defined and/or create a new rule.

6. To use an AppServer broker rule already defined in the library:
   a. Select **AppServer Broker** from the drop-down list associated with the **Choose Criteria Category**.
   b. Select the appropriate value from the drop-down list associated with **Choose Search Criteria**.

7. To create a new AppServer broker rule:
   a. Click **Create Criterion** to display the **Create Search Criterion** page.
   b. Enter values in the required fields: **Name** (identifies the name of the search criteria you are creating) and **Search Text** (identifies the information you are looking for in the log).
   c. Select the search type: **Literal Search** or **Regular Expression**.
   d. Choose whether to use an existing category or use a new category for the rule. Then select the **AppServer Broker** category.
   e. Click **Save**. The **Create Log File Rule** page reappears.
   
   The values you defined and selected to create a rule on the **Create Search Criterion** page are now available on the **Create Log File Rule** page. The **Choose Search Category** drop-down list shows the name you entered in the **Name** field on the **Create Search Criterion** page. The **Choose Criteria Category** drop-down list shows the category in which you elected to store the new rule.

8. Select the appropriate values from the **Severity** and **On Alert Action Perform** drop-down lists to complete the alert severity and action definition that you want to associate with this rule.

9. Click **Save**.

10. To add another individual rule, repeat **Step 5** through **Step 9**.

11. Click **Select Rule Sets** to create a new log file rule or choose from existing rule sets to add to the monitoring plan. If you choose **Select Rule Sets**, you can pick from a list of predefined rule sets to add to the monitoring plan.

12. Click the AppServer broker instance’s link on the breadcrumb trail to display the broker’s detail page again.
13. Click Log File Monitor of Broker again to view the new rules updated in the Rules Summary.

For more information about editing search criteria for rules, see the appropriate sections of OpenEdge Management: Resource Monitoring.

**Note:** You can copy the default AppServer log file rule set, but you cannot delete it.
Using the AppServer log file viewers

To view the contents of each AppServer log file, access the viewer associated with each individual log file.

The log file viewer allows you to examine the contents of an AppServer-related log file through an HTML interface. You can access these log file viewers from the following two locations:

- Click the link in the Command and control section of the AppServer Details page. Click Log File Viewer of Broker to view the broker’s file contents and click Log File Viewer of Servers to view the AppServer’s file contents.

- Click the Log File Viewer button that appears at the top of the log file monitor summary monitoring page.

Figure 18 presents the AppServer broker log file viewer, which is showing the contents of an AppServer broker log file.

![AppServer Broker log file viewer](image)

The following information will help you use the AppServer log file viewer:

- Use the Show field to control how many AppServer log file entries appear at one time. The number entered into the Show field cannot be less than 10.

- Use the Overlap field to control how many entries are repeated from screen to screen.

  Note: The value in the Overlap field must not be more than the number in the Show field minus one. For example, if you show 30 entries, you can overlap only 29 or fewer of them.

- Click Reload after changing the values in either the Show field or the Overlap field. Note that OpenEdge Management will prompt you to click Reload. The warning message that reads changed, reload needed appears in the File log status field in the log file summary section of the page.

If you do not reload, the viewer displays the previous values.
• Click **Go To** to control which numbered entry in the log file the viewer begins its display with. For example, a value of 10 entered into the **Go To** field will begin the display from the tenth log file entry.

**Note:** You must click **Go To** after entering a value in the **Go To** field, or the viewer will not update its display.

• The default display of entries is in ascending order. Choose **Descending** to change the display. Note that the **Show** field dictates the number of entries shown, whether they appear in ascending or descending order.

• Click **First** to display the first \( x \) entries, where \( x \) is the value in the **Show** field.

• Click **Prior** to display the previous \( x \) entries, where \( x \) is the value in the **Show** field.

• Click **Next** to display the next \( x \) entries, where \( x \) is the value in the **Show** field.

• Click **Last** to display the last \( x \) entries, where \( x \) is the value in the **Show** field.

• To view additional log file entries without changing your current starting log file entry, leave the **Go To** field blank, change the value in the **Show** field, and click **Reload**.

### Refreshing log file data

Periodically refresh log file data. Select the **Refresh** page icon from the toolbar for either the list or detail frame to repaint an existing page. You can also set a default value that OpenEdge Management uses to automatically refresh the management console.

To set a default value that OpenEdge Management uses to automatically refresh the management console, select **Options** → **User Preferences** → **Automatically refresh pages**.

Refresh data to avoid the following situations:

• OpenEdge Management considers a viewer that has been inactive for more than four hours stale. Once a viewer becomes stale, OpenEdge Management releases ninety-five percent of any memory being held. If you try to use a stale viewer, OpenEdge Management automatically reloads the file. Because additional resource activity might have occurred during the viewer’s inactivity, the reloaded log file view might not match the previous log file view of that resource.

• OpenEdge Management considers a viewer that has been inactive for forty-eight hours dead. Once a viewer dies, OpenEdge Management releases all of its memory. To return to the log file displayed in a dead view, you must renavigate to it, regardless of whether you pinned up the view or saved a link to it before the viewer died.
Examining AppServer-related Operational views

The AppServer Details page provides an Operational views section that allows you to access and review data related to the performance of:

- A specific AppServer broker
- A pool of AppServers associated with a specific broker

Data for both the broker and the broker’s AppServer pool can appear in text and graph formats.

**Note:** The graphs associated with the AppServer Operational views appear only when the Broker statistics available field on the AppServer Control page displays a True status. See the “Data collection details” section on page 104 for details.

Figure 19 shows the Operational views section of the AppServer Details page.

---

**Figure 19: AppServer Operational views**

The Operational views section also provides a link to status information.

The following sections describe how to access and review details associated with each of these performance views.

### Accessing and reviewing the Broker Performance View

The AppServer Operational views section allows you to display information about the AppServer broker’s performance and the state of the broker’s associated servers. Review this data frequently, as it will help you make informed decisions about your use of the broker and server pool controls.

To display and review AppServer Operational views information:

1. From the grid frame for Resources, click the Edit icon to display the details page for the AppServer broker whose Operational views information you want to review. See the “Accessing OpenEdge Management resource information” section on page 54 for the detailed procedure.
2. Click **Broker Performance View** in the **Operational views** section. A page comprising data summary sections and graphs appears, as shown:

![Broker Performance View](image)

**Data summary**

The summarized, read-only text data on this page consists of three sections: **Broker Requests**, **Client Connections**, and **Last Run Procedures**. Data in these text boxes is determined when the page is initialized or refreshed.

The **Broker Requests** section provides details about the AppServer broker's connection workload, as identified in **Table 22**.

**Table 22**: AppServer broker connection workload details

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed</td>
<td>The number of broker requests fulfilled</td>
</tr>
<tr>
<td>Queued</td>
<td>The number of broker requests to be processed</td>
</tr>
<tr>
<td>Rejected</td>
<td>The number of broker requests that could not be processed</td>
</tr>
<tr>
<td>Average Busy Time (s)</td>
<td>The average amount of time that the broker is busy servicing requests (expressed in milliseconds)</td>
</tr>
<tr>
<td>Average Locked Time (s)</td>
<td>The average amount of time that the broker is locked (expressed in milliseconds)</td>
</tr>
</tbody>
</table>

The **Client Connections** section identifies the number of client connections that the broker is currently handling, and the total number of client connections this broker has processed since the broker started.

The **Last Run Procedures** section lists the most recent procedures that were run.
Graphs presentation

The graphs presentation section of the Broker Performance View contains three graphs: **AS Broker Request Activity**, **AS Broker Activity Status**, and **Client Connections**. Provided that data collection is set and the **Trend** option is selected (in the monitoring plan), the graphically displayed data complements the summarized text data that appears on the AppServer Broker Performance View page. See the “Data collection details” section on page 104 for details.

One display format for these graphs, as shown on the Broker Performance View page, is a line graph. This format measures how a particular broker-related activity has changed over a period of time. **Table 23** identifies and briefly describes each of these graphs.

<table>
<thead>
<tr>
<th>Graph name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS Broker Request Activity</td>
<td>Displays two lines of broker-related performance data over a specified time period. The blue line identifies the number of requests that the broker has completed since the last poll. The red line identifies the number of requests that this same broker has received in this time period.</td>
</tr>
<tr>
<td>AS Broker Activity Status</td>
<td>Displays two lines of broker-related performance data over a specified time period. The blue line identifies the percent of requests that the broker has rejected, up to and including the last poll OpenEdge Management has completed for this broker resource. The red line identifies the percent of requests in the queue waiting for the broker, up to and including the last poll completed.</td>
</tr>
<tr>
<td>Client Connections</td>
<td>Displays two lines of client connections related to this broker over a specified time period. For example, data displayed might be related to the last polling activity. The blue line identifies the total number of client connections requested. The red line identifies the number of clients currently connected to this broker.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> It is possible for this graph to accurately show that the number of current connections is higher than the total number of connections. The <strong>Clients Total</strong> reflects only new connections over the specified time period. In contrast, the <strong>Clients Current</strong> reflects all current connections in place when the graph is displayed, both newly connected and those that might still be connected from a previous polling period.</td>
</tr>
</tbody>
</table>

See the “Changing OpenEdge pinup graphical views” section on page 63 for details about changing the data appearance of graphs.
Accessing and reviewing the Servers Performance View

The AppServer Operational views allow you to view information about servers’ status.

To access and review servers’ status information:

1. From the grid frame for Resources, click the Edit icon to display the details page for the AppServer broker whose servers’ status information you want to review. See the “Accessing OpenEdge Management resource information” section on page 54 for the detailed procedure.

2. Click Servers Performance View in the Operational views section to display the AppServer Servers Performance View page:

Data summary

This read-only view comprises two sections:

- **Servers state** — Displays the four possible states of the servers that are currently associated with this AppServer broker: Active servers, Busy servers, Locked servers, and Available servers. See Table 19 earlier in this chapter for a definition of each of these states.

- **Server pool summary** — Displays detailed data about each individual server in the AppServer pool associated with a specific AppServer broker. See Table 20 for a description of each field that appears in the Server pool summary section. You also have access to additional data about a specific AppServer and a control that allows you to kill a server process. See the “Killing an AppServer process” section on page 112 for the detailed steps.
Graphs presentation

The graphs presentation section of the Servers Performance View contains three graphs: Server States, Total Servers CPU, and Total Servers Memory. Provided that data collection is set and the Trend option is selected, the graphically displayed data appears and complements the summarized text data that appears on the AppServer Servers Performance View page. See the “Data collection details” section on page 104 for details.

One display format for these graphs, as previously shown on the Servers Performance View page, is a line graph. This format measures how a particular broker-related activity has changed over a period of time.

Table 24 identifies and briefly describes each of these graphs.

Table 24: AppServers performance-related graphs

<table>
<thead>
<tr>
<th>Graph name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server States</td>
<td>Displays two lines of server-related performance data over a specified time period. The blue line identifies the number of free servers. The red line identifies the number of busy/locked servers during this same time period.</td>
</tr>
<tr>
<td>Total Servers CPU</td>
<td>Displays one line of server-related performance data over a specified time period. This single data line indicates the total percent of the servers’ CPU usage.</td>
</tr>
<tr>
<td>Total Servers Memory</td>
<td>Displays one line of server-related performance data over a specified time period. This single data line indicates the total percent of the servers’ memory consumption.</td>
</tr>
</tbody>
</table>

See the “Changing OpenEdge pinup graphical views” section on page 63 for details about changing the data appearance of graphs.
Examining AppServer-related Informational views

The AppServer Details page provides an Informational views section that allows you to access and review data related to the AppServer broker’s configuration properties. These values originate from the ubroker.properties file.

Figure 20 shows the Informational views section of the AppServer Details page.

![AppServer Informational views](image)

Figure 20: AppServer Informational views

To access and review Configuration Properties view details:

1. From the grid frame for Resources, click the Edit icon to display the details page for the AppServer broker whose configuration properties you want to review. See the “Accessing OpenEdge Management resource information” section on page 54 for the detailed procedure.

2. Click Configuration Properties in the Informational views section to display the AppServer Raw Configuration Properties page, as shown in the following excerpt:

```
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>processInit</td>
<td>0</td>
</tr>
<tr>
<td>envLogFile</td>
<td>$[WorkPath]/asbroker1.server.log</td>
</tr>
<tr>
<td>envStartupParam</td>
<td></td>
</tr>
<tr>
<td>brsDebuggerUseBrokerAlias</td>
<td>1</td>
</tr>
<tr>
<td>description</td>
<td>A sample AppServer setup for State-reset</td>
</tr>
<tr>
<td>brsNumLogFile</td>
<td>3</td>
</tr>
<tr>
<td>brsWatchdogInterval</td>
<td>60</td>
</tr>
<tr>
<td>msqSvrNumLogFile</td>
<td>3</td>
</tr>
<tr>
<td>certStorePath</td>
<td>$[Startup/DLC]/certs</td>
</tr>
<tr>
<td>defaultService</td>
<td>1</td>
</tr>
<tr>
<td>sectionDSCenabled</td>
<td>0</td>
</tr>
<tr>
<td>keyStorePath</td>
<td>$[Startup/DLC]/keys</td>
</tr>
<tr>
<td>registrationRetry</td>
<td>30</td>
</tr>
<tr>
<td>brsDebuggerKeyAliasPassword</td>
<td></td>
</tr>
<tr>
<td>envSelectionScheme</td>
<td>0</td>
</tr>
<tr>
<td>controllingNameServer</td>
<td>NS1</td>
</tr>
<tr>
<td>className</td>
<td>com.progress.asbroker.asbroker</td>
</tr>
<tr>
<td>userName</td>
<td></td>
</tr>
<tr>
<td>envConnectProc</td>
<td></td>
</tr>
<tr>
<td>operatingMode</td>
<td>State-reset</td>
</tr>
<tr>
<td>envShutDownProc</td>
<td></td>
</tr>
<tr>
<td>envLogAppend</td>
<td>1</td>
</tr>
<tr>
<td>serverASKActivityTimeout</td>
<td>60</td>
</tr>
<tr>
<td>msqSvrLogEntries</td>
<td>0</td>
</tr>
<tr>
<td>envStartupProcParam</td>
<td></td>
</tr>
<tr>
<td>compressionEnable</td>
<td>0</td>
</tr>
<tr>
<td>msqSvrLogAppend</td>
<td>1</td>
</tr>
</tbody>
</table>
```

3. Review the values that appear. Note that the properties list is quite long. You might need to scroll to see the entire list of properties and their associated values.
Managing NameServer Data

This chapter presents OpenEdge Management features and functionality related to NameServers, as described in the following sections:

- NameServer overview
- Reviewing NameServer status
- Modifying NameServer control settings
- Accessing and reviewing NameServer-related log file data
- Using the NameServer log file viewer
- Examining NameServer Operational and Informational views
NameServer overview

OpenEdge Management supports a variety of tasks you can perform to manage a specific NameServer, including:

- Reviewing your current operating status and associated details
- Reviewing property settings associated with a NameServer
- Accessing and viewing data collected in a NameServer log file monitor
- Working with NameServer resource-related details available through informational and operational views
- Monitoring and managing the NameServer using monitoring plans and rules

For details about using OpenEdge Management to configure NameServer properties, see OpenEdge Management and OpenEdge Explorer: Configuration.

You must have the appropriate OpenEdge Management role authorization to perform several of these tasks. For more information, see the “Role authorization and OpenEdge Management tasks” section on page 46.
Reviewing NameServer status

The NameServer Status section of the NameServer Details page summarizes current operational details about the NameServer. Figure 21 shows the NameServer Status section.

<table>
<thead>
<tr>
<th>NameServer Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NameServer:</td>
<td>Running</td>
</tr>
<tr>
<td>Host:</td>
<td>NBASFAULDIXP2</td>
</tr>
<tr>
<td>Location:</td>
<td>Local</td>
</tr>
<tr>
<td>Registered Brokers:</td>
<td>2</td>
</tr>
<tr>
<td>Registered Application Services:</td>
<td>3</td>
</tr>
</tbody>
</table>

Figure 21: NameServer Status section

Table 25 describes each of these NameServer-related details.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NameServer</td>
<td>The running status of the NameServer. Possible values are:</td>
</tr>
<tr>
<td></td>
<td>• Running</td>
</tr>
<tr>
<td></td>
<td>• Not running</td>
</tr>
<tr>
<td>Host</td>
<td>The host machine's name</td>
</tr>
<tr>
<td>Location</td>
<td>Whether the NameServer is local or remote</td>
</tr>
<tr>
<td>Registered Brokers</td>
<td>The number of brokers currently registered with the NameServer</td>
</tr>
<tr>
<td>Registered Application Services</td>
<td>The number of Application Services (that is, WebSpeed and AppServer) that are registered with the NameServer</td>
</tr>
</tbody>
</table>
Modifying NameServer control settings

The Command and control section of the NameServer Details page allows you to:

- Start and stop a specific NameServer instance, and enable or disable the monitoring of it
- Obtain and review data collected through a NameServer log file associated with the instance
- Monitor and manage a NameServer instance using monitoring plans and rules
- Configure a NameServer’s properties

**Note:** The NameServer does not use the Configuration Advisor feature because the NameServer does not collect and trend data.

Figure 22 shows the Command and control section of the NameServer Details page.

Table 26 identifies where you can find information about other functionality related to the NameServer Command and control section.

### Table 26: Additional NameServer information

<table>
<thead>
<tr>
<th>For NameServer-related details about . . .</th>
<th>See . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log file monitors and viewers</td>
<td>The “Accessing and reviewing NameServer-related log file data” section on page 139</td>
</tr>
<tr>
<td>Monitoring plans and rules</td>
<td>Chapter 11, “Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters”</td>
</tr>
<tr>
<td>Rule sets</td>
<td>The “Customizing a NameServer log file monitor” section on page 142</td>
</tr>
<tr>
<td>Configuration</td>
<td>OpenEdge Management and OpenEdge Explorer: Configuration</td>
</tr>
</tbody>
</table>
NameServer Control

The NameServer Control page summarizes details about a specific NameServer resource. From this page, you can start and stop a NameServer instance, and change the Enabled option. Figure 23 shows the NameServer Control page.

![NameServer Control](image)

**Figure 23:** NameServer Control

The following sections describe the two parts of the NameServer Control page.

**Broker summary**

The Broker summary section shows read-only values for these fields: the Name (NameServer's name), the Host, Port (number), and Status. The NameServer's name and port number are defined in the ubroker.properties file; the Status field reflects real-time values based on the NameServer's current operating status.

**Properties**

The Properties section shows the state of the Enabled option. The Enabled option indicates that this resource recognizes a monitoring plan and its associated rules when the broker resource is active.

During the discovery process, all NameServers that OpenEdge Management discovers and identifies in the list frame under the NameServer category are enabled by default. (A check mark indicates that the Enabled option is set.) Once you enable a NameServer resource, OpenEdge Management uses its default values to establish a monitoring plan and rules. (You can customize the plan and rules at any time.)
**Changing NameServer controls**

This section describes how to change NameServer controls.

### To change the NameServer's Enabled property setting:

1. From the grid frame for Resources, click the Edit icon to display the details page for the NameServer instance whose property settings you want to change. See the "Accessing OpenEdge Management resource information" section on page 54 for the detailed steps.

2. Click **Control** in the **Command and control** section to display the **NameServer Control** page:

   ![NameServer Control Page](image)

   3. You can now:

      - Click **Edit** to change the current setting of the **Enabled** property. A check mark appears to indicate that the **Enabled** property is set. To clear this option, click the check mark.

      - Click **Cancel** to exit the page without changing any values. The **NameServer Details** page reappears in the management console.

You can also change the NameServer broker controls by starting or stopping the broker instance. To start or stop a NameServer broker instance, see the "Starting or Stopping OpenEdge resources" section on page 55.
Accessing and reviewing NameServer-related log file data

You can access and view log file data generated for each locally defined NameServer instance. Log files can store a tremendous amount of data. Therefore, monitoring and analyzing data collected within these files might help you to better determine NameServer performance expectations and examine trends.

**Note:** Log file resource monitoring cannot be performed for remote NameServers.

This section presents information and provides procedures specific to a log file monitor and viewer. For more general information about OpenEdge Management log file monitor features and functionality, see *OpenEdge Management: Resource Monitoring*.

Getting started with NameServer log files

OpenEdge Management supports monitoring the associated log file monitor for each local NameServer instance it discovers. OpenEdge Management also provides a log file viewer for each NameServer log file monitor to help you quickly access and review this data.

The NameServer log file monitor is not enabled until the NameServer created is enabled. When the NameServer log file monitor first begins monitoring, it starts at the end of the log file.

Characteristics of a NameServer log file monitor

Data that you can capture and view using NameServer log file monitors and viewers helps you to:

- Ensure the integrity of NameServer log files by monitoring the files for errors and allowing you to define actions that trigger when errors occur.

- Use predefined NameServer-related search criteria, or create your own, to run against the data in a NameServer file. You can create and maintain the search criteria in two locations:
  - At the NameServer local file monitor instance level. The search text and type are not shareable at this level.
  - At the OpenEdge Management Component Library level under the NameServer subcategory. The search text and type are shareable at this level.

The predefined search criteria provide:

- Detailed data about the recorded operations of a NameServer

- A means for you to extract the detailed data
NameServer log file monitor default values

Once a NameServer is enabled, OpenEdge Management creates a NameServer log file monitor, using several default values, for that NameServer resource. Of the default NameServer log file monitor properties, you can modify only the description. However, you have several options regarding the Search Criteria you can use for a NameServer log file monitor. See the “Customizing a NameServer log file monitor” section on page 142 for more details.

The default values are set as follows:

- The NameServer default log file monitor is enabled and disabled along with the NameServer instance.
- The Bookmark is set to Last Line, and it is unique.
- The On First Poll property is set to Search From End.

For detailed information about the Bookmark feature and the On First Poll property as they relate to log file monitors in general, see the appropriate section in *OpenEdge Management: Resource Monitoring*.

File Resource Defaults

To display or update a polling interval default value:


3. Scroll down the File Resource Defaults page to display the current value set in the Polling Interval field for the NameServer Log File Monitor entry.

   To revert to the original OpenEdge Management-supplied default value, click Restore Defaults.
Reviewing predefined log file monitor search criteria

The NameServer log file monitor provides predefined search criteria that address common NameServer events. Use the search criteria as defined, or copy and customize it. Review this information before you customize a NameServer log file monitor.

Note: It is recommended that you not edit or delete the predefined criteria.

To access predefined search criteria for a NameServer log file monitor:

1. Click Library from the management console menu bar.

2. Click the plus (+) icon next to the Search Criteria in the list frame to expand this category.

3. Click NameServer. A list of predefined NameServer search criteria appears in the detail frame as shown:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot Return Message</td>
<td>Catches the following error: Cannot return message to Client application at host (host).</td>
</tr>
<tr>
<td>Incorrect UUID</td>
<td>Catches the following error: Incorrect UUID (UUID) received from Broker (name) (host) (port).</td>
</tr>
<tr>
<td>Exception Causing NS Shutdown</td>
<td>Catches the following error: Multiple I/O exception errors on port (port), the NameServer is shutting down.</td>
</tr>
<tr>
<td>Invalid Message Code</td>
<td>Catches the following error: Request received from (host) (port) contains invalid message code (code).</td>
</tr>
<tr>
<td>Listening Error</td>
<td>Catches the following error: An error occurred while listening for network input requests on port (port).</td>
</tr>
<tr>
<td>Message Error</td>
<td>Catches the following error: An error occurred while (marshalling/unmarshalling) message to client/broker (message).</td>
</tr>
<tr>
<td>Socket ID Exception</td>
<td>Catches the following error: An exception occurred: Error message (message).</td>
</tr>
<tr>
<td>Unhandled Exception</td>
<td>Catches the following error: An unhandled exception was received: Exception (Exception).</td>
</tr>
</tbody>
</table>

Note: You can also create your own search criteria to address a particular NameServer error for which you want to monitor a NameServer. For additional information, see the "Customizing a NameServer log file monitor" section on page 142.
Customizing a NameServer log file monitor

You can make some custom changes to a NameServer log file monitor.

To customize a NameServer log file monitor:

1. From the grid frame for Resources, click the Edit icon to display the details page for the NameServer instance whose log file monitor you want to customize. The NameServer details page appears.

2. Click Log File Monitor in the Command and control section. The log file monitor summary monitoring page for the NameServer instance that you selected appears:

3. Customize or view the contents of a NameServer log file monitor as follows:
   - Click Add Plan to add an existing monitoring plan to this resource monitor.
   - Click Edit at the top of the page to change the description of this log file monitor.
   - Click Log File Viewer at the top of the page to view the contents of the log file monitor.

   **Note:** OpenEdge Management prevents the assignment of schedules that share days or times that overlap. For example, if you have a Default_Schedule set up for a resource monitor, you cannot set up an additional plan because the Default_Schedule is defined for 7 days a week, 24 hours a day. You must modify or remove the Default_Schedule to set up additional plans.

4. To add individual rules, click Edit within the monitoring plans section to display the edit page for the NameServer log file monitor. To add rule sets to this plan, perform Step 11 in this procedure.
5. Click **Add Rule** under the **Rules selected for this plan** section of the NameServer monitoring plan page. You can add a rule that is already defined or create a new rule.

6. To use a NameServer rule that is already defined:
   
a. Select **NameServer** from the drop-down list associated with the **Choose Criteria Category**.
   
b. Select the appropriate value from the drop-down list associated with **Choose Search Criteria**.

7. To create a new NameServer rule:
   
a. Click **Create Criterion** to display the **Create Search Criterion** page.
   
b. Enter values in the required fields: **Name** (identifies the name of the search criteria you are creating) and **Search Text** (identifies the information you are looking for in the log).
   
c. Choose whether to use an existing category or use a new category for the rule. Then select the **NameServer** category.
   
d. Click Save. The **Create Log File Rule** page reappears.

   The values you defined and selected to create a rule on the **Create Search Criterion** page are now available on the **Create Log File Rule** page. The **Choose Search Category** drop-down list shows the name you entered in the **Name** field on the **Create Search Criterion** page. The **Choose Criteria Category** drop-down list shows the category in which you elected to store the new rule.

8. Select the appropriate values from the **Severity** and **On Alert Action Perform** drop-down lists to complete the alert severity and action definition that you want to associate with this rule.

9. Click **Save**.

10. To add another individual rule, repeat Step 5 through Step 9.

11. Click **Select Rule Sets** to create a new log file rule, or choose from existing rule sets to add to the monitoring plan. If you choose **Select Rule Sets**, you can choose from a list of predefined rule sets to add to the monitoring plan.

12. Click the NameServer instance's link on the breadcrumb trail to display the details page again.

13. Click **Log File Monitor** again to view the new rules updated in the **Rules Summary**.

For more information about editing search criteria for rules, see the appropriate sections of *OpenEdge Management: Resource Monitoring*.

**Note:** You can copy the default NameServer log file rule set, but you cannot delete it.
Using the NameServer log file viewer

The NameServer log file viewer allows you to examine the contents of a log file through an HTML interface. You can access the log file viewer from two locations:

- The Log File Viewer link in the Command and control section of the NameServer Details page
- The Log File Viewer button that appears at the top of the NameServer Log Monitor page

Figure 24 shows the NameServer log file viewer with the contents of a NameServer log file displayed.

Figure 24: NameServer log file viewer

The following information will help you use the NameServer log file viewer:

- Use the Show field to control how many log file entries appear at one time. The number entered into the Show field cannot be less than 10.

- Use the Overlap field to control how many entries are repeated from screen to screen.

Note: The value in the Overlap field must not be more than the number in the Show field minus one. For example, if you show 30 entries, you can overlap only 29 or fewer of them.
• Click **Reload** after changing the values in either the **Show** field or the **Overlap** field. Note that OpenEdge Management will prompt you to click **Reload**. The warning message that reads **changed, reload needed**, as shown in Figure 5-4, appears in the **Log file status** field in the **Log file summary** section of this page.

If you do not reload, the viewer displays the previous values.

• Click **Go To** to control which numbered entry in the log file the viewer begins its display with. For example, a value of 10 entered in the **Go To** field will begin the display from the tenth log file entry.

  **Note:** You must click **Go To** after entering a value in the **Go To** field, or the viewer will not update its display.

• The default display of entries is in ascending order. Choose **Descending** to change the display. Note that the **Show** field dictates the number of entries shown, whether they display in ascending or descending order.

• Click **First** to display the first \( x \) entries, where \( x \) is the value in the **Show** field.

• Click **Prior** to display the previous \( x \) entries, where \( x \) is the value in the **Show** field.

• Click **Next** to display the next \( x \) entries, where \( x \) is the value in the **Show** field.

• Click **Last** to display the last \( x \) entries, where \( x \) is the value in the **Show** field.

• To view additional log file entries without changing your current starting log file entry, leave the **Go To** field blank, change the value in the **Show** field, and click **Reload**.
Chapter 5: Managing NameServer Data

Refreshing log file data

Periodically refresh log file data. Select the Refresh page icon from the toolbar for either the list or detail frame to repaint an existing page. You can also set a default value that OpenEdge Management uses to automatically refresh the management console.

To set a default value that OpenEdge Management uses to automatically refresh the management console, select Options → User Preferences → Automatically refresh pages.

Refresh data to avoid the following situations:

- OpenEdge Management considers a viewer that has been inactive for more than four hours stale. Once a viewer becomes stale, OpenEdge Management releases ninety-five percent of the memory being held. If you try to use a stale viewer, OpenEdge Management automatically reloads the file. Because additional resource activity might have occurred during the viewer’s inactivity, the reloaded log file view might not match the previous log file view of that resource.

- OpenEdge Management considers a viewer that has been inactive for forty-eight hours dead. Once a viewer dies, OpenEdge Management releases all of its memory. To return to the log file shown in a dead view, you must renavigate to it, regardless of whether you pinned up the view or saved a link to it before the viewer died.
Examining NameServer Operational and Informational views

The NameServer Details page provides two sections that provide access to NameServer-relevant operating details. These sections are:

- Operational views
- Informational views

Accessing and reviewing Operational views

The NameServer Operational views display the NameServer’s current running status.

To display and review runtime information about the NameServer instance:

1. From the grid frame for Resources, click the Edit icon to display the details page for the NameServer instance whose runtime information you want to review. See the “Accessing OpenEdge Management resource information” section on page 54 for the detailed procedure.

2. Click Status in the Operational Views section to display the Operational Status page:

   ![Operational Status Page]

   This view comprises a single Summary section that appears at the top of the view, followed by an AppService section for each Application Service registered with the NameServer.
Operational Views content examination

In general, the summary section data pertains to the resource as a whole. Each Application Services detail section focuses primarily on data for an individually registered broker. The total values shown in the Summary section are derived by adding the unique values that appear in individual AppService sections. However, there are some situations in which the request-related counts between these sections might not correlate. See the description of the Total client requests received and Total client requests rejected fields in Table 27 and the Requests Received and Requests Directed fields in Table 28 for details.

Table 27 briefly describes each of the fields that appear in the Summary section.

Summary section

In the Summary section, the Number of Brokers field shows a total of all the brokers currently registered with a specific resource. The number of unique brokers identified in each of the separate AppService detail sections equals the number shown in the Number of Brokers field.

Table 27 describes the Summary fields and their display-only details. Most of the values that appear on this page are originally defined in the ubroker.properties file.

Table 27: Summary details on the Operational Status page (1 of 2)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
<td>The NameServer’s host machine name.</td>
</tr>
<tr>
<td>Port</td>
<td>The number of the UDP Port that the NameServer uses to listen for client connection requests and registration messages from AppServers and Transaction Servers.</td>
</tr>
<tr>
<td>Timeout</td>
<td>The value, in seconds, that indicates how often the NameServer checks for WebSpeed or AppServer broker instances that have timed out.</td>
</tr>
<tr>
<td></td>
<td>When a WebSpeed or AppServer broker instance registers with a NameServer, the instance indicates how often it will send &quot;keep-alive&quot; messages by setting a registration retry value (a property setting in the ubroker.properties file). Once a NameServer determines that it has not received a &quot;keep-alive&quot; message from a broker instance within the broker’s registration retry time, the NameServer automatically unregisters the instance.</td>
</tr>
<tr>
<td>Start time</td>
<td>The date and time stamp when the NameServer started. Any time the NameServer is restarted, this field will be updated to display the NameServer’s most recent start time.</td>
</tr>
<tr>
<td>Number of AppServices</td>
<td>The number of Application Services associated with this NameServer instance. The count associated with this field matches the number of Application Services listed in the detailed AppService sections in this view.</td>
</tr>
</tbody>
</table>
Examining NameServer Operational and Informational views

Application Services detail

For each Application Service (AppService) currently identified to the NameServer, there is a unique table of displayed values that appears on the Operational Status page. Table 28 briefly describes each of these fields. Also, note these additional points about the relationship of these fields to each other and to data presented in the Summary section:

- An individually registered broker can support multiple Application Services. Therefore, you might see several AppService detail sections associated with a NameServer instance, but only a small total number reported in the Number of Brokers field in the Summary section.

- In an Application Services detail section, the value that appears in the Requests Received field reflects a total number of requests for this service. However, each broker identified as supporting a client request to an Application Service maintains its own individual Requests Directed total.

- If an active broker goes down or is unavailable, any AppService details associated with that broker will no longer appear. If the broker reregisters, its total Requests Directed count will be reset to zero.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Brokers</td>
<td>The number of brokers in the broker pool that are currently registered with this NameServer instance, directing client connection requests to a requested Application Service. A broker might register more than one Application Service with a NameServer instance. Therefore, it might appear several times in the AppServices detail section. However, the broker will only count as 1 towards the total number of brokers recorded in this field.</td>
</tr>
<tr>
<td>Total client requests received</td>
<td>The total number of client requests received by the NameServer since it started. Any time the NameServer is restarted, this field will be reset to display a request total relative to the NameServer’s most recent start time.</td>
</tr>
<tr>
<td>Total client requests rejected</td>
<td>The total number of times that a client requested a broker for an Application Service that the NameServer had no knowledge of; therefore, a client could not be matched up with a registered broker. This value identifies real-time client requests. Data related to any requests that the NameServer passes to NameServer Neighbors (those with which it typically works) are not captured in this total. Any time the NameServer is restarted, this field will be reset to display a count relative to the NameServer’s most recent start time.</td>
</tr>
</tbody>
</table>
Table 28 identifies and describes the fields and their display-only details that appear in each AppService section of the **Operational Status** page. Many of these values originate from the configuration settings stored in the `ubroker.properties` file.

**Table 28: NameServer details on the Operational Status page**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requests Received</td>
<td>The number of client requests received for this Application Service. This count is maintained when one or more brokers are registered to support the Application Service. The count is reset when the Application Service is first identified to the NameServer.</td>
</tr>
<tr>
<td>Broker</td>
<td>The name of the broker that is capable of fulfilling the connection between the requesting client and the Application Service. When more than one broker is servicing the same Application Service, each new broker’s data is appended to the individual AppService details section.</td>
</tr>
<tr>
<td>Host</td>
<td>The broker’s host machine name and numeric address.</td>
</tr>
<tr>
<td>Weight</td>
<td>The priority weight assigned to the Unified Broker instance for the purpose of load balancing.</td>
</tr>
<tr>
<td>Requests Directed</td>
<td>The total number of client connection requests for the Application Service as directed by the NameServer to the broker instance. This count is maintained while the broker remains registered. If the broker is stopped or times out, the broker’s count is reset to zero when the broker next runs. There is a separate counter for each Application Service that the broker supports.</td>
</tr>
<tr>
<td>UUID</td>
<td>The unique number for the Unified Broker instance.</td>
</tr>
<tr>
<td>Port</td>
<td>The TCP/IP port number that the broker listens on to pick up client connection requests.</td>
</tr>
<tr>
<td>Timeout</td>
<td>The amount of time, in seconds, that elapses between the “keep alive” messages that the broker sends to the resource as part of a broker’s registration retry entry process.</td>
</tr>
</tbody>
</table>
Accessing and reviewing Informational views

The Properties link in the Informational views section allows you to access static configuration details about a specific NameServer instance.

To access and review Properties details:

1. From the grid frame for Resources, click the Edit icon to display the details page for the NameServer instance whose properties you want to review. See the “Accessing OpenEdge Management resource information” section on page 54 for the detailed steps.

2. Click Properties in the Informational views section to display the Static Configuration page:

```
<table>
<thead>
<tr>
<th>Properties</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>NameServer location: local</td>
</tr>
<tr>
<td></td>
<td>Host name: jupiter</td>
</tr>
<tr>
<td></td>
<td>Port number: 25007</td>
</tr>
<tr>
<td>General</td>
<td>Working directory: /usr1/beosgi/100a/wrk</td>
</tr>
<tr>
<td></td>
<td>Broker keep alive timeout: 30</td>
</tr>
<tr>
<td></td>
<td>Autostart: 1</td>
</tr>
<tr>
<td>Logging</td>
<td>Server log filename: /usr1/beosgi/100a/wrk/NS1.ns.log</td>
</tr>
<tr>
<td></td>
<td>Logging level: 2</td>
</tr>
<tr>
<td></td>
<td>Append to log file: 1</td>
</tr>
<tr>
<td>Advanced</td>
<td>Neighboring NameServers:</td>
</tr>
<tr>
<td>Environment</td>
<td>MYENV</td>
</tr>
</tbody>
</table>
```

This view comprises a single Properties section that shows fields and values previously defined in the ubroker.properties file. These values are derived at startup.
Table 29 describes the contents of this section.

Table 29: Properties details on the Static Configuration page (1 of 2)

<table>
<thead>
<tr>
<th>This field . . .</th>
<th>Displays . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location</strong></td>
<td>The specific values that pertain to these fields:</td>
</tr>
<tr>
<td></td>
<td>• <strong>NameServer location</strong> — Indicates whether the NameServer is <em>local</em> or <em>remote</em>. A local service identifies a NameServer instance that runs locally on the selected host. A remote service runs remotely on a network machine that is separate from the selected host.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Host name</strong> — Identifies the name of the host machine.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Port number</strong> — Identifies the number of the UDP port that the NameServer uses to listen for client connection requests and registration messages from AppServers and Transaction Servers.</td>
</tr>
<tr>
<td><strong>General</strong></td>
<td>The specific values that pertain to these fields:</td>
</tr>
<tr>
<td></td>
<td>• <strong>Working directory</strong> — Identifies the NameServer working directory, including the pathname.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Broker keep alive timeout</strong> — Identifies a value, in seconds, that indicates how often the NameServer should check for Unified Broker instances that have timed out.</td>
</tr>
<tr>
<td></td>
<td>When a Unified Broker instance registers with a NameServer, the instance indicates how often it will send “keep-alive” messages by setting a registration retry value. Once a NameServer determines that it has not received a “keep-alive” message from a Unified Broker instance within the broker's registration retry time, the NameServer automatically unregisters the instance.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Autostart</strong> — Indicates whether the NameServer will start automatically when the controlling AdminServer starts. If the value 1 appears, the Autostart option is set. If the value zero appears, then the Autostart option is not set.</td>
</tr>
<tr>
<td><strong>Logging</strong></td>
<td>The specific values that pertain to these fields:</td>
</tr>
<tr>
<td></td>
<td>• <strong>Server log filename</strong> — Identifies the NameServer log filename, including the pathname.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Logging level</strong> — Shows one of three possible values to specify the amount of information to be written to the server log: Error only, Terse, or Verbose.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Append to log file</strong> — Indicates if a new NameServer log file is created when the NameServer is started. A 1 indicates that log entries will be appended to the existing NameServer log file.</td>
</tr>
</tbody>
</table>
Table 29: Properties details on the Static Configuration page (2 of 2)

<table>
<thead>
<tr>
<th>This field . . .</th>
<th>Displays . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced</td>
<td>The specific value that pertains to the optional field <strong>Neighboring NameServers</strong>. This field identifies a list of selected NameServers to which this NameServer can forward connection requests for Application Services that are not registered with it (that is, the Application Service name is unknown).</td>
</tr>
<tr>
<td>Environment</td>
<td>The specific NameServer environment variables that are defined for the process in which the NameServer executes.</td>
</tr>
</tbody>
</table>
Managing DataServer Data

This chapter presents OpenEdge Management features and functionality related to the DataServers for ODBC, Oracle, and MS SQL Server, as outlined in the following sections:

- DataServer overview
- Reviewing DataServer broker status
- Modifying DataServer control settings
- Accessing and reviewing DataServer-related log file data
- Using the DataServer log file viewers
DataServer overview

OpenEdge Management supports a variety of tasks that you can perform to manage a DataServer, including:

- Reviewing your current operating status and associated details, as described in the “Reviewing DataServer broker status” section on page 157
- Modifying broker-related control settings, such as starting and stopping a broker, as described in the “Modifying DataServer control settings” section on page 158
- Accessing and viewing broker- and server-specific data collected through log files, as described in the “Accessing and reviewing DataServer-related log file data” section on page 165
- Monitoring and managing DataServer brokers using monitoring plans and rules, as described in the “Using the DataServer log file viewers” section on page 171

You must have appropriate OpenEdge Management role authorization to perform several of these tasks. See the “Role authorization and OpenEdge Management tasks” section on page 46 for details.

You can also use OpenEdge Management to configure DataServer properties. For details, see OpenEdge Management and OpenEdge Explorer: Configuration.

ODBC, Oracle, and MS SQL Server DataServers

OpenEdge Management allows you to work with instances of ODBC, Oracle, and MS SQL Server DataServer resources. For the purposes of this book, the information and procedures provided refer to DataServers generically. Unless noted otherwise, all information and procedures are the same for each of the DataServers, despite the fact that accompanying graphics might use one particular DataServer or another for purposes of illustration.
Reviewing DataServer broker status

The **Status** section of the **DataServer** Details page, shown in **Figure 25**, summarizes current operational details about the DataServer broker.

| Container: nbhydpinge967e | Host: nbhydpinge967e | Broker: Not Running |

**Figure 25:** Oracle DataServer Status section

**Table 30** describes each of the DataServer broker details in the **Status** section of the Details page.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
<td>The host machine’s name.</td>
</tr>
<tr>
<td>Broker</td>
<td>The running status of the broker. Possible values are:</td>
</tr>
<tr>
<td></td>
<td>• <strong>ACTIVE</strong> — The broker is currently running.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Not Running</strong> — The broker is not currently running.</td>
</tr>
<tr>
<td></td>
<td>The broker can also report <strong>Starting</strong> and <strong>Shutting Down</strong> values; however, depending on the speed of the machine on which your management console is running, you may not see these intermediary states.</td>
</tr>
</tbody>
</table>

The values that appear in the **Status** section are obtained either from the **ubroker.properties** file or the current, real-time status of the broker (if it is running).
Modifying DataServer control settings

The **Command and control** section of the **DataServer** Details page allows you to:

- Start and stop the DataServer broker, and change its associated property settings
- Obtain and review DataServer-related data collected through broker- and server-specific log files associated with this instance
- Monitor and manage DataServer brokers using monitoring plans and rules
- Configure the DataServer’s properties

**Figure 26** shows the **Command and control** section of the **DataServer** Details page.

**Table 26** identifies where you can find information about other functionality related to the DataServer **Command and control** section.

**Table 31:** Additional DataServer information

<table>
<thead>
<tr>
<th>For DataServer-related details about . . .</th>
<th>See . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broker and server log file monitors and viewers</td>
<td>The “Accessing and reviewing DataServer-related log file data” section on page 165</td>
</tr>
<tr>
<td>Broker monitoring plans and rules</td>
<td>Chapter 11, “Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters”</td>
</tr>
<tr>
<td>Broker rule sets</td>
<td>The “Customizing a DataServer broker log file monitor” section on page 168</td>
</tr>
<tr>
<td>Configuration</td>
<td><em>OpenEdge Management and OpenEdge Explorer: Configuration</em></td>
</tr>
</tbody>
</table>
DataServer Control page content

The DataServer Control page summarizes details about a specific DataServer broker resource. From this page, you can start and stop a DataServer broker, and change some broker-related properties, as needed. Figure 27 shows the DataServer Control page.

![DataServer Control page screenshot](image)

**Figure 27: DataServer Control page**

**Broker summary**

The Broker summary section presents read-only values for these fields: the broker name, its host machine’s name, associated port number and process identification number (PID), the broker’s current status, and the operating mode.

Note the following additional details about these fields:

- The Broker name, Host (machine name), Port (number), and Operating mode fields display values as they are defined in the `ubroker.properties` file.

- The Broker PID and Status fields reflect real-time values based on the broker’s current status. The Broker PID is also a link to more broker process details. See the “Viewing broker process details” section on page 161 for additional information.

**Properties**

The Properties section displays the status of the Enabled option, which indicates that this broker resource recognizes a monitoring plan and its associated rules when the broker resource is active.

During the discovery process, all DataServer brokers that OpenEdge Management discovers and lists in the list frame under the appropriate DataServer category are enabled by default. Once a broker is enabled, OpenEdge Management uses the OpenEdge Management-supplied default values to establish a monitoring plan and rules. (You can customize the plan and rules at any time.)

A check mark associated with a property indicates that the property is set.
Changing DataServer broker controls

This section describes how to change DataServer broker controls.

To change the DataServer Broker's property settings:

1. From the grid frame for Resources, click the Edit icon to display the details page for the DataServer broker instance whose property settings you want to change. See the “Accessing OpenEdge Management resource information” section on page 54 for the detailed steps.

2. Click Control in the Command and control section to display the Control page, as shown:

   ![Control page screenshot]

You can make the following changes:

- To change the current setting of the Enabled property, click Edit. Then select or deselect the Enabled property to add or remove the check mark. You must also restart the DataServer broker so that the property change is recognized.

  **Note:** A check mark appears to indicate that the Enabled property is set. To clear this option, click the check mark in the box associated with the option. The check mark is deleted to indicate that the option is no longer set.

- To change the current setting of the Broker statistics available property displayed in the Broker Summary section of the DataServer Control page, see the “Data collection details” section on page 73.

- To exit this page without changing any values and return to the DataServer Details page, click either Back in the browser, or the DataServer broker instance link on the breadcrumb trail.

You can also change the DataServer broker controls by starting or stopping the broker instance. To start or stop a DataServer broker instance, see the “Starting or Stopping OpenEdge resources” section on page 55.
Viewing broker process details

You can also access real-time details and statistics that provide you with snapshot information about an individual broker at the point you access this information from the DataServer Control page. Review this information to help you assess a broker’s performance.

To access broker processing details:

1. From the grid frame for Resources, click the Edit icon to display the details page for the DataServer broker instance whose processing details you want to view. See the “Accessing OpenEdge Management resource information” section on page 54 for the detailed steps.

2. Click Control in the Command and control section to display the DataServer Control page, as shown:
3. Click the unique PID number associated with the Broker PID field to display a Broker PID page. This page contains summary and real-time statistics about the broker, as shown:

![Broker PID page screenshot]

The two sections that comprise the Broker PID page present relevant information about the DataServer broker and its current operations:

- The Process summary section identifies the Process name and Process start time. User id and Group id values appear when UNIX-based data is shown. The Parent pid identifies the identifier number associated with the process that spawned this current process.

- The Process statistics section presents details about the broker’s real-time operational status. Values presented without parentheses identify that the processing time determined since the last scheduled polling interval, as noted, has occurred. Values presented within parentheses have been calculated based on information obtained since the start of the process.

Table 32 identifies and describes the fields of information presented in the Process statistics section.

### Table 32: Process statistics section real-time operational data (1 of 2)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident size</td>
<td>The physical size of the process as defined by the host system</td>
</tr>
<tr>
<td>Virtual size</td>
<td>The virtual size of the process as defined by the host system</td>
</tr>
<tr>
<td>CPU</td>
<td>The percentage of time spent using the CPU in either the user or kernel mode since the last scheduled poll</td>
</tr>
</tbody>
</table>
Killing a DataServer broker process

You might want to manually terminate a DataServer process when:

- A broker process hangs.
- You determine from the available data that a broker process is a runaway process.

The specific **PID** in the Broker summary section of the DataServer Control page allows you to access the page to kill the offending process.

When either of the previously listed circumstances exists and you want to manually terminate a broker process, use this command:

```
kill -9
```

The description of the signal for the kill process is as follows:

- **Signal Name** — SIGKILL
- **Signal Number** — 9
- **Signal Description** — Kill program

**Note:** OpenEdge Management references the specific **PID** and its associated date and time start details to be sure of a process’ identity before it attempts to kill the process.
To initiate a kill process:

1. Click Broker PID associated with the server process you want to terminate. The specific Broker PID page appears, as shown:

```
To initiate a kill process:

1. Click Broker PID associated with the server process you want to terminate. The specific Broker PID page appears, as shown:

Note that the two sections on this page present relevant summary information about this broker and its current operational status. See the “Viewing broker process details” section on page 161 for details about this data.

2. Click Kill to terminate this process. (Alternatively, you can click Cancel at the top of the page to exit the page without terminating the process.)

OpenEdge Management will prompt you once again to ensure that you want to terminate this process. Click OK.

OpenEdge Management displays a final status page that identifies the status of your kill request. OpenEdge Management displays one of the following messages:

- **Process xxxxx has been terminated** — This message indicates that the process was successfully killed. The PID number previously associated with this process is now available for the operating system to reassign.

- **Process xxxxx cannot be killed at this time** — This message indicates that the process could not be killed. In very rare instances, it is possible that you will not be successful in an attempt to kill a process. You can retry the kill process procedure; however, it is possible that the process will persist for any number of unknown reasons.

- **Process xxxxx has been reused** — OpenEdge Management has determined that the process PID number and associated time and date stamp do not match the values that the operating system has stored for this same process. Consequently, when you click Kill, the process cannot be destroyed.
```
Accessing and reviewing DataServer-related log file data

OpenEdge Management supports log file monitors and associated viewers for the following DataServer resources:

- An individual DataServer broker
- The DataServers associated with the broker

Log files can store a tremendous amount of data. Therefore, monitoring and analyzing data collected within these files might help you to better determine performance expectations related to brokers and DataServers.

This section presents information related to both types of DataServer log file monitors. However, only the procedures specific to an DataServer broker log file monitor and its associated viewer are presented. These same procedures will work with a DataServer server log file monitor. For more general information about OpenEdge Management log file monitor features and functionality, see OpenEdge Management: Resource Monitoring.

**Note:** Log file monitors are not available for either remote DataServer brokers or their associated DataServers.

Getting started with log files for DataServer resources

For each local DataServer broker that OpenEdge Management discovers, OpenEdge Management supports monitoring its two associated log file monitors. OpenEdge Management provides a log file resource monitor for the DataServer broker itself and another for its associated DataServer server. Each of these log file monitors has its own log file monitoring capabilities.

The DataServer log file resource monitors are not enabled until the DataServer for which the resource monitors were created is started. When the log file monitor first starts monitoring either a DataServer broker or DataServers, it always starts at the end of the log file.

**Naming conventions**

OpenEdge Management prepends the broker’s name to the name of the broker and server log file monitors and viewers. (Note that there are no server logs created by default.) For example, OpenEdge Management generates the following log file monitor and associated viewer names for a DataServer broker instance named orabroker1 and the container named vesta:

- vesta.orabroker1BrokerLogFileMonitor
- vesta.orabroker1 Oracle DataServer Log File Contents

You cannot change these names.
Characteristics of DataServer resource log file monitors

Data that you can capture and view using the DataServer resource log file monitors and viewers can help you:

- Ensure the integrity of these log files by monitoring files for errors and allowing you to define actions that trigger when errors occur.

- Use predefined DataServer-related search criteria, or create your own, to run against the data in these log files. OpenEdge Management predefines search criteria to support the broker and server log file monitors.

Figure 28 shows an excerpt of the Search Criteria subcategories, including the DataServer Broker and DataServer Server links to the predefined search criteria.

![Library - Search Criteria](image)

You can create and maintain the search criteria for each of the DataServer resources in the following two locations:

- At the DataServer resource local file monitor instance level. The search text and type are not shareable at this level. See the “Customizing a DataServer broker log file monitor” section on page 168 for details.

- At the OpenEdge Management Component Library level under the DataServer subcategory. The search text and type are shareable at this level. See the “Working with rule sets” section on page 256 for details.

Specifically, the predefined search criteria provide:

- Detailed data about the recorded operations of a DataServer broker or DataServer

- A means by which you can extract detailed data
DataServer log file monitor default values

Once a DataServer is enabled, OpenEdge Management creates log file monitors for any discovered brokers and their associated DataServers, using several default values. Of all the default DataServer log file monitor properties, you can modify only its description. However, you have several options regarding the Search Criteria you can use for the log file monitor. See the “Customizing a DataServer broker log file monitor” section on page 168 for details.

The default values are as follows:

- **The Bookmark** is set to **Last Line**, and it is unique.

- **The On First Poll property** is set to **Search From End**.

For detailed information about the Bookmark feature and **On First Poll** property as they relate to log file monitors in general, see *OpenEdge Management: Resource Monitoring*.

Reviewing predefined log file monitor search criteria

Each log file provides predefined search criteria that address common DataServer broker- or DataServer-related events. Use these searches as defined, or copy and customize them. Review the predefined search criteria before you customize a DataServer log file monitor.

**Note:** It is recommended that you not edit or delete the predefined criteria.

To review predefined log file monitor search criteria:

1. Click **Library** from the menu bar.

2. Click the plus (+) icon next to **Search Criteria** in the list frame to expand this category.
3. Click either **DataServer Broker** or **DataServer Server** in the list frame. A list of predefined search criteria related to the category that you selected appears in the detail frame. For example, the following screen shows the **DataServer Broker** default search criteria:

![DataServer Broker default search criteria](image)

**Note:** You can also create your own search criteria to address a particular error for which you want to monitor a DataServer. See the “Customizing a DataServer broker log file monitor” section on page 168 for details.

---

**Customizing a DataServer broker log file monitor**

You can customize a DataServer broker log file monitor or server log file monitor.

To customize a DataServer broker log file monitor:

1. From the grid frame for Resources, click the Edit icon to display the details page for the DataServer broker instance whose log file monitor you want to customize. See the “Accessing OpenEdge Management resource information” section on page 54.

2. Click **Log File Monitor of Broker** in the **Command and control** section on the **DataServer** details page. The **Log File Monitor** summary monitoring page for the DataServer broker you selected appears:

![Log File Monitor summary monitoring page](image)
3. Customize or view the contents of a DataServer broker log file monitor as follows:
   • Click **Add Plan** to add an existing monitoring plan to this resource monitor.
   • Click **Edit** at the top of the page to change the description of the log file monitor.
   • Click **Log File Viewer** at the top of the page to view the contents of the log file monitor.

**Note:** OpenEdge Management prevents the assignment of schedules that share days or times that overlap. For example, if you have a **Default_Schedule** set up for a resource monitor, you cannot set up an additional plan because the **Default_Schedule** is defined for 7 days a week, 24 hours a day. You must modify or remove the **Default_Schedule** to set up additional plans.

4. To add individual rules, click **Edit** within the **Monitoring Plans** section to view the edit page for the log file monitor.

5. Click **Add Rule** under the **Rules selected for this plan** section of the broker monitoring plan page. You can add a rule that is already defined and/or create a new rule.

6. To use a DataServer broker rule already defined in the library:
   a. Select **DataServer Broker** from the drop-down list associated with the **Choose Criteria Category**.
   b. Select the appropriate value from the drop-down list associated with **Choose Search Criteria**.

7. To create a new DataServer broker rule:
   a. Click **Create Criterion** to display the **Create Search Criterion** page.
   b. Enter values in the required fields: **Name** (identifies the name of the search criteria you are creating) and **Search Text** (identifies the information you are looking for in the log).
   c. Select the search type: **Literal Search** or **Regular Expression**.
   d. Choose whether to use an existing category or use a new category for the rule. Then select the **DataServer Broker** category.
   e. Click **Save**. The **Create Log File Rule** page reappears.

   The values you defined and selected to create a rule on the **Create Search Criterion** page are now available on the **Create Log File Rule** page. The **Choose Search Category** drop-down list shows the name you entered in the **Name** field on the **Create Search Criterion** page. The **Choose Criteria Category** drop-down list shows the category in which you elected to store the new rule.
8. Select the appropriate values from the **Severity** and **On Alert Action Perform** drop-down lists to complete the alert severity and action definition that you want to associate with this rule.

9. Click **Save**.

10. To add another individual rule, repeat **Step 5** through **Step 9**.

11. Click **Select Rule Sets** to create a new log file rule or choose from existing rule sets to add to the monitoring plan. If you choose **Select Rule Sets**, you can pick from a list of predefined rule sets to add to the monitoring plan. Then click **Save**.

12. Click the DataServer instance’s link on the breadcrumb trail to view the DataServer broker’s monitoring plan page showing the rules section updated with the new rules.

For more information about editing search criteria for rules, see the appropriate sections of *OpenEdge Management: Resource Monitoring*.

---

**Note:** You can copy the default DataServer log file rule set, but you cannot delete or rename it.
Using the DataServer log file viewers

To view the contents of each DataServer log file, access the viewer associated with each individual log file.

The log file viewer allows you to examine the contents of a DataServer-related log file through an HTML interface. You can access these log file viewers from either of the following locations:

- Click the link in the Command and Control section of the DataServer Details page. Click Log File Viewer of Broker to view the broker’s file contents and click Log File Viewer of Servers to view the DataServer’s file contents.

- Click the Log File Viewer button that appears at the top of the log file monitor summary monitoring page.

Figure 29 presents the DataServer broker log file viewer, which is showing the contents of a DataServer broker log file.

![Figure 29: DataServer Broker log file viewer](image)

The following information helps you to use the DataServer log file viewer:

- Use the Show field to control how many DataServer log file entries appear at one time. The number entered into the Show field cannot be less than 10.

- Use the Overlap field to control how many entries are repeated from screen to screen.

**Note:** The value in the Overlap field must not be more than the number in the Show field minus one. For example, if you show 30 entries, you can overlap only 29 or fewer of them.
Click **Reload** after changing the values in either the **Show** field or the **Overlap** field. Note that OpenEdge Management will prompt you to click **Reload**. The warning message that reads **changed, reload needed** appears in the **File log status** field in the **log file summary** section of the page.

If you do not reload, the viewer displays the previous values.

Click **Go To** to control which numbered entry in the log file the viewer begins its display with. For example, a value of **10** entered into the **Go To** field will begin the display from the tenth log file entry.

**Note:** You must click **Go To** after entering a value in the **Go To** field, or the viewer will not update its display.

The default display of entries is in ascending order. Choose **Descending** to change the display. Note that the **Show** field dictates the number of entries shown, whether they appear in ascending or descending order.

Click **First** to display the first \(x\) entries, where \(x\) is the value in the **Show** field.

Click **Prior** to display the previous \(x\) entries, where \(x\) is the value in the **Show** field.

Click **Next** to display the next \(x\) entries, where \(x\) is the value in the **Show** field.

Click **Last** to display the last \(x\) entries, where \(x\) is the value in the **Show** field.

To view additional log file entries without changing your current starting log file entry, leave the **Go To** field blank, change the value in the **Show** field, and click **Reload**.
Refreshing log file data

Periodically refresh log file data. Select the Refresh page icon from the toolbar for either the list or detail frame to repaint an existing page. You can also set a default value that OpenEdge Management uses to automatically refresh the management console.

To set a default value that OpenEdge Management uses to automatically refresh the management console, select Options → User Preferences → Automatically refresh pages.

Refresh data to avoid the following situations:

- OpenEdge Management considers a viewer that has been inactive for more than four hours stale. Once a viewer becomes stale, OpenEdge Management releases ninety-five percent of any memory being held. If you try to use a stale viewer, OpenEdge Management automatically reloads the file. Because additional resource activity might have occurred during the viewer’s inactivity, the reloaded log file view might not match the previous log file view of that resource.

- OpenEdge Management considers a viewer that has been inactive for forty-eight hours dead. Once a viewer dies, OpenEdge Management releases all of its memory. To return to the log file displayed in a dead view, you must renavigate to it, regardless of whether you pinned up the view or saved a link to it before the viewer died.
Managing AppServer Internet Adapter Data

This chapter presents OpenEdge Management features and functionality related to the AppServer Internet Adapter, as outlined in the following sections:

- AppServer Internet Adapter overview
- Working with AppServer Internet Adapter control settings
- Accessing and reviewing AppServer Internet Adapter log file data
- Using the AppServer Internet Adapter log file viewer
OpenEdge Management supports a variety of tasks that you can perform to manage an AppServer Internet Adapter (AIA), including:

- Working with AppServer Internet Adapter control settings
- Accessing and reviewing AppServer Internet Adapter log file data
- Using the AppServer Internet Adapter log file viewer

You must have appropriate OpenEdge Management role authorization to perform several of these tasks. See the "Role authorization and OpenEdge Management tasks" section on page 46 for details.

Configuring AppServer Internet Adapter properties

You can also use OpenEdge Management to configure AIA instance properties. For details, see OpenEdge Management and OpenEdge Explorer: Configuration.
Working with AppServer Internet Adapter control settings

The Command and control section of the AppServer Internet Adapter Details page for an AIA instance allows you to:

- Enable or disable the AIA instance.
- Obtain and review AIA instance-related data collected through the log file associated with this instance.
- Configure the AppServer’s properties.

Figure 30 shows the Command and control section of the AppServer Internet Adapter Details page.

Figure 30: Command and control section

Table 30 identifies where you can find information about other functionality related to the AppServer Command and control section.

Table 33: Additional AppServer Internet Adapter information

<table>
<thead>
<tr>
<th>For details about . . .</th>
<th>See . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log file monitoring plans and rules</td>
<td>The “Getting started with log files for AIA resources” section on page 179 and the “AppServer Internet Adapter log file monitor default values” section on page 181</td>
</tr>
<tr>
<td>Log file monitor rule sets</td>
<td>Chapter 11, “Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters”</td>
</tr>
<tr>
<td>Configuration</td>
<td>OpenEdge Management and OpenEdge Explorer: Configuration</td>
</tr>
</tbody>
</table>
AppServer Internet Adapter Control page content

The **AppServer Internet Adapter Control** page summarizes details about a specific AIA resource instance. From this page, you can enable or disable the AIA instance, and change some broker-related properties, as needed. **Figure 31** shows the **AppServer Internet Adapter Control** page.

![AppServer Internet Adapter Control page](image)

**Figure 31: AppServer Internet Adapter Control page**

**Adapter summary**

The **Adapter summary** section presents read-only values for these fields: the Adapter name and its host machine's name. Status data is not applicable to an AIA instance.

The **Adapter name** and **Host** (machine name) fields display values as they are defined in the `ubroker.properties` file.

**Properties**

The **Properties** section includes the **Enabled** option, which indicates that this resource instance's log file is being monitored.

During the discovery process, all AIA instances that OpenEdge Management discovers and lists in the list frame under the AppServer Internet Adapter category are enabled by default. Once an instance is enabled, OpenEdge Management uses the OpenEdge Management-supplied default values to establish a log file monitoring plan and rules. (You can customize the plan and rules at any time.)

A check mark associated with the **Enabled** option indicates that the option is selected. To deselect the option, click **Edit**. Clear the check mark, and click **Save**. Note that the **Enabled** option is the only item you can change on the **AppServer Internet Adapter Control** page.
Accessing and reviewing AppServer Internet Adapter log file data

OpenEdge Management supports log file monitors and associated viewers for the AppServer Internet Adapter. Log files can store a tremendous amount of data. Therefore, monitoring and analyzing data collected within these files might help you to better determine performance expectations related to AIA resource instances.

This section presents information related to the AppServer Internet Adapter log file monitor. For more general information about OpenEdge Management log file monitor features and functionality, see *OpenEdge Management: Resource Monitoring.*

**Note:** Log file monitors are not available for remote AppServer Internet Adapters.

Getting started with log files for AIA resources

For each local AppServer Internet Adapter instance that OpenEdge Management discovers, OpenEdge Management supports monitoring its log file monitor.

**Naming conventions**

OpenEdge Management prepends the AIA instance’s name to the name of the log file monitor and log file viewer. For example, OpenEdge Management generates `nbaspaudlidxp2.Aia1LogFileMonitor` as the log file monitor name for an AIA instance named *Aia1* and the container named `nbaspaudlidxp2`. The associated log file viewer name for this AIA instance is `nbaspaudlidxp2.Aia1 AppServer Internet Adapter Log File Contents`.

You cannot change these names.

**Characteristics of an AppServer Internet Adapter resource log file monitor**

Data that you can capture and view using the AIA resource log file monitor and viewer can help you:

- Ensure the integrity of these log files by monitoring files for errors and allowing you to define actions that trigger when errors occur.
- Use predefined AIA-related search criteria, or create your own, to run against the data in these log files. OpenEdge Management predefines search criteria to support the log file monitor.
Figure 32 shows an excerpt from the **Search Criteria** subcategories, including the **AppServer Internet Adapter** link to the predefined search criteria.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AppServer Internet Adapter</td>
<td></td>
</tr>
<tr>
<td>AppServer Broker</td>
<td></td>
</tr>
<tr>
<td>AppServer Server</td>
<td></td>
</tr>
<tr>
<td>Database</td>
<td></td>
</tr>
<tr>
<td>Messengers</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous</td>
<td></td>
</tr>
<tr>
<td>MSG DataServer Broker</td>
<td></td>
</tr>
<tr>
<td>MSS DataServer Server</td>
<td></td>
</tr>
<tr>
<td>NameServer</td>
<td></td>
</tr>
<tr>
<td>CDBC DataServer Broker</td>
<td></td>
</tr>
<tr>
<td>CDBC DataServer Server</td>
<td></td>
</tr>
<tr>
<td>CDB Replication</td>
<td></td>
</tr>
<tr>
<td>Oracle DataServer Broker</td>
<td></td>
</tr>
<tr>
<td>Oracle DataServer Server</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 32: Library Search criteria**

You can create and maintain the search criteria for each of the AIA resources in the following two locations:

- At the AppServer Internet Adapter resource local file monitor instance level. The search text and type are not shareable at this level. See the “Customizing an AppServer Internet Adapter log file monitor” section on page 183 for details.

- At the OpenEdge Management Component Library level under the **AppServer Internet Adapter** subcategory. The search text and type are shareable at this level. See Chapter 11, “Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters,” for details.

Specifically, the predefined search criteria provide:

- Detailed data about the recorded operations of an AIA instance
- A means by which you can extract detailed data
AppServer Internet Adapter log file monitor default values

Once an AIA instance is enabled, OpenEdge Management creates its log file monitor, using several default values. Of all the default AIA log file monitor properties, you can modify only its description. However, you have several options regarding the Search Criteria you can use for the log file monitor. See the “Customizing an AppServer Internet Adapter log file monitor” section on page 183 for details.

The default values are as follows:

- The **Bookmark** is set to **Last Line**, and it is unique.
- The **On First Poll** property is set to **Search From End**.

For detailed information about the Bookmark feature and **On First Poll** property as they relate to log file monitors in general, see *OpenEdge Management: Resource Monitoring*.

File Resource Defaults page

OpenEdge Management also supports a polling interval default value for the AIA log file monitor.

To display or update a polling interval default value:

1. From the Resources drop-down on the management console menu, click **Resource Monitoring Defaults**. The **Resource Monitor Defaults** page appears.

2. Click **File Resource Defaults**. The **File Resource Defaults** page appears.

3. Scroll down the **File Resource Defaults** page to display the **Log File Monitor** entry.

   You can modify the value or revert back to the original OpenEdge Management-supplied default value set for the **Polling Interval** field at any time by clicking **Restore Defaults**.
Reviewing predefined log file monitor search criteria

Each log file provides predefined search criteria that address common AIA-related events. Use these searches as defined, or copy and customize them. Review the predefined search criteria before you customize an AIA log file monitor.

**Note:** It is recommended that you not edit or delete the predefined criteria.

**To review predefined log file monitor search criteria:**

1. Click **Library** from the management console menu bar.
2. Click the plus (+) icon next to **Search Criteria** in the list frame to expand this category.
3. Click **AppServer Internet Adapter in the list frame**. A list of predefined search criteria related to the category that you selected appears in the detail frame. The following screen shows a list of the **AppServer Internet Adapter** default search criteria:

   ![Library . Search Criteria . AppServer Internet Adapter](image)

   **Note:** You can also create your own search criteria to address a particular AIA error for which you want to monitor an AIA instance. See the "Customizing an AppServer Internet Adapter log file monitor" section on page 183 for details.
Customizing an AppServer Internet Adapter log file monitor

The following procedure describes how to customize an AIA log file monitor.

To customize an AIA log file monitor:

1. From the grid frame for Resources, click the Edit icon to display the details page for the AppServer Internet Adapter instance whose log file monitor you want to customize. See the “Accessing OpenEdge Management resource information” section on page 54.

2. Click Log File Monitor in the Command and control section. The Log File Monitor summary monitoring page for the AIA instance you selected appears:

   ![Log File Monitor summary monitoring page]

3. Customize or view the contents of an AIA log file monitor as follows:

   - Click Add Plan to add an existing monitoring plan to this resource monitor.
   - Click Edit at the top of the page to change the description of the log file monitor.
   - Click Log File Viewer at the top of the page to view the contents of the log file monitor.

   Note: OpenEdge Management prevents the assignment of schedules that share days or times that overlap. For example, if you have a Default Schedule set up for a resource monitor, you cannot set up an additional plan because the Default Schedule is defined for 7 days a week, 24 hours a day. You must modify or remove the Default Schedule to set up additional plans.

4. To add individual rules, click Edit within the monitoring plans section to view the edit page for the log file monitor.

5. Click Add Rule under the Rules selected for this plan section of the broker monitoring plan page. You can add rule that is already defined and/or create a new rule.
6. To use an AppServer Internet Adapter rule already defined in the library:
   a. Select AppServer Internet Adapter from the drop-down list associated with the Choose Criteria Category.
   b. Select the appropriate value from each drop-down list associated with Choose Search Criteria.

7. To create a new AppServer Internet Adapter rule:
   a. Click Create Criterion to display the Create Search Criterion page.
   b. Enter values in the required fields: Name (identifies the name of the search criteria you are creating) and Search Text (identifies the information you are looking for in the log).
   c. Select the search type: Literal Search or Regular Expression.
   d. Choose whether to use an existing category or use a new category for the rule. Then select the AppServer Internet Adapter category.
   e. Click Save. The Create Log File Rule page reappears.

   The values you defined and selected to create a rule on the Create Search Criterion page are now available on the Create Log File Rule page. The Choose Search Category drop-down list shows the name you entered in the Name field on the Create Search Criterion page. The Choose Criteria Category drop-down list shows the category in which you elected to store the new rule.

8. Select the appropriate values from the Severity and On Alert Action Perform drop-down lists to complete the alert severity and action definition that you want to associate with this rule.

9. Click Save.

10. To add another individual rule, repeat Step 5 through Step 9.

11. Click Select Rule Sets to create a new log file rule or choose from existing rule sets to add to the monitoring plan. If you choose Select Rule Sets, you can pick from a list of predefined rule sets to add to the monitoring plan.

12. Click Save.

13. Click the AIA instance’s link on the breadcrumb trail to view this AIA instance’s monitoring plan page showing the rules section updated with the new rules.

For more information about editing search criteria for rules, see the appropriate sections of OpenEdge Management: Resource Monitoring.

Note: You can copy the default AppServer Internet Adapter log file rule set, but you cannot delete or rename it.
Using the AppServer Internet Adapter log file viewer

The log file viewer allows you to examine the contents of an AIA-related log file through an HTML interface. You can access the log file viewer from the following two locations:

- Click the link in the Command and control section of the AppServer Internet Adapter Details page. Click Log File Viewer to view the file contents.
- Click the Log File Viewer button that appears at the top of the log file monitor summary monitoring page.

The following information helps you to use the AIA log file viewer:

- Use the **Show** field to control how many log file entries appear at one time. The number entered into the **Show** field cannot be less than 10.
- Use the **Overlap** field to control how many entries are repeated from screen to screen.

**Note:** The value in the **Overlap** field must not be more than the number in the **Show** field minus one. For example, if you show 30 entries, you can overlap only 29 or fewer of them.

- Click **Reload** after changing the values in either the **Show** field or the **Overlap** field. Note that OpenEdge Management will prompt you to click **Reload**. The warning message that reads **changed, reload needed** appears in the **File log status** field in the **log file summary** section of the page.

  If you do not reload, the viewer displays the previous values.

- Click **Go To** to control which numbered entry in the log file the viewer begins its display with. For example, a value of 10 entered into the **Go To** field will begin the display from the tenth log file entry.

**Note:** You must click **Go To** after entering a value in the **Go To** field, or the viewer will not update its display.

- The default display of entries is in ascending order. Choose **Descending** to change the display. Note that the **Show** field dictates the number of entries shown, whether they appear in ascending or descending order.
- Click **First** to display the first \( x \) entries, where \( x \) is the value in the **Show** field.
- Click **Prior** to display the previous \( x \) entries, where \( x \) is the value in the **Show** field.
- Click **Next** to display the next \( x \) entries, where \( x \) is the value in the **Show** field.
- Click **Last** to display the last \( x \) entries, where \( x \) is the value in the **Show** field.
- To view additional log file entries without changing your current starting log file entry, leave the **Go To** field blank, change the value in the **Show** field, and click **Reload**.
Refreshing log file data

Periodically refresh log file data. Select the Refresh page icon from the toolbar for either the list or detail frame to repaint an existing page. You can also set a default value that OpenEdge Management uses to automatically refresh the management console.

To set a default value that OpenEdge Management uses to automatically refresh the management console, select Options → User Preferences → Automatically refresh pages.

Refresh data to avoid the following situations:

- OpenEdge Management considers a viewer that has been inactive for more than four hours stale. Once a viewer becomes stale, OpenEdge Management releases ninety-five percent of any memory being held. If you try to use a stale viewer, OpenEdge Management automatically reloads the file. Because additional resource activity might have occurred during the viewer’s inactivity, the reloaded log file view might not match the previous log file view of that resource.

- OpenEdge Management considers a viewer that has been inactive for forty-eight hours dead. Once a viewer dies, OpenEdge Management releases all of its memory. To return to the log file displayed in a dead view, you must renavigate to it, regardless of whether you pinned up the view or saved a link to it before the viewer died.
Managing SonicMQ Adapter Data

This chapter presents OpenEdge Management features and functionality related to the SonicMQ Adapter, as outlined in the following sections:

- SonicMQ Adapter overview
- Reviewing SonicMQ Adapter broker status
- Modifying SonicMQ Adapter control settings
- Accessing and reviewing SonicMQ Adapter log file data
- Using the SonicMQ Adapter log file viewers
- Examining SonicMQ Adapter Operations views
SonicMQ Adapter overview

OpenEdge Management supports a variety of tasks that you can perform to manage a SonicMQ Adapter, including:

- Reviewing your current operating status and associated details
- Modifying broker-related control settings, such as starting and stopping a broker
- Accessing and viewing broker- and server-specific data collected through log files
- Monitoring and managing SonicMQ Adapter instances using monitoring plans and rules

You must have appropriate OpenEdge Management role authorization to perform several of the tasks. See the "Role authorization and OpenEdge Management tasks" section on page 46 for details.

Configuring SonicMQ Adapter properties

You can also use OpenEdge Management to configure SonicMQ Adapter properties. For details, see OpenEdge Management and OpenEdge Explorer: Configuration.
Reviewing SonicMQ Adapter broker status

The **SonicMQ Adapter Status** section of the **SonicMQ Adapter** Details page summarizes current operational details about the SonicMQ Adapter broker. Figure 33 shows the **SonicMQ Adapter Status** section.

![Figure 33: SonicMQ Adapter Status section](image)

Table 34 describes each of the SonicMQ Adapter broker details in the **SonicMQ Adapter Status** section of the **SonicMQ Adapter** Details page.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
<td>The host machine’s name.</td>
</tr>
<tr>
<td>Broker</td>
<td>The running status of the broker. Possible values are:</td>
</tr>
<tr>
<td></td>
<td>- <strong>ACTIVE</strong> — The broker is currently running.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Not Running</strong> — The broker is not currently running.</td>
</tr>
<tr>
<td></td>
<td>The broker can also report <strong>Starting</strong> and <strong>Shutting Down</strong> values; however, depending on the speed of the machine on which your management console is running, you might not see these intermediary states.</td>
</tr>
</tbody>
</table>

The values that appear in the **SonicMQ Adapter Status** section are obtained either from the **ubroker.properties** file or the current, real-time status of the broker (if it is running).
Modifying SonicMQ Adapter control settings

The Command and control section of the SonicMQ Adapter Details page for an SonicMQ Adapter broker allows you to:

- Start and stop the SonicMQ Adapter broker, and change its associated property settings.
- Obtain and review SonicMQ Adapter-related data collected through broker- and server-specific log files associated with this instance.
- Monitor and manage SonicMQ Adapter brokers using monitoring plans and rules.
- Configure the SonicMQ Adapter’s properties.

Figure 34 shows the Command and control section of the SonicMQ Adapter Details page.

Table 34 identifies where you can find information about other functionality related to the SonicMQ Adapter Command and control section.

<table>
<thead>
<tr>
<th>For details about . . .</th>
<th>See . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broker and server log file monitors and viewers</td>
<td>The “Accessing and reviewing SonicMQ Adapter log file data” section on page 197</td>
</tr>
<tr>
<td>Log file monitoring plans and rules</td>
<td>The “Customizing a SonicMQ Adapter broker log file monitor” section on page 201</td>
</tr>
<tr>
<td>Log file monitor rule sets</td>
<td>Chapter 11, “Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters”</td>
</tr>
<tr>
<td>Configuration</td>
<td>OpenEdge Management and OpenEdge Explorer: Configuration</td>
</tr>
</tbody>
</table>
SonicMQ Adapter Control

The SonicMQ Adapter Control page summarizes details about a specific SonicMQ Adapter broker resource. From this page, you can start and stop a SonicMQ Adapter broker, and change some broker-related properties, as needed. Figure 35 shows the SonicMQ Adapter Control page.

**Broker summary**

The Broker summary section presents read-only values for these fields: the broker name, its host machine’s name, associated port number and process identification number (PID), the broker’s current status, and the broker’s operating mode.

Note the following additional details about these fields:

- The Broker name, Host (machine name), Port (number), and Operating mode fields display values as they are defined in the ubroker.properties file.
- The Broker PID and Status fields reflect real-time values based on the broker’s current status. The Broker PID is also a link to more broker process details. See the “Viewing broker process details” section on page 193 for additional information.

**Properties**

The Properties section displays the status of the Enabled option, which indicates that this broker resource recognizes a monitoring plan and its associated rules when the broker resource is active.

During the discovery process, all SonicMQ Adapter brokers that OpenEdge Management discovers and lists in the list frame under the SonicMQ Adapter category are enabled by default. Once a broker is enabled, OpenEdge Management uses the OpenEdge Management-supplied default values to establish a monitoring plan and rules. (You can customize the plan and rules at any time.)

A check mark associated with a property indicates that the property is set. To deselect the option, click Edit. Clear the check mark, and click Save. Note that the Enabled option is the only item you can change on the SonicMQ Adapter Control page.
Changing SonicMQ Adapter controls

This section describes how to change SonicMQ Adapter controls.

To change the SonicMQ Adapter's property settings:

1. From the grid frame for Resources, click the Edit icon to display the details page for the SonicMQ Adapter instance whose property settings you want to customize. See the "Accessing OpenEdge Management resource information" section on page 54 for the detailed steps.

2. Click Control in the Command and control section to display the SonicMQ Adapter Control page, as shown:

   ![SonicMQ Adapter Control Page](image)

You can make the following changes:

- To change the current setting of the Enabled property, click Edit. Then select or deselect the Enabled property to add or remove the check mark. You must also restart the SonicMQ Adapter broker so that the property change is recognized.

  Note: A check mark appears to indicate that the Enabled property is set. To clear this option, click the check mark in the box associated with the option. The check mark is deleted to indicate that the option is no longer set.

- To change the current setting of the Broker statistics available property displayed in the Broker Summary section of the SonicMQ Adapter Control page, see the “Data collection details” section on page 73.

- To exit this page without changing any values and return to the SonicMQ Adapter Details page, click either Back in the browser, or the SonicMQ Adapter instance link on the breadcrumb trail.

You can also change the SonicMQ Adapter's broker controls by starting or stopping the broker instance. To start or stop a SonicMQ Adapter broker instance, see the “Starting or Stopping OpenEdge resources” section on page 55.
Viewing broker process details

You can access real-time details and statistics that provide you with snapshot information about an individual SonicMQ Adapter instance at the point you access this information from the Control page. Review this information to help you assess the instance’s performance.

To access broker processing details:

1. From the grid frame for Resources, click the Edit icon to display the details page for the SonicMQ Adapter instance whose processing details you want to view. See the “Accessing OpenEdge Management resource information” section on page 54 for the detailed steps.

2. Click Control in the Command and control section to display the SonicMQ Adapter Control page, as shown:

![SonicMQ Adapter Control page](image-url)
3. Click the unique PID number associated with the Broker PID field to display a Broker PID page.

This page contains summary and real-time statistics about the broker, as shown:

```
SonicMQ Adapter: nbbedasauli.onicMQ1
Oct 3, 2011 4:41:57 PM
Broker PID: 1568
```

The two sections that comprise the Broker PID page present relevant information about the SonicMQ Adapter and its current operations:

- The **Process summary** section identifies the Process name and Process start time. User id and Group id values appear when UNIX-based data is shown. The Parent pid identifies the identifier number associated with the process that spawned this current process.

- The **Process statistics** section presents details about the broker’s real-time operational status. Values presented without parentheses identify that the processing time determined since the last scheduled polling interval, as noted, has occurred. Values presented within parentheses have been calculated based on information obtained since the start of the process.
Table 36 identifies and describes the fields of information presented in the Process statistics section.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident size</td>
<td>The physical size of the process as defined by the host system.</td>
</tr>
<tr>
<td>Virtual size</td>
<td>The virtual size of the process as defined by the host system.</td>
</tr>
<tr>
<td>CPU</td>
<td>The percentage of time spent using the CPU in either the user or kernel mode since the last scheduled poll.</td>
</tr>
<tr>
<td>Weighted CPU</td>
<td>The percentage of time spent using the CPU in either the user or kernel mode since the last scheduled poll divided by the number of CPU processors on the system. <strong>Note:</strong> This value appears only when there is more than one CPU process on the system where the process is running.</td>
</tr>
<tr>
<td>User time</td>
<td>The amount of CPU time spent in the user mode since the last scheduled poll.</td>
</tr>
<tr>
<td>Kernel time</td>
<td>The amount of CPU time spent in the kernel mode since the last scheduled poll.</td>
</tr>
<tr>
<td>Process time</td>
<td>The sum of the values that appear in the User time and Kernel time fields.</td>
</tr>
</tbody>
</table>

Killing a SonicMQ Adapter broker process and threads

You might want to manually terminate a process when:

- A process hangs.
- You determine from the available data that a process is a runaway process.

The specific PID on the SonicMQ Adapter Control page allows you to access the page to kill the offending process.

When either of the previously listed circumstances exists and you want to manually terminate a broker process, use this command:

```
kill -9
```

The description of the signal for the kill process is as follows:

- **Signal Name** — SIGKILL
- **Signal Number** — 9
• **Signal Description** — Kill program

**Note:** OpenEdge Management references the specific PID and its associated date and time start details to be sure of a process’ identity before it attempts to kill the process.

---

**To initiate a kill process for the broker and threads:**

1. Click PID associated with the process you want to terminate. The specific SonicMQ Adapter Broker PID page appears.

   Note that the two sections on this page present relevant summary information about this SonicMQ Adapter instance and its current operational status. See the “Viewing broker process details” section on page 193 for details about this data.

2. Click **Kill** to terminate this process. (Alternatively, you can click **Cancel** at the top of the page to exit the page without terminating the process.)

   OpenEdge Management prompts you to ensure that you want to terminate this process. Click **OK**.

   OpenEdge Management displays a final status page that identifies the status of your kill request. OpenEdge Management displays one of the following messages:

   • **Process xxxx has been terminated** — This message indicates that the process was successfully killed. The PID number previously associated with this process is now available for the operating system to reassign.

   • **Process xxxx cannot be killed at this time** — This message indicates that the process could not be killed. In very rare instances, it is possible that you will not be successful in an attempt to kill a process. You can retry the kill process procedure; however, it is possible that the process will persist for any number of unknown reasons.

   • **Process xxxx has been reused** — OpenEdge Management has determined that the process PID number and associated time and date stamp do not match the values that the operating system has stored for this same process. Consequently, when you click **Kill**, the process cannot be destroyed.

3. Click **Cancel** at the top of the page to exit without terminating the process.
Accessing and reviewing SonicMQ Adapter log file data

OpenEdge Management supports log file monitors and associated viewers for SonicMQ Adapter resources. Log files can store a tremendous amount of data. Therefore, monitoring and analyzing data collected within these files might help you to better determine performance expectations and examine trends related to SonicMQ Adapters.

This section presents information related to both types of SonicMQ Adapter log file monitors: broker and server. However, only the procedures specific to an SonicMQ Adapter broker log file monitor and its associated viewer are presented. These same procedures work with a SonicMQ Adapter server log file monitor. For more general information about OpenEdge Management log file monitor features and functionality, see *OpenEdge Management: Resource Monitoring*.

Getting started with log files for SonicMQ Adapter resources

For each local SonicMQ Adapter broker that OpenEdge Management discovers, OpenEdge Management supports monitoring its two associated log file monitors. OpenEdge Management provides a log file resource monitor for the SonicMQ Adapter broker itself and another for its associated SonicMQ Adapter server. Each of these log file monitors has its own log file monitoring capabilities.

The SonicMQ Adapter log file resource monitors are not enabled until the SonicMQ Adapter for which the resource monitors were created is started. When the log file monitor first starts monitoring either an SonicMQ Adapter broker or SonicMQ Adapter server, it always starts at the end of the log file.

Naming conventions

OpenEdge Management prepends the broker’s name to the name of the broker and server log file monitors and viewers. For example, OpenEdge Management generates the following log file monitor and associated viewer names for a SonicMQ Adapter broker instance named *sonicMQ1* and the container named *nbaspauldixp2*:

- **Broker-related log file names** — Displays
  - nbaspauldixp2.sonicMQ1BrokerLogFileMonitor
  - nbaspauldixp2.sonicMQ1 SonicMQ Adapter Log File Contents

- **Server-related log file names** — Displays
  - nbaspauldixp2.sonicMQ1ServerLogFileMonitor
  - nbaspauldixp2.sonicMQ1 SonicMQ Adapter Server Log File Contents

You cannot change these names.
Characteristics of SonicMQ Adapter resource log file monitors

Data in SonicMQ Adapter resource log file monitors and viewers can help you:

- Ensure the integrity of these log files by monitoring files for errors and allowing you to define actions that trigger when errors occur.

- Use predefined SonicMQ Adapter-related search criteria, or create your own, to run against the data in these log files. OpenEdge Management predefines search criteria to support the broker and server log file monitors.

Figure 36 shows the Search Criteria subcategories, including the SonicMQ Adapter Broker and SonicMQ Adapter Server links to the predefined search criteria.

![Library Search Criteria](image)

You can create and maintain the search criteria for each of the SonicMQ Adapter resources in the following two locations:

- At the SonicMQ Adapter resource local file monitor instance level. The search text and type are not shareable at this level. See the “Customizing a SonicMQ Adapter broker log file monitor” section on page 201 for details.

- At the OpenEdge Management Component Library level under the SonicMQ Adapter subcategory. The search text and type are shareable at this level. See the “Working with rule sets” section on page 256 for details.

Specifically, the predefined search criteria provide:

- Detailed data about the recorded operations of a SonicMQ Adapter broker or server

- A means by which you can extract detailed data
SonicMQ Adapter log file monitor default values

Once a SonicMQ Adapter is enabled, OpenEdge Management creates log file monitors for any discovered brokers and their associated servers, using several default values. Of all the default SonicMQ Adapter log file monitor properties, you can modify only its description. However, you have several options regarding the Search Criteria you can use for the log file monitor. See the “Customizing a SonicMQ Adapter broker log file monitor” section on page 201 for details.

The default values are as follows:

- The SonicMQ Adapter default log file monitor is disabled until the SonicMQ Adapter is first started.

- The Bookmark is set to Last Line, and it is unique.

- The On First Poll property is set to Search From End.

For detailed information about the Bookmark feature and On First Poll property as they relate to log file monitors in general, see OpenEdge Management: Resource Monitoring.

File Resource Defaults page

OpenEdge Management also supports a polling interval default value for the SonicMQ Adapter broker log file monitor and the SonicMQ Adapter server log file monitor.

To display or update a polling interval default value:


4. To update the Polling Interval, type in a new value; then click Submit.

You can revert back to the original OpenEdge Management-supplied default value set for the Polling Interval field at any time by clicking Restore Defaults.
Reviewing predefined log file monitor search criteria

Each log file provides predefined search criteria that address common SonicMQ Adapter broker- or SonicMQ Adapter server-related events. Use these searches as defined, or copy and customize them. Review the predefined search criteria before you customize a SonicMQ Adapter log file monitor.

**Note:** It is recommended that you not edit or delete the predefined criteria.

To review predefined log file monitor search criteria:

1. Select Library from the menu bar.
2. Click the plus (+) icon next to Search Criteria in the list frame to expand this category.
3. Click either SonicMQ Adapter Broker or SonicMQ Adapter Server in the list frame. A list of predefined search criteria related to the category that you selected appears in the detail frame. For example, the following screen shows the SonicMQ Adapter Broker default search criteria:

![SonicMQ Adapter Broker default search criteria](image)

**Note:** You can also create your own search criteria to address a particular SonicMQ Adapter error for which you want to monitor a SonicMQ Adapter. See the “Customizing a SonicMQ Adapter broker log file monitor” section on page 201 for details.
Customizing a SonicMQ Adapter broker log file monitor

You can customize a SonicMQ Adapter broker log file monitor and a server log file monitor for a SonicMQ Adapter instance.

To customize a SonicMQ Adapter broker log file monitor:

1. From the grid frame for Resources, click the Edit icon to display the details page for the SonicMQ Adapter broker instance whose log file monitor you want to customize. See the “Accessing OpenEdge Management resource information” section on page 54.

2. Click Log File Monitor of Broker in the Command and control section on the SonicMQ Adapter details page. The Log File Monitor summary monitoring page for the SonicMQ Adapter broker you selected appears:

3. Customize or view the contents of a SonicMQ Adapter broker log file monitor as follows:
   - Click Add Plan to add an existing monitoring plan to this resource monitor.
   - Click Edit at the top of the page to change the description of the log file monitor.
   - Click Log File Viewer at the top of the page to view the contents of the log file monitor.

**Note:** OpenEdge Management prevents the assignment of schedules that share days or times that overlap. For example, if you have a Default Schedule set up for a resource monitor, you cannot set up an additional plan because the Default Schedule is defined for 7 days a week, 24 hours a day. You must modify or remove the Default Schedule to set up additional plans.

4. To add individual rules, click Edit within the Monitoring plans section to view the edit page for the log file monitor.

5. Click Add Rule under the Rules selected for this plan section of the broker monitoring plan page. You can add a rule that is already defined and/or create a new rule.
6. To use a SonicMQ Adapter broker rule already defined in the library:
   a. Select SonicMQ Adapter Broker from the drop-down list associated with the Choose Criteria Category.
   b. Select the appropriate value from the drop-down list associated with the Choose Search Criteria.

7. To create a new SonicMQ Adapter broker rule:
   a. Click Create Criterion to display the Create Search Criterion page.
   b. Enter values in the required fields: Name (identifies the name of the search criteria you are creating) and Search Text (identifies the information you are looking for in the log).
   c. Choose whether to use an existing category or use a new category for the rule. Then select the SonicMQ Adapter Broker category.
   d. Click Save. The Create Log File Rule page reappears.

   The values you defined and selected to create a rule on the Create Search Criterion page are now available on the Create Log File Rule page. The Choose Search Category drop-down list displays the name you entered in the Name field on the Create Search Criterion page. The Choose Criteria Category drop-down list displays the category in which you elected to store the new rule.

8. Select the appropriate values from the Severity and On Alert Action Perform fields to complete the alert severity and action definition that you want to associate with this rule.

9. Click Save.

10. To add another individual rule, repeat Step 5 through Step 9.

11. Click Select Rule Sets to create a new log file rule or choose from existing rule sets to add to the monitoring plan. If you choose Select Rule Sets, you can pick from a list of predefined rule sets to add to the monitoring plan.

12. Click the SonicMQ Adapter instance’s link on the breadcrumb trail to view this SonicMQ Adapter broker’s monitoring plan page showing the rules section updated with the new rules.

For more information about editing search criteria for rules, see the appropriate sections of *OpenEdge Management: Resource Monitoring*.

---

**Note:** You can copy the default SonicMQ Adapter log file rule set, but you cannot rename or delete it.
Using the SonicMQ Adapter log file viewers

To view the contents of each SonicMQ Adapter log file, access the viewer associated with each individual log file.

The log file viewer allows you to examine the contents of a SonicMQ Adapter log file through an HTML interface. You can access these log file viewers from the following two locations:

- Click the link in the **Command and control** section of the SonicMQ Adapter Details page. Click **Log File Viewer of Broker** to view the broker’s file contents and click **Log File Viewer of Servers** to view the SonicMQ Adapter server’s file contents.

- Click the **Log File Viewer** button that appears at the top of the log file monitor summary monitoring page.

Figure 37 presents the SonicMQ Adapter broker log file viewer, which is showing the contents of an SonicMQ Adapter broker log file.

![SonicMQ Adapter broker log file viewer](image)

The following information will help you use the SonicMQ Adapter log file viewer:

- Use the **Show** field to control how many SonicMQ Adapter log file entries appear at one time. The number entered into the **Show** field cannot be less than 10.

- Use the **Overlap** field to control how many entries are repeated from screen to screen.

**Note:** The value in the **Overlap** field must not be more than the number in the **Show** field minus one. For example, if you show 30 entries, you can overlap only 29 or fewer of them.
• Click **Reload** after changing the values in either the **Show** field or the **Overlap** field. Note that OpenEdge Management will prompt you to click **Reload**. The warning message that reads **changed, reload needed** appears in the **File log status** field in the **log file summary** section of the page.

If you do not reload, the viewer displays the previous values.

• Click **Go To** to control which numbered entry in the log file the viewer begins its display with. For example, a value of 10 entered into the **Go To** field will begin the display from the tenth log file entry.

**Note:** You must click **Go To** after entering a value in the **Go To** field, or the viewer will not update its display.

• The default display of entries is in ascending order. Choose **Descending** to change the display. Note that the **Show** field dictates the number of entries shown, whether they appear in ascending or descending order.

• Click **First** to display the first x entries, where x is the value in the **Show** field.

• Click **Prior** to display the previous x entries, where x is the value in the **Show** field.

• Click **Next** to display the next x entries, where x is the value in the **Show** field.

• Click **Last** to display the last x entries, where x is the value in the **Show** field.

• To view additional log file entries without changing your current starting log file entry, leave the **Go To** field blank, change the value in the **Show** field, and click **Reload**.

### Refreshing log file data

Periodically refresh log file data. Select the **Refresh** page icon from the toolbar for either the list or detail frame to repaint an existing page. You can also set a default value that OpenEdge Management uses to automatically refresh the management console.

To set a default value that OpenEdge Management uses to automatically refresh the management console, select **Options** → **User Preferences** → **Automatically refresh pages**. Refresh data to avoid the following situations:

• OpenEdge Management considers a viewer that has been inactive for more than four hours stale. Once a viewer becomes stale, OpenEdge Management releases ninety-five percent of any memory it holds. If you try to use a stale viewer, OpenEdge Management automatically reloads the file. Because additional resource activity might have occurred during the viewer’s inactivity, the reloaded log file view might not match the previous log file view of that resource.

• OpenEdge Management considers a viewer that has been inactive for forty-eight hours dead. Once a viewer dies, OpenEdge Management releases all of its memory. To return to the log file displayed in a dead view, you must renavigate to it, regardless of whether you pinned up the view or saved a link to it before the viewer died.
Examining SonicMQ Adapter Operations views

The SonicMQ Adapter Details page provides an Operations views section that allows you to access and review status data related to the performance of broker and server instances.

Figure 38 shows the Operations views section of the SonicMQ Adapter Details page.

![Operations views section](image)

Accessing and reviewing SonicMQ Adapter status

The SonicMQ Adapter Operations views section allows you to display status information about the SonicMQ Adapter broker’s performance and the state of the broker’s associated servers. Review this data frequently, as it will help you make informed decisions about your use of brokers and servers.

To display and review SonicMQ Adapter Operations views and status:

1. From the grid frame for Resources, click the Edit icon to display the details page for the SonicMQ Adapter broker instance whose status you want to review. See the “Accessing OpenEdge Management resource information” section on page 54 for the detailed procedure.

2. Click Status in the Operations views section. A page comprising two summary sections appears, as shown:

![Summary section](image)

<table>
<thead>
<tr>
<th>Server State</th>
<th>Port</th>
<th>nRqs</th>
<th>nRcvs</th>
<th>nSent</th>
<th>Start Date</th>
<th>Last Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVAILABLE</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Jan 17, 2009 14:58</td>
<td>Jan 17, 2009 14:58</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Jan 17, 2009 14:58</td>
<td>Jan 17, 2009 14:58</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Jan 17, 2009 14:58</td>
<td>Jan 17, 2009 14:58</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Jan 17, 2009 14:58</td>
<td>Jan 17, 2009 14:58</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Jan 17, 2009 14:58</td>
<td>Jan 17, 2009 14:58</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Jan 17, 2009 14:58</td>
<td>Jan 17, 2009 14:58</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Jan 17, 2009 14:58</td>
<td>Jan 17, 2009 14:58</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Jan 17, 2009 14:58</td>
<td>Jan 17, 2009 14:58</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Jan 17, 2009 14:58</td>
<td>Jan 17, 2009 14:58</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Jan 17, 2009 14:58</td>
<td>Jan 17, 2009 14:58</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Jan 17, 2009 14:58</td>
<td>Jan 17, 2009 14:58</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Jan 17, 2009 14:58</td>
<td>Jan 17, 2009 14:58</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Jan 17, 2009 14:58</td>
<td>Jan 17, 2009 14:58</td>
</tr>
</tbody>
</table>
Data summary sections

The summarized, read-only text data on this page consists of two sections. Data in these text boxes is determined when the page is initialized or refreshed.

The **Summary** sections provide the details identified in Table 37.

**Table 37: SonicMQ Adapter data summary (1 of 2)**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
<td>The machine on which the server is running.</td>
</tr>
<tr>
<td>Broker Name</td>
<td>The name of the broker whose status you are viewing.</td>
</tr>
<tr>
<td>Operating Mode</td>
<td>The operating mode shows as Stateless. You cannot modify this field.</td>
</tr>
<tr>
<td>Broker Status</td>
<td>The current state of the broker.</td>
</tr>
<tr>
<td>Broker Port</td>
<td>The TCP/IP port number that the broker listens to.</td>
</tr>
<tr>
<td>Broker PID</td>
<td>The process ID of the broker.</td>
</tr>
<tr>
<td>Active Servers</td>
<td>The number of running servers.</td>
</tr>
<tr>
<td>Busy Servers</td>
<td>The number of servers handling client requests.</td>
</tr>
<tr>
<td>Locked Servers</td>
<td>The number of servers handling a bound connection.</td>
</tr>
<tr>
<td>Available Servers</td>
<td>The number of servers available to handle broker requests.</td>
</tr>
<tr>
<td>Active Clients (now, peak)</td>
<td>The number of active clients at the present time and the peak number.</td>
</tr>
<tr>
<td>Client Queue Depth (cur, max)</td>
<td>The number of clients waiting for brokers to become available to service their request. The current value (cur) represents the number of waiting clients at the moment the status is displayed, and the maximum value (max) represents the largest number of clients waiting concurrently since the server was started.</td>
</tr>
<tr>
<td>Total Requests</td>
<td>The total number of requests.</td>
</tr>
<tr>
<td>Req Wait (max, avg)</td>
<td>The request wait time.</td>
</tr>
<tr>
<td>Req Duration (max, avg)</td>
<td>The duration of the request.</td>
</tr>
<tr>
<td>Svr#</td>
<td>The particular server number.</td>
</tr>
<tr>
<td>State</td>
<td>The current state of the server process.</td>
</tr>
<tr>
<td>Port</td>
<td>The TCP/IP port number used by the server.</td>
</tr>
<tr>
<td>nRq</td>
<td>The number of messages sent to the server.</td>
</tr>
<tr>
<td>nRcvd</td>
<td>The number of messages received by the server.</td>
</tr>
<tr>
<td>nSent</td>
<td>The number of requests sent by the server.</td>
</tr>
</tbody>
</table>
Table 37: SonicMQ Adapter data summary

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Started</td>
<td>The time stamp indicating when the server process started.</td>
</tr>
<tr>
<td>Last Change</td>
<td>The time stamp indicating when the server process last changed execution state.</td>
</tr>
</tbody>
</table>
Managing Web Services Adapter Data

This chapter presents OpenEdge Management features and functionality related to the Web Services Adapter, as outlined in the following sections:

- Web Services Adapter overview
- Reviewing Web Services Adapter status
- Modifying Web Services Adapter control settings
- Accessing and reviewing Web Services Adapter log file data
- Using the Web Services Adapter log file viewer
- Examining Web Services Adapter Operations views
Web Services Adapter overview

OpenEdge Management supports a variety of tasks that you can perform to manage a Web Services Adapter instance, including:

- Reviewing the adapter instance’s current operating status and associated details
- Enabling or disabling the adapter instance
- Accessing and viewing adapter data collected through log files
- Monitoring and managing Web Services Adapter instances using monitoring plans and rules

You must have appropriate OpenEdge Management role authorization to perform several of the tasks. See the "Role authorization and OpenEdge Management tasks" section on page 46 for details.

Configuring Web Services Adapter properties

You can also use OpenEdge Management to configure Web Services Adapter properties. For details, see OpenEdge Management and OpenEdge Explorer: Configuration.
Reviewing Web Services Adapter status

The Web Services Adapter Status section of the Web Services Adapter Details page provides a brief status for the Web Services Adapter. Figure 39 shows the Status section.

<table>
<thead>
<tr>
<th>WebServices Adapter status</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host: NBSPAULIDIXP2</td>
<td></td>
</tr>
<tr>
<td>Adapter: N/A</td>
<td></td>
</tr>
</tbody>
</table>

Figure 39: Web Services Adapter Status section

Table 38 describes each of the Web Services Adapter details in the Web Services Adapter Status section of the Web Services Adapter Details page.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
<td>The host machine’s name.</td>
</tr>
</tbody>
</table>
| Adapter | The running status of the adapter. Possible values are:  
  • ACTIVE — The adapter is currently running.  
  • Not Running — The adapter is not currently running. |

The values that appear in the Web Services Adapter Status section are obtained either from the ubroker.properties file or the current, real-time status of the adapter (if it is running).
Modifying Web Services Adapter control settings

The Command and control section of the Web Services Adapter Details page for an adapter instance allows you to perform various tasks, such as:

- Start and stop the Web Services Adapter instance, and change its associated property settings
- Obtain and review Web Services Adapter-related data collected through a log file associated with this instance
- Monitor and manage Web Services Adapters using monitoring plans and rules
- Log in to or log off from the Web server
- Configure the Web Services Adapter’s properties

Figure 40 shows the Command and control section of the Web Services Adapter Details page.

<table>
<thead>
<tr>
<th>Command and control</th>
<th>Monitoring Plans</th>
<th>Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>Adapter connections on which to alert</td>
<td>Property file configuration associated with this adapter</td>
</tr>
<tr>
<td>Configuration Advisor</td>
<td>Log File Monitor</td>
<td>Log file monitors on which to alert</td>
</tr>
<tr>
<td>Log File Viewer</td>
<td>Log file monitors on which to alert</td>
<td>Configuration</td>
</tr>
<tr>
<td>Logs</td>
<td>Log file monitors on which to alert</td>
<td>Configuration</td>
</tr>
<tr>
<td>Log</td>
<td>Log file monitors on which to alert</td>
<td>Configuration</td>
</tr>
<tr>
<td>Import</td>
<td>Log file monitors on which to alert</td>
<td>Configuration</td>
</tr>
<tr>
<td>Export</td>
<td>Log file monitors on which to alert</td>
<td>Configuration</td>
</tr>
</tbody>
</table>

Figure 40: Command and control section

Table 40 identifies where you can find information about other functionality related to the Web Services Adapter Command and control section.

Table 39: Additional Web Services Adapter information

<table>
<thead>
<tr>
<th>For details about . . .</th>
<th>See . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log file monitors and viewers</td>
<td>The “Accessing and reviewing Web Services Adapter log file data” section on page 214</td>
</tr>
<tr>
<td>Log file monitoring plans and rules</td>
<td>The “Customizing a Web Services Adapter log file monitor” section on page 217</td>
</tr>
<tr>
<td>Log file monitor rule sets</td>
<td>Chapter 11, “Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters”</td>
</tr>
<tr>
<td>Configuration, deployment, and general administration</td>
<td>OpenEdge Management and OpenEdge Explorer: Configuration</td>
</tr>
</tbody>
</table>
Web Services Adapter Control

The Web Services Adapter Control page summarizes details about a specific Web Services Adapter resource. From this page, you can start and stop a Web Services Adapter and change some related properties, as needed.

The following sections describe the two areas of the Web Services Adapter Control page.

Adapter summary

The Adapter summary section presents read-only values for these fields: the adapter name, its host machine’s name, the adapter’s current status, and the adapter’s URL.

Note that the Adapter name and Host (machine name) display values as they are defined in the ubroker.properties file.

Properties

The Properties section displays the status of the Enabled option. When selected, this option indicates that the adapter resource recognizes a monitoring plan and its associated rules when the resource is active.

During the discovery process, all Web Services Adapter instances that OpenEdge Management discovers and lists in the list frame under the Web Services Adapter category are enabled by default. Once an adapter is enabled, OpenEdge Management uses the OpenEdge Management-supplied default values to establish a monitoring plan and rules. (You can customize the plan and rules at any time.)

A check mark associated with the Enabled option indicates that the option is selected. To deselect the option, click Edit. Clear the check mark, and click Save. Note that the Enabled option is the only item you can change on the Web Services Adapter Control page.

Logging in to or logging off from the Web server

If your Web server requires that you log in, click Login in the Command and control section of the Web Services Adapter Details page. Type your user name and user password, and click Submit.
## Accessing and reviewing Web Services Adapter log file data

OpenEdge Management supports log file monitors and associated viewers for Web Services Adapter resources. Log files can store a tremendous amount of data. Therefore, monitoring data collected within these files might help you to better determine performance expectations related to Web Services Adapters.

For more general information about OpenEdge Management log file monitor features and functionality, see *OpenEdge Management: Resource Monitoring*.

**Note:** Log file monitors are not available for remote Web Services Adapters.

## Getting started with log files for Web Services Adapter resources

For each local Web Services Adapter instance that OpenEdge Management discovers, OpenEdge Management supports monitoring its associated log file monitor. A Web Services Adapter log file resource monitor is not enabled until the Web Services Adapter for which the resource monitor was created is started. When the log file monitor first starts monitoring a Web Services Adapter instance, it always starts at the end of the log file.

### Naming conventions

OpenEdge Management prepends the adapter’s name to the name of a log file monitor and its associated viewer. For example, OpenEdge Management generates the following log file monitor for a Web Services Adapter instance named `wsa1` and the container named `nbaspauldixp2`: `nbaspauldixp2.wsa1LogFileMonitor`. The associated log file viewer is named `nbaspauldixp2.wsa1 Web Services Adapter Log File Contents`.

You cannot change these names.

## Characteristics of Web Services Adapter resource log file monitors

Data that you can capture and view using Web Services Adapter resource log file monitors and viewers can help you:

- Ensure the integrity of the log files by monitoring files for errors and allowing you to define actions that trigger when errors occur.

- Use predefined Web Services Adapter-related search criteria, or create your own, to run against the data in these log files. OpenEdge Management predefines search criteria to support log file monitors.
You can create and maintain the search criteria for each Web Services Adapter resource instance in the following two locations:

- At the Web Services Adapter resource local file monitor instance level. The search text and type are not shareable at this level.

- At the OpenEdge Management Component Library level under the Web Services Adapter subcategory. The search text and type are shareable at this level.

See the “Customizing a Web Services Adapter log file monitor” section on page 217 for details.

The predefined search criteria provide:

- Detailed data about the recorded operations of a Web Services Adapter instance

- A means for extracting detailed data

**Web Services Adapter log file monitor default values**

Once a Web Services Adapter is enabled, OpenEdge Management creates its log file monitor using several default values. Of all the default Web Services Adapter log file monitor properties, you can modify only its description. However, you have several options regarding the Search Criteria you can use for the log file monitor. See the “Customizing a Web Services Adapter log file monitor” section on page 217 for details.

The default values are as follows:

- The Web Services Adapter default log file monitor is disabled until the Web Services Adapter is first started.

- The **Bookmark** is set to **Last Line**, and it is unique.

- The **On First Poll** property is set to **Search From End**.

For detailed information about the Bookmark feature and **On First Poll** property as they relate to log file monitors in general, see *OpenEdge Management: Resource Monitoring*.
File Resource Defaults

OpenEdge Management also supports a polling interval default value for the Web Services Adapter log file monitor.

To display or update a polling interval default value:


You can revert back to the original OpenEdge Management-supplied default value set for the Polling Interval field at any time by clicking Restore Defaults.

Reviewing predefined log file monitor search criteria

Each log file provides predefined search criteria that address common Web Services Adapter events. Use these searches as defined, or copy and customize them. Review the predefined search criteria before you customize a Web Services Adapter log file monitor.

**Note:** It is recommended that you not edit or delete the predefined criteria.

To review predefined log file monitor search criteria:

1. Click Library from the management console menu bar.
2. Click the plus (+) icon next to Search Criteria in the list frame to expand this category.
3. Click **Web Services Adapter** in the list frame. A list of predefined search criteria related to the category that you selected appears in the detail frame. The following screen shows the **Web Services Adapter** default search criteria:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client Operation Unauthorized</td>
<td>The client operation is not authorized.</td>
</tr>
<tr>
<td>ERROR</td>
<td>Any Error Message</td>
</tr>
<tr>
<td>Exception</td>
<td>Any JAVA Exception Message</td>
</tr>
<tr>
<td>Failed Authentication to Service</td>
<td>The user failed authentication to a WSA service.</td>
</tr>
<tr>
<td>Failed Authorization to Service</td>
<td>The user failed authorization to a WSA service.</td>
</tr>
<tr>
<td>Reset Default Properties WSA</td>
<td>This message reports a successful reset of WSA properties to their default.</td>
</tr>
<tr>
<td>Runtime Statistics Reset</td>
<td>A message stating the runtime statistics have been reset for WSA.</td>
</tr>
<tr>
<td>Successfully Managed WSA</td>
<td>This message reports a successful request from woman to WSA. (Information)</td>
</tr>
<tr>
<td>Successfully Reset Statistics</td>
<td>This message reports a successful resetting of WSA statistics.</td>
</tr>
<tr>
<td>Successfully Set WSA property</td>
<td>A message that a WSA property was successfully set. (Information)</td>
</tr>
<tr>
<td>Unable Connect AppServer</td>
<td>The WSA service was unable to connect to the specified AppServer.</td>
</tr>
<tr>
<td>WSA Application Disabled</td>
<td>A message stating that a WSA application has been Disabled.</td>
</tr>
<tr>
<td>WSA Application Enabled</td>
<td>A message stating that a WSA application has been enabled.</td>
</tr>
<tr>
<td>WSA Application Exported</td>
<td>A message stating that a WSA application has been exported.</td>
</tr>
<tr>
<td>WSA Application Imported</td>
<td>A message stating that a WSA application has been imported.</td>
</tr>
<tr>
<td>WSA Application Not Found</td>
<td>This message reports a request for an application that was not found.</td>
</tr>
<tr>
<td>WSA Application Reset</td>
<td>A message stating that a WSA application properties has been reset to default values.</td>
</tr>
<tr>
<td>WSA Application Updated</td>
<td>A message stating that a WSA application has been updated.</td>
</tr>
<tr>
<td>WSA Modified By Outside Source</td>
<td>This is a critical error, where the WSA was modified by an outside source and we are disabling the service.</td>
</tr>
<tr>
<td>WSA Status Message</td>
<td>This message lists a status change in the WSA.</td>
</tr>
</tbody>
</table>

**Note:** You can also create your own search criteria to address a particular Web Services Adapter error. See the "Customizing a Web Services Adapter log file monitor" section on page 217 for details.

### Customizing a Web Services Adapter log file monitor

This section describes how to customize a Web Services Adapter log file monitor.

**To customize a Web Services Adapter log file monitor:**

1. From the grid frame for Resources, click the Edit icon to display the details page for the Web Services Adapter broker instance whose log file monitor you want to customize. See the "Accessing OpenEdge Management resource information" section on page 54.

2. Click **Log File Monitor** on the **Web Services Adapter** Details page. The **Log File Monitor** summary monitoring page appears.
3. Customize or view the contents of an Web Services Adapter log file monitor as follows:

   • Click **Add Plan** to add an existing monitoring plan to this resource monitor.
   • Click **Edit** at the top of the page to change the description of the log file monitor.
   • Click **Log File Viewer** at the top of the page to view the contents of the log file monitor.

   **Note:** OpenEdge Management prevents the assignment of schedules that share days or times that overlap. For example, if you have a **Default Schedule** set up for a resource monitor, you cannot set up an additional plan because the **Default Schedule** is defined for 7 days a week, 24 hours a day. You must modify or remove the **Default Schedule** to set up additional plans.

4. To add individual rules, click **Edit** within the monitoring plans section to view the edit page for the log file monitor.

5. Click **Add Rule** under the **Rules selected for this plan** section of the monitoring plan page. You can add a rule that is already defined and/or create a new rule.

6. To use a Web Services Adapter rule already defined in the library:

   a. Select **Web Services Adapter** from the drop-down list associated with the **Choose Criteria Category**.
   b. Select the appropriate value from the drop-down list associated with the **Choose Search Criteria**.

7. To create a new Web Services Adapter rule:

   a. Click **Create Criterion** to display the **Create Search Criterion** page.
   b. Enter values in the required fields: **Name** (identifies the name of the search criteria you are creating) and **Search Text** (identifies the information you are looking for in the log).
   c. Choose whether to use an existing category or use a new category for the rule. Then select the **Web Services Adapter** category.
   d. Click **Save**. The **Create Log File Rule** page reappears.

   The values you defined and selected to create a rule on the **Create Search Criterion** page are now available on the **Create Log File Rule** page. The **Choose Search Category** drop-down list displays the name you entered in the **Name** field on the **Create Search Criterion** page. The **Choose Criteria Category** drop-down list displays the category in which you elected to store the new rule.
8. Select the appropriate values from the **Severity** and **On Alert Action Perform** drop-down lists to complete the alert severity and action definition that you want to associate with this rule.

9. Click **Save**.

10. To add another individual rule, repeat Step 5 through Step 9.

11. Click **Select Rule Sets** to create a new log file rule or choose from existing rule sets to add to the monitoring plan. If you choose **Select Rule Sets**, you can pick from a list of predefined rule sets to add to the monitoring plan.

12. Click **Save**.

13. Click the Web Services Adapter broker instance’s link on the breadcrumb trail to display the broker’s detail page again.

14. Click **Log File Monitor** again to view the new rules updated in the **Rules Summary**.

For more information about editing search criteria for rules, see the appropriate sections of *OpenEdge Management: Resource Monitoring*.

**Note:** You can copy the default Web Services Adapter log file rule set, but you cannot rename or delete it.
Using the Web Services Adapter log file viewer

To view the contents of a Web Services Adapter log file, access the viewer associated with each individual log file.

The log file viewer allows you to examine the contents of a Web Services Adapter log file through an HTML interface. You can access a log file viewer from the following two locations:

- Click the Log File Viewer link in the Command and control section of the Web Services Adapter Details page.
- Click the Log File Viewer button that appears at the top of the log file monitor summary monitoring page.

The following information will help you use the Web Services Adapter log file viewer:

- Use the Show field to control how many Web Services Adapter log file entries appear at one time. The number entered into the Show field cannot be less than 10.
- Use the Overlap field to control how many entries are repeated from screen to screen.

**Note:** The value in the Overlap field must not be more than the number in the Show field minus one. For example, if you show 30 entries, you can overlap only 29 or fewer of them.

- Click Reload after changing the values in either the Show field or Overlap field. Note that OpenEdge Management will prompt you to click Reload. The warning message that reads changed, reload needed appears in the File log status field in the log file summary section of the page.

If you do not reload, the viewer displays the previous values.

- Click Go To to control which numbered entry in the log file the viewer begins its display with. For example, a value of 10 entered into the Go To field will begin the display from the tenth log file entry.

**Note:** You must click Go To after entering a value in the Go To field, or the viewer will not update its display.

- The default display of entries is in ascending order. Choose Descending to change the display. Note that the Show field dictates the number of entries shown, whether they appear in ascending or descending order.
- Click First to display the first x entries, where x is the value in the Show field.
- Click Prior to display the previous x entries, where x is the value in the Show field.
Using the Web Services Adapter log file viewer

- Click **Next** to display the next $x$ entries, where $x$ is the value in the **Show** field.
- Click **Last** to display the last $x$ entries, where $x$ is the value in the **Show** field.
- To view additional log file entries without changing your current starting log file entry, leave the **Go To** field blank, change the value in the **Show** field, and click **Reload**.

**Refreshing log file data**

Periodically refresh log file data. Select the **Refresh** page icon from the toolbar for either the list or detail frame to repaint an existing page. You can also set a default value that OpenEdge Management uses to automatically refresh the management console.

To set a default value that OpenEdge Management uses to automatically refresh the management console, select **Options** → **User Preferences** → **Automatically refresh pages**.

Refresh data to avoid the following situations:

- OpenEdge Management considers a viewer that has been inactive for more than four hours stale. Once a viewer becomes stale, OpenEdge Management releases ninety-five percent of any memory being held. If you try to use a stale viewer, OpenEdge Management automatically reloads the file. Because additional resource activity might have occurred during the viewer’s inactivity, the reloaded log file view might not match the previous log file view of that resource.

- OpenEdge Management considers a viewer that has been inactive for forty-eight hours dead. Once a viewer dies, OpenEdge Management releases all of its memory. To return to the log file displayed in a dead view, you must renavigate to it, regardless of whether you pinned up the view or saved a link to it before the viewer died.
Examining Web Services Adapter Operations views

The Web Services Adapter Details page provides an Operations views section that allows you to access and review status data related to the performance of the following:

- **Status** — Web Services Adapter status information
- **Statistics** — Web Services Adapter run-time statistics information
- **Run-time properties** — Web Services Adapter run-time properties information

Accessing and reviewing Web Services Adapter status

The Web Services Adapter Operations views section allows you to display status information about the Web Services Adapter’s performance. Review this data frequently, as it will help you make informed decisions about your use of the Web Services Adapter.

To display and review Web Services Adapter status:

1. From the grid frame for Resources, click the Edit icon to display the details page for the Web Services Adapter broker instance whose status you want to review. See the “Accessing OpenEdge Management resource information” section on page 54 for the detailed procedure.

2. Click Status in the Operations views section. The following status details appear:
   - Whether the WSA instance is running
   - Whether access to administrative functions, Web service applications (by clients), and WSDL document retrieval is enabled

Accessing and reviewing Web Services Adapter statistics

You can view statistical details about a Web Services Adapter instance.

To access and review Web Services Adapter statistics:

1. From the grid frame for Resources, click the Edit icon to display the details page for the Web Services Adapter broker instance whose statistics you want to review. See the “Accessing OpenEdge Management resource information” section on page 54 for the detailed procedure.

2. Under Operations views, click Statistics.

3. Review the statistics details. For more information about the statistics, see the relevant section in OpenEdge Management and OpenEdge Explorer: Configuration.
Accessing and reviewing Web Services Adapter run-time properties

You can temporarily change some Web Services Adapter (WSA) instance properties at run time without restarting your Java servlet engine (JSE). This is most useful for testing and debugging. The next time you restart your JSE, these settings revert to the current configuration settings for these properties in the `ubroker.properties` file.

To change WSA instance run-time properties:

1. From the grid frame for Resources, click the Edit icon to display the details page for the Web Services Adapter broker instance whose runtime properties you want to change.

2. Under the Operations views section, click Run-time Properties.

3. Review the run-time properties. For more information about the properties, see the relevant section in OpenEdge Management and OpenEdge Explorer: Configuration.
Managing WebSpeed Messenger Data

This chapter presents OpenEdge Management features and functionality related to WebSpeed Messengers, as outlined in the following sections:

- Messenger overview
- Working with Messenger control settings
- Accessing and reviewing Messenger log file data
- Using the Messenger log file viewer
Chapter 10: Managing WebSpeed Messenger Data

Messenger overview

The WebSpeed Messenger resides on your Web server machine. It picks up incoming application service requests from WebSpeed clients and directs them to a WebSpeed broker that supports that application service. The Messenger is either a CGI program, or an ISAPI or NSAPI process.

There are four different WebSpeed Messengers:

- **CGIIP Messenger** — Runs on almost all Web servers, but tends to have the slowest response times.
- **WSASP Messenger** — Is used to call WebSpeed applications from a Microsoft Active Server Page. It cannot coexist with any other Messenger on your Web server.
- **WSISA Messenger** — Runs on Microsoft IIS Web servers.
- **WSNSA Messenger** — Runs on Netscape Web servers.

You cannot create or delete WebSpeed Messengers from OpenEdge Management. You can use OpenEdge Management to edit the Messenger's properties, enable or disable the Messenger, use work with the Messenger's log file monitor, and examine the Messenger's log file.

You must have appropriate OpenEdge Management role authorization to perform several of these tasks. See the “Role authorization and OpenEdge Management tasks” section on page 46 for details.

Configuring WebSpeed Messenger properties

You can also use OpenEdge Management to configure WebSpeed Messenger properties. For details, see *OpenEdge Management and OpenEdge Explorer: Configuration*.

CGIIP, WSASP, WSISA, and WSNSA Messengers

OpenEdge Management allows you to work with instances of WebSpeed Messengers. For the purposes of this book, the information and procedures provided refer to any of the four supported Messengers. Unless noted otherwise, all information and procedures are the same for each of the Messengers, despite the fact that accompanying graphics might use one particular Messenger or another for purposes of illustration.
Working with Messenger control settings

The **Command and control** section of the **Messenger** instance’s Details page allows you to:

- Enable or disable the instance.
- Obtain and review Messenger instance-related data collected through the log file associated with this instance.
- Configure the Messenger’s properties.

**Figure 41** shows the **Command and control** section of a **Messenger** instance’s Details page.

**Table 41** identifies where you can find information about other functionality related to the AppServer **Command and control** section.

**Table 40:** Additional Messenger information

<table>
<thead>
<tr>
<th>For details about . . .</th>
<th>See . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log file monitoring plans and rules</td>
<td>The &quot;Getting started with log files for Messenger resources&quot; section on page 229 and the &quot;Messenger log file monitor default values&quot; section on page 231</td>
</tr>
<tr>
<td>Log file monitor rule sets</td>
<td>Chapter 11, “Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters”</td>
</tr>
<tr>
<td>Configuration</td>
<td>OpenEdge Management and OpenEdge Explorer: Configuration</td>
</tr>
</tbody>
</table>
Messengers Control

The Messengers Control page summarizes details about a specific Messenger instance. From this page, you can enable or disable the instance, and change some broker-related properties, as needed. Figure 42 shows the Messengers Control page.

Figure 42: Messengers Control page

Broker summary

The Broker summary section presents read-only values for these fields: the Broker name and its host machine’s name. Status data is not applicable to a Messenger instance.

The Broker name and Host (machine name) fields display values as they are defined in the ubroker.properties file.

Properties

The Properties section includes the Enabled option, which indicates that the log file monitor is being monitored.

During the discovery process, all Messenger instances that OpenEdge Management discovers and lists in the list frame under the Messengers category are enabled by default. Once an instance is enabled, OpenEdge Management uses its default values to establish a log file monitoring plan and rules. (You can customize the plan and rules at any time.)

A check mark associated with the Enabled option indicates that the option is selected. To deselect the option, click Edit. Clear the check mark, and click Save. Note that the Enabled option is the only item you can change on the Messenger Control page.
Accessing and reviewing Messenger log file data

OpenEdge Management supports log file monitors and associated viewers for Messenger instances. Log files can store a tremendous amount of data. Therefore, monitoring and analyzing data collected within these files might help you to better determine performance expectations related to Messenger resource instances.

This section presents information related to the Messenger log file monitor. For more general information about OpenEdge Management log file monitor features and functionality, see OpenEdge Management: Resource Monitoring.

**Note:** Log file monitors are not available for remote Messengers.

Getting started with log files for Messenger resources

OpenEdge Management provides a log file monitor for each local Messenger instance that it discovers.

**Naming conventions**

OpenEdge Management prepends the Messenger instance’s name to the name of the log file monitor and log file viewer. For example, OpenEdge Management generates `nbasapauldixp2.CGIIPLogFileMonitor` as the log file monitor name for a Messenger instance named `CGIIP` and the container named `nbasapauldixp2`. The associated log file viewer name for this Messenger instance is `nbasapauldixp2.CGIIP Messengers Log File Contents`.

You cannot change these names.

Characteristics of a Messenger resource log file monitor

Data that you can capture and view using the Messenger resource log file monitor and viewer can help you:

- Ensure the integrity of these log files by monitoring files for errors and allowing you to define actions that trigger when errors occur.
- Use predefined Messenger-related search criteria, or create your own, to run against the data in these log files. OpenEdge Management predefines search criteria to support the log file monitor.
Figure 43 shows an excerpt from the Search Criteria subcategories, including the Messengers link to the predefined search criteria.

![Library Search Criteria](image)

You can create and maintain the search criteria for each of the Messenger resources in the following two locations:

- At the Messenger resource local file monitor instance level. The search text and type are not shareable at this level. See the “Customizing a Messenger log file monitor” section on page 233 for details.

- At the OpenEdge Management Component Library level under the Messenger subcategory. The search text and type are shareable at this level.

Specifically, the predefined search criteria provide:

- Detailed data about the recorded operations of a Messenger instance

- A means by which you can extract detailed data
**Messenger log file monitor default values**

Once a Messenger instance is enabled, OpenEdge Management creates its log file monitor, using several default values. Of all the default Messenger log file monitor properties, you can modify only its description. However, you have several options regarding the Search Criteria you can use for the log file monitor. See the “Customizing a Messenger log file monitor” section on page 233 for details.

The default values are as follows:

- The **Bookmark** is set to **Last Line**, and it is unique.
- The **On First Poll** property is set to **Search From End**.

For detailed information about the Bookmark feature and **On First Poll** property as they relate to log file monitors in general, see *OpenEdge Management: Resource Monitoring*.

**File Resource Defaults**

OpenEdge Management also supports a polling interval default value for the Messenger log file monitor.

To display or update a polling interval default value:

1. From the Resources drop-down on the management console menu, click **Resource Monitoring Defaults**. The **Resource Monitor Defaults** page appears.
2. Click **File Resource Defaults**. The **File Resource Defaults** page appears.
3. Scroll down the **File Resource Defaults** page to display the **Log File Monitor** entry.

   You can modify the value or revert back to the original OpenEdge Management-supplied default value set for the **Polling Interval** field at any time by clicking **Restore Defaults**.

**Reviewing predefined log file monitor search criteria**

Each log file provides predefined search criteria that address common Messenger-related events. Use these searches as defined, or copy and customize them. Review the predefined search criteria before you customize a Messenger log file monitor.

**Note:** It is recommended that you not edit or delete the predefined criteria.
To review predefined log file monitor search criteria:

1. Click **Library** from the management console menu bar.

2. Click the plus (+) icon next to **Search Criteria** in the list frame to expand this category.

3. Click **Messengers in the list frame**. A list of predefined search criteria related to the category that you selected appears in the detail frame.

The following screen shows a list of the **Messengers** default search criteria:

![Library . Search Criteria . Messengers](image)

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bad Reply WebSpeed Agent</td>
<td>Disconnecting with no header on WebSpeed Agent output web stream.</td>
</tr>
<tr>
<td>Could Not Send Message</td>
<td>Failure sending WEB_CGIP_GET_PROG message.</td>
</tr>
<tr>
<td>Did Not Receive Message</td>
<td>Failed to receive header for the WEB_CGIP_GET_PROG message.</td>
</tr>
<tr>
<td>Disconnect No Available Agents</td>
<td>Disconnecting - all agents are currently busy, please try again later.</td>
</tr>
<tr>
<td>Failed Connect WebSpeed Agent</td>
<td>Failed to make connection to WebSpeed Agent.</td>
</tr>
<tr>
<td>Failed Connect WebSpeed Broker</td>
<td>Failed to connect to the specified WebSpeed named service.</td>
</tr>
<tr>
<td>Internal Command Access Denied</td>
<td>Internal command access denied.</td>
</tr>
<tr>
<td>Invalid URL String</td>
<td>URL contains invalid syntax.</td>
</tr>
<tr>
<td>Low System Resources</td>
<td>Internal error, memory allocation failure, low on virtual memory.</td>
</tr>
<tr>
<td>Network Connect Failed</td>
<td>ncpp connection attempt failed.</td>
</tr>
<tr>
<td>Network Error Connect Time Out</td>
<td>ncpp error - connection attempt timed out.</td>
</tr>
<tr>
<td>Network Error No Data To Read</td>
<td>ncpp error - no data to read.</td>
</tr>
<tr>
<td>Network Read Error</td>
<td>ncpp read error.</td>
</tr>
<tr>
<td>No Default WebSpeed Broker</td>
<td>Cannot find default service name to serve web request.</td>
</tr>
<tr>
<td>No WebSpeed Broker</td>
<td>The specified service name does not exist or has a bad format.</td>
</tr>
<tr>
<td>Unclassified Network Error</td>
<td>Other unclassified ncpp error.</td>
</tr>
<tr>
<td>Unknown Internal Command</td>
<td>Unknown internal command not executed.</td>
</tr>
<tr>
<td>WebSpeed Agent Did Not Send HTML</td>
<td>WebSpeed Agent did not return an HTML page.</td>
</tr>
</tbody>
</table>

**Note:** You can also create your own search criteria to address a particular error for which you want to monitor a Messenger instance. See the "Customizing a Messenger log file monitor" section on page 233 for details.
Customizing a Messenger log file monitor

You can customize a Messenger log file monitor.

To customize a Messenger log file monitor:

1. From the grid frame for Resources, click the Edit icon to display the details page for the Messenger instance whose log file monitor you want to customize. See the “Accessing OpenEdge Management resource information” section on page 54.

2. Click Log File Monitor in the Command and control section. The Log File Monitor summary monitoring page for the Messenger instance you selected appears.

3. Customize or view the contents of the Messenger log file monitor as follows:
   - Click Add Plan to add an existing monitoring plan to this resource monitor.
   - Click Edit at the top of the page to change the description of the log file monitor.
   - Click Log File Viewer at the top of the page to view the contents of the log file monitor.

   **Note:** OpenEdge Management prevents the assignment of schedules that share days or times that overlap. For example, if you have a Default_Schedule set up for a resource monitor, you cannot set up an additional plan because the Default_Schedule is defined for 7 days a week, 24 hours a day. You must modify or remove the Default_Schedule to set up additional plans.

4. To add individual rules, click Edit within the monitoring plans section to view the edit page for the log file monitor.

5. Click Add Rule under the Rules selected for this plan section of the broker monitoring plan page. You can add a rule that is already defined and/or create a new rule.

6. To use a Messenger rule already defined in the library:
   - Select Messengers from the drop-down list associated with the Choose Criteria Category.
   - Select the appropriate value from the drop-down list associated with the Choose Search Criteria.
7. To create a new Messenger broker rule:
   a. Click Create Criterion to display the Create Search Criterion page.
   b. Enter values in the required fields: Name (identifies the name of the search criteria you are creating) and Search Text (identifies the information you are looking for in the log).
   c. Choose whether to use an existing category or use a new category for the rule. Then select the Messengers category.
   d. Click Save. The Create Log File Rule page reappears.

The values you defined and selected to create a rule on the Create Search Criterion page are now available on the Create Log File Rule page. The Choose Search Category drop-down list displays the name you entered in the Name field on the Create Search Criterion page. The Choose Criteria Category drop-down list displays the category in which you elected to store the new rule.

8. Select the appropriate values from the Severity and On Alert Action Perform drop-down lists to complete the alert severity and action definition that you want to associate with this rule.

9. Click Save.

10. To add another individual rule, repeat Step 5 through Step 9.

11. Click Select Rule Sets to create a new log file rule or choose from existing rule sets to add to the monitoring plan. If you choose Select Rule Sets, you can pick from a list of predefined rule sets to add to the monitoring plan.

12. Click the Messenger instance link on the breadcrumb trail to display the details page again.

13. Click Log File Monitor again to view the new rules updated in the Rule Summary.

For more information about editing search criteria for rules, see the appropriate sections of OpenEdge Management: Resource Monitoring.

**Note:** You can copy the default Messenger log file rule set, but you cannot delete or rename it.
Using the Messenger log file viewer

The log file viewer allows you to examine the contents of a Messenger-related log file through an HTML interface. You can access the log file viewer from the following two locations:

- Click the link in the **Command and control** section of the **Messenger** instance’s Details page. Click **Log File Viewer** to view the file contents.
- Click the **Log File Viewer** button that appears at the top of the log file monitor summary monitoring page.

The following information helps you to use the Messenger log file viewer:

- Use the **Show** field to control how many log file entries appear at one time. The number entered into the **Show** field cannot be less than 10.
- Use the **Overlap** field to control how many entries are repeated from screen to screen.

**Note:** The value in the **Overlap** field must not be more than the number in the **Show** field minus one. For example, if you show 30 entries, you can overlap only 29 or fewer of them.

- Click **Reload** after changing the values in either the **Show** field or the **Overlap** field. Note that OpenEdge Management will prompt you to click **Reload**. The warning message that reads **changed, reload needed** appears in the **File log status** field in the **log file summary** section of the page.

  If you do not reload, the viewer displays the previous values.

- Click **Go To** to control which numbered entry in the log file the viewer begins its display with. For example, a value of 10 entered into the **Go To** field will begin the display from the tenth log file entry.

  **Note:** You must click **Go To** after entering a value in the **Go To** field, or the viewer will not update its display.

- The default display of entries is in ascending order. Choose **Descending** to change the display. Note that the **Show** field dictates the number of entries shown, whether they appear in ascending or descending order.
- Click **First** to display the first \( x \) entries, where \( x \) is the value in the **Show** field.
- Click **Prior** to display the previous \( x \) entries, where \( x \) is the value in the **Show** field.
- Click **Next** to display the next \( x \) entries, where \( x \) is the value in the **Show** field.
- Click **Last** to display the last \( x \) entries, where \( x \) is the value in the **Show** field.
- To view additional log file entries without changing your current starting log file entry, leave the **Go To** field blank, change the value in the **Show** field, and click **Reload**.
Refreshing log file data

Periodically refresh log file data. Select the Refresh page icon from the toolbar for either the list or detail frame to repaint an existing page. You can also set a default value that OpenEdge Management uses to automatically refresh the management console.

To set a default value that OpenEdge Management uses to automatically refresh the management console, select Options → User Preferences → Automatically refresh pages.

Refresh data to avoid the following situations:

- OpenEdge Management considers a viewer that has been inactive for more than four hours stale. Once a viewer becomes stale, OpenEdge Management releases ninety-five percent of any memory being held. If you try to use a stale viewer, OpenEdge Management automatically reloads the file. Because additional resource activity might have occurred during the viewer’s inactivity, the reloaded log file view might not match the previous log file view of that resource.

- OpenEdge Management considers a viewer that has been inactive for forty-eight hours dead. Once a viewer dies, OpenEdge Management releases all of its memory. To return to the log file displayed in a dead view, you must renavigate to it, regardless of whether you pinned up the view or saved a link to it before the viewer died.
You use OpenEdge Management’s monitoring capabilities to monitor OpenEdge server, DataServer, Messenger, and Adapter resources (as you do other resource types), as described in the following sections:

- OpenEdge Management resource monitoring overview
- Default polling and trend values
- Maintaining monitoring plans
- General rule conventions
- Understanding and using resource monitor rules
- Working with rule sets

For additional details about OpenEdge Management resource monitoring and resource monitoring plans, see OpenEdge Management: Resource Monitoring. For complete details about alerts, see OpenEdge Management: Alerts Guide and Reference.
OpenEdge Management resource monitoring overview

OpenEdge Management uses active monitoring plans and their associated rules to support many fundamental resource-related features. Depending on the particular resource, these features might include data trending, data analysis, rule evaluation, or alert notification.

When OpenEdge Management discovers any of the OpenEdge resource types, it automatically creates a resource monitoring plan. The values OpenEdge Management provides include a default name for the resource, and default values for each individual resource’s monitoring plan and its associated rule set.

For example, if OpenEdge Management discovers a NameServer resource whose server name is NS2, then it creates a monitoring plan called the NS2 monitoring plan and immediately associates the default NameServer rule set with NS2. (You can edit or modify any OpenEdge monitoring plan and rules, setting your own values at any time.)

Other recognizable resource types—database, system, network, and file resources, for example—also require monitoring plans and rules. All OpenEdge Management resources share standardized ways to perform monitoring operations and a common terminology with which to reference the resource activities.

Review the resource monitoring details provided in this section. This information will help orient you to the basics of resource monitoring. Then, follow the procedures outlined in the “Maintaining monitoring plans” section on page 245 and the “Understanding and using resource monitor rules” section on page 251 to use resource monitoring with server, DataServer, Messenger, and Adapter resources.

Key terms and definitions

This section highlights some important terms and concepts to help you immediately begin working with OpenEdge resource monitoring plans and rules. For more detailed information about this terminology, see OpenEdge Management: Resource Monitoring.

OpenEdge Management resource monitoring terms include:

- **Resource** — A specific component of your configuration, such as a server instance.

- **Resource monitoring** — Criteria set up to monitor a resource’s performance. As necessary, you can adjust the criteria according to your specific performance expectations.
Monitor — As specifically addressed in this guide, the combination of an OpenEdge resource, schedules, and rules. You can monitor any of these OpenEdge server-related resources:

- AppServer Internet Adapter log files
- AppServer brokers, broker log files, and server log files
- WebSpeed brokers, broker log files, and agent log files
- Messenger log files
- NameServers and NameServer log files
- DataServer brokers, broker log files, and server log files
- SonicMQ Adapter brokers, broker log files, and server log files
- Web Services Adapter log files

A schedule defines a block of time in OpenEdge Management (for example, weekdays), and a rule (for example, the ReregisteredBroker rule) determines how a resource’s performance is judged. For example, the AgentMemoryUsageHigh rule determines when the memory usage of a WebSpeed agent process exceeds the specified threshold.

Rules — The resource monitoring component that OpenEdge Management checks to verify whether or not a resource complies with its performance criteria. Rule values, or settings, can be established by using either default or user-supplied values. Also, WebSpeed and AppServer brokers can optionally use calculated, resource-specific baseline rule values as determined by the Configuration Advisor.

Rules are broken when a resource is not in compliance with the rule-based criteria that you set up. OpenEdge Management generates alerts in the management console to alert you to this fact.

Rule Set — A combination of rules.

Defaults and default values — Values that are predefined in OpenEdge Management in one location but can apply in another location. Resource monitoring plans contain several default values. Some of the more general, common defaults pertaining to resource monitors include default schedule, default alerts, and actions. These defaults help expedite the setup tasks associated with configuring a monitoring plan. There are also default values associated with a given resource type. These types of default values include polling intervals and rule sets. See the “Default polling and trend values” section on page 241 for details.

Schedule — Defines the block of time when a set of monitoring rules is active for a resource. When you add a monitoring plan to a resource, you specify the schedule to indicate when the monitoring plan will be active. OpenEdge Management supports using, modifying, and copying predefined schedules to help you define them quickly. However, you can also create new schedules to suit your operating needs.
• **Alerts** — Notifications that some specified activity has occurred regarding an actively monitored resource. Alerts can occur to indicate a real or potential problem exists, such as a rule violation, or they can indicate that a typical or interesting activity regarding a resource has occurred.

• **Actions** — Activities that are triggered in response to alerts. For example, you might specify that you receive an e-mail when a WebSpeed agent is trimmed.

• **Resource monitoring plan** — A plan that defines a block of time during which a specific resource is to be monitored and identifies the rules that are to be checked during the specified time frame. All resources you create in OpenEdge Management must have one or more monitoring plans before OpenEdge Management can monitor the resource. Monitoring plans provide you with access to data that is immediately usable in indicating performance failures, giving you an opportunity to improve performance and report on trends gathered over a period of time you specified.

• **Baseline value** — As used in this guide, a number that serves as the base for calculating a set of possible threshold settings based on your system’s past activity for a specific rule. The Configuration Advisor determines a baseline value as part of its data analysis process to calculate recommended rule threshold settings for specific WebSpeed and AppServer rules. See Chapter 12, “Calculating Rule Threshold Settings Using the Configuration Advisor.”
Default polling and trend values

During the OpenEdge server discovery process, OpenEdge Management creates a resource monitoring plan for each resource instance that it discovers. At that time, each resource inherits and shows default polling and trending values (if applicable) as defined for that specific resource type on the Resource Monitor Defaults page.

To display OpenEdge resource-specific default values:


2. Click the link associated with the specific resource default values you want to review. The associated Resource Defaults page appears.

3. Change the default values, as necessary. Individual resources created from these categories inherit the updated default values. However, you can still override values for individual resources.

Note that you can revert back to the original OpenEdge Management-supplied default values at any time by clicking Restore Defaults from a resource’s individual default resource page.
Trend default values for WebSpeed and AppServer brokers

Data for rule evaluation, graphical displays, and reports is not available unless brokers are configured to collect and trend data to the OpenEdge Management Trend Database and to poll.

Before you can use either data collection or the Configuration Advisor feature successfully, you must set up these options:

- Trend
- Polling

Note: See the “Data collection details” section on page 73 for details about how to implement data collection with WebSpeed brokers. See the “Data collection details” section on page 104 for details about how to use data collection with AppServer brokers. See Chapter 12, “Calculating Rule Threshold Settings Using the Configuration Advisor,” for details about data collection and polled rules with WebSpeed and AppServer brokers.

Default monitoring plan details

Using default values helps you standardize and simplify your resource monitoring tasks so you can begin using many of the features of OpenEdge Management resource monitoring immediately.

This section:

- Identifies each resource monitoring plan’s fields and the associated default values that are common to all OpenEdge resource types
- Provides an example of each OpenEdge default monitoring plan
Monitoring plan default values

Table 41 identifies and describes the common monitoring plan default values that the OpenEdge resource types use. A default value defined by a check mark indicates that the option is selected.

Table 41: Monitoring plan default values

<table>
<thead>
<tr>
<th>Field</th>
<th>Default value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schedule</td>
<td>Default Schedule Plan</td>
<td>Identifies the system-defined, 24/7 default schedule used when the plan is active. This default plan is the same for all OpenEdge Management resources.</td>
</tr>
<tr>
<td>Poll</td>
<td>5 minutes</td>
<td>Identifies the polling cycle, which is the frequency at which the resource’s rules are checked, set up for each individual OpenEdge Management resource monitor.</td>
</tr>
<tr>
<td>Alerts</td>
<td></td>
<td>Indicates whether alerts are active and will be generated when the plan is active.</td>
</tr>
<tr>
<td>Trend</td>
<td></td>
<td>Indicates whether the statistical data monitored while the plan is active will be stored to the OpenEdge Management Trend Database.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The Trend Performance Data field value is involved in setting data collection.</td>
</tr>
<tr>
<td>Rule Summary</td>
<td>Default rule set for the specific OpenEdge resource</td>
<td>There is a default rule set for each type of OpenEdge resource.</td>
</tr>
</tbody>
</table>

Default Schedule details

OpenEdge Management provides one default monitoring plan per OpenEdge resource, with the exception of Messengers and AppServer Internet Adapters. (Each of these resources does, however, have a log file monitoring plan.)

The default monitoring plan is called the Default Schedule Plan. However, when you update a monitoring plan, you can add different plans to monitor different resource activities.

Note: OpenEdge Management prevents the assignment of schedules that share overlapping time periods. For example, if you have a Default Schedule set up for a resource monitor, you cannot set up an additional plan because the Default Schedule is defined for 7 days a week, 24 hours a day. You must modify the Default Schedule or remove it from the plan in order to add other plans.
Each OpenEdge resource that OpenEdge Management discovers will automatically have its own default monitoring plan and associated rule set established. You can change these default values at any time using the standard resource monitoring procedures.

**Default values in the Rule Summary**

All monitoring plans also include a Rule Summary. The *Rule Summary* is a list of rules and rule sets that are applied to the particular monitoring plan. OpenEdge Management automatically applies the default rule set associated with a specific OpenEdge resource to a plan.

**OpenEdge default monitoring plan examples**

This section shows some of the key components of a monitoring plan as they appear on a sample resource’s summary monitoring page. The purpose of the example is to show the default values that are automatically applied when a resource is discovered, highlighted by the default plan and associated default rule set.

**NameServer default monitoring plan example**

Figure 44 is an example of a NameServer default monitoring plan and associated default rules example. The figure shows the default plan and rule set for a NameServer named NS1.

![NameServer instance default monitoring example](image-url)
Maintaining monitoring plans

You use the same basic tasks to create resource monitoring plans for any OpenEdge Management resource.

Updating monitoring plans

This section describes how to access and update a monitoring plan and associated rules using the AppServer broker resource as the example.

To update an AppServer broker resource monitoring plan:

1. From the grid frame for Resources, click the Edit icon to display the details page for the AppServer broker instance whose resource monitor you want to update. See the “Accessing OpenEdge Management resource information” section on page 54. In this example, the AppServer broker resource asbroker1 is selected.

2. Click Monitoring Plans in the Command and control section of the OpenEdge Management Details page. In this example, the Monitoring Plans page for AppServer broker resource asbroker1 appears:

![Monitoring Plans page]

The Monitoring Plans page displays the current monitoring plan details, including the poll interval, alert status, and trend status. It also shows the rule summary, which lists the rules with their associated status and severity.

Add Plan button: Click to add a new monitoring plan.
3. Select the specific schedule associated with the plan that you want to update. Click **Edit** associated with that plan. The following page appears when you choose to edit the **Default Schedule Plan**:

![Edit Default Schedule Monitoring Plan](image)

- **Available Schedules**: Default_Schedule
- **Polling Interval**: 5 minutes
- **Alerts Enabled**: True
- **Trend Performance Data**: Advanced Settings

4. Update the monitoring plan values for this resource, as described here:

   a. Change current values in these fields: **Available Schedules**, **Polling Interval**, or **Alerts Enabled**.

   b. Select a specific rule or rule set to add, update, or remove from this plan. For details, go to **Step 5**.

   c. Change the setting of the **Trend Performance Data** option. However, note that this option is required to ensure that data gathered using data collection is trended to the OpenEdge Management Trend Database. For WebSpeed broker-related details, see the “Properties” section on page 71. For AppServer broker-related details, see the “Properties” section on page 103.
d. Click **Advanced Settings** to see all trend value settings, as shown:

![Advanced Settings](image)

5. Click the individual rule to display details about that rule, including alert severity, action to perform upon the firing of the alert, and a brief description of the rule.

For example, click **Add Rule** in the **Rules selected for this plan** section of the **Default_Schedule Monitoring Plan** page. The **Available Rules** page for rules that are specific to the OpenEdge resource appears. In this example, the rules associated with an AppServer broker resource appear:

![Available Rules](image)
The **Available Rules** page contains a dynamic list that includes only those rules not yet applied to a given monitoring plan.

**Note:** The step to select rules for each OpenEdge resource is the same. However, each OpenEdge resource has a unique **Available Rules** page. For more information about each set of rules, see the “Understanding and using resource monitor rules” section on page 251.

6. Click the rule you want to add. For example, if you select **Process CPU High**, the detailed rule information shown in the following dialog box appears:

![Process CPU High dialog box]

Note the rule’s description at the bottom of the rule page.

7. Update any unique values you want to define for this instance of the rule. Note that using this procedure as a guide, none of the steps in this procedure required you to enter values for these fields. Although these fields serve different purposes, they all can display default values.

This rule is associated only with this particular plan. When you update another plan with the same rule, you can select values that are appropriate for that particular plan.

The **Threshold** field associated with this page indicates the actual rule criterion. For details about rules, see the “Understanding and using resource monitor rules” section on page 251. The remaining fields on this page are alert- and action-related fields. For details, see *OpenEdge Management: Alerts Guide and Reference*.

8. Click **Save**. The **Available Rules** page reappears. Repeat Step 6 and Step 7 for each additional rule you want to apply to this plan. After you add and define the criteria for each rule you want to add, click **Done Adding Rules** on the **Available Rules** page.
9. Click **Select Rule Sets** in the **Rules selected for this plan** section of the **Default Schedule Monitoring Plan** page to choose the rule sets you want to add to the monitoring plan. OpenEdge Management displays the default rule set for the resource type you are updating, and any additional rule sets created (if applicable) using the **OpenEdge Management Component Library**. See the “Working with rule sets” section on page 256 for details.

10. Click **Save**. The updated monitoring plan appears in the monitoring plan definition on the top of the **Monitoring Plan summary** page.
General rule conventions

For each rule, the following details are provided:

- A colored dot, preceding the rule name, that indicates the status associated with each rule. See Table 42 for a description of each status.

- The alert severity for each rule if the rule fails.

- The action to take place when the alert fires.

See OpenEdge Management: Resource Monitoring for more resource status information.

Table 42: Resource status legend

<table>
<thead>
<tr>
<th>Status</th>
<th>Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pass</td>
<td>Green</td>
<td>The resource monitor is currently working.</td>
</tr>
<tr>
<td>Fail</td>
<td>Red</td>
<td>The most recent test involving the associated resource failed. For some resources, such as network, this includes statuses such as tardy, time-out, and unreachable. Check the Alert Summary page or the specific monitor for possible alert details. This status can also identify an internal error that prevents the resource from being monitored.</td>
</tr>
<tr>
<td>Not Running</td>
<td>Blue</td>
<td>This resource is currently not running. This status is particularly informative as it applies to resources such as the OpenEdge databases and servers that must be operating before you can monitor them.</td>
</tr>
<tr>
<td>Not Checked</td>
<td>Yellow</td>
<td>The resource monitor’s status is currently unknown. For example, if system startup has just occurred, it is possible that the resource has not yet been polled.</td>
</tr>
<tr>
<td>Disabled</td>
<td>Dark Gray</td>
<td>The resource monitor has been disabled and is not currently monitoring a resource.</td>
</tr>
<tr>
<td>Inactive</td>
<td>White</td>
<td>There is no active monitoring plan.</td>
</tr>
<tr>
<td>Offline</td>
<td>Light Gray</td>
<td>The resource is currently offline.</td>
</tr>
</tbody>
</table>
Understanding and using resource monitor rules

The concept of a rule as it applies to OpenEdge resource monitors is identical to that expressed by the specific rules for other resource monitor types. A rule is the resource monitoring component that OpenEdge Management checks to verify whether a resource complies with an expected performance criterion. Certain rules specific to WebSpeed and AppServer can also use the Configuration Advisor to generate intelligent threshold values based on an analysis of data collected for a given rule.

In addition to the rules identified as default rule sets in the “Updating monitoring plans” section on page 245, you can also choose from different individual resource-specific rules and define them for a monitoring plan.

Common rule characteristics

The following characteristics are common to all rules, regardless of their individual resource type:

- Only the rules that are not already part of the monitoring plan appear in each resource type’s Available Rules list.

- When you select any of the rules available in the specific available rules list, the particular criteria associated with each rule appear.

- You can modify the default values associated with each individual rule.

- To display the rules available for each OpenEdge resource type, click Add Rule on the monitoring page when it is displayed in edit mode. See the procedure in the “Maintaining monitoring plans” section on page 245 for details about this task.

- If a rule is part of a monitoring plan and a member of a rule set, the individual rule definition supersedes the rule in the rule set.

As with all OpenEdge Management resource monitoring rules, if the alert-related options are enabled for an OpenEdge monitoring plan, any rule violation causes an alert to trigger. See OpenEdge Management: Alerts Guide and Reference for detailed information about OpenEdge Management alert types and rules, and specific definitions about the alert feature’s relationship with each rule.

Average Procedure Duration High rule

The WebSpeed and AppServer lists of available rules include Average Procedure Duration High. This rule measures the average duration of an ABL procedure run by a server, or agent, process. This average is calculated based on the polling interval set for the resource, not the average for the lifetime of the broker.

Calculating the average duration for a procedure

The average is determined by the sum of time noted for a procedure name to run divided by the total number of times the procedure ran. The data used to determine this average is collected during a polling interval. This calculated result is then compared to the threshold defined for the procedure name.
Since this calculation determines an average based on data collected for each procedure, an individual spike will not necessarily skew the average. The rule's algorithm is designed to eliminate these spike conditions, minimizing unnecessary alerts.

**Note:** The **Procedure Duration High rule** measures the execution time of the ABL procedure only from the server's, or agent's, viewpoint. The time measure does not include network and client processing overhead.

### Accessing the Average Procedure Duration High rule page

The **Procedure Duration High rule** page is accessible from the **Available Rules** page. On this page, you specify the specific procedures you want to measure, setting the average duration threshold in milliseconds. You can also set alert and action criteria.

### Supplying data for ABL procedures and WebSpeed Transaction Servers

For ABL procedures related to the Transaction Server, you must reference the CGI environment variable as defined in the **Value of PATH_INFO** on the URL. Enter this string in the **Procedure** field to identify the name of an ABL procedure, entering one procedure on one line. These procedures will generally be file types such as `.p`, `.w`, or `.html`. The following URL example shows the type of information required to measure a WebSpeed procedure:

```
http://hostname/scripts/cgiip.exe/src/web/examples/status.p
```

The procedure name that is executed is the PROPATH relative name `src/web/examples/status.p`. This is the value of the CGI environment variable `PATH_INFO`.

### Supplying data for ABL procedures and AppServers

AppServer ABL procedures execute with the RUN statement based on an AppServer connection handle. The procedures can reference PROPATH relative directories, unqualified procedure names, internal procedures, and user-defined functions. To measure the duration of specific AppServer procedures, enter the procedure name in the **Average Duration High Rule** page exactly as it is referenced in the RUN statement.
Table 43 describes three examples.

### Table 43: Examples of AppServer-related ABL procedure entries

<table>
<thead>
<tr>
<th>This ABL procedure entry . . .</th>
<th>Runs a procedure that . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUN myOrders.p ON SERVER hAppSrv</td>
<td>Is PROPATH-relative. This entry refers to a procedure that is located in a directory or procedure library specified on PROPATH.</td>
</tr>
<tr>
<td>RUN myApp/myAccounts.p ON Server hAppSrv</td>
<td>Is PROPATH-relative. This entry refers to a procedure that is located in the subdirectory called myApp that is relative to PROPATH.</td>
</tr>
<tr>
<td>RUN processOrder IN hProc</td>
<td>Shows the execution of an internal procedure.</td>
</tr>
</tbody>
</table>

To measure any of the example procedures noted in Table 43 using the **Average Procedure Duration High** rule, you must enter the procedure name exactly as it appears on the RUN statement.

### Rejected Request Percent High rule

The WebSpeed and AppServer lists of available rules include the **Rejected Request Percent High** rule. This rule highlights the percentage of client requests rejected during a polling interval set for either a WebSpeed agent or an AppServer Server. The rule determines violations based on the number of initiated requests that exceed the defined threshold setting. You can review this information to determine processing bottlenecks or tuning problems. You can adjust your threshold setting to help minimize the impact these problems have on preventing client requests from being serviced.

#### Determining the percentage of rejected requests

The percentage of rejected requests for either a WebSpeed resource or an AppServer resource is determined by a formula that compares data from the previous poll period with data from the most current poll period. The result is always calculated on a per-poll-period basis.

This rule subtracts the number of requests rejected during the current poll from the number of requests rejected during the previous poll. The rule then determines the number of new rejected requests for the current poll period. This rule also subtracts the number of requests received during the current poll from the number of requests rejected during the previous poll to determine the number of new received requests for the current poll. The number of requests rejected is then divided by the number of requests received to determine the percentage of requests rejected during this poll period.

#### Accessing the Rejected Request Percent High rule page

The **Rejected Request Percent High** rule page is accessible from the **Available Rules** page. On this page, you specify the threshold value as a percentage. The value identifies the number of rejected client requests during the polling interval that you will consider acceptable. Any rejected requests that exceed this value will cause the alert and action criteria that you set on this page to be triggered.
Queue Request Percent High rule

The WebSpeed and AppServer lists of available rules include Queued Request Percent High. This rule highlights the percentage of client requests queued during a polling interval set for either a WebSpeed agent or an AppServer server. This rule determines violations based on the number of queued requests that exceed the defined threshold setting. You can review this information to determine processing bottlenecks or tuning problems. You can adjust your threshold setting to help minimize the impact of these problems.

Determining the percentage of queued requests

The percentage of queued requests for either a WebSpeed agent or an AppServer server is determined by a formula that compares data from the previous poll period with data from the most current poll period. This data is always calculated on a per-poll-period basis.

This rule subtracts the number of requests queued during the current poll from the number of requests queued during the previous poll. The rule then determines the number of new queued requests for the current poll period. This rule also subtracts the number of requests completed during the current poll from the number of requests completed during the previous poll to determine the number of new completed requests for the current poll. The number of requests queued is then divided by the number of requests completed to determine the percentage of requests completed during this poll period.

Accessing the Queued Request Percent High rule page

Accessible from the Available Rules page is the Queued Request Percent High rule page. On this page, you specify the threshold value as a percentage. The value identifies the number of queued client requests during the polling interval that you consider acceptable. Any queued requests that cause the percentage to exceed this value will cause the alert and action criteria that you set on this page to be triggered.

Agent (Server) Unavailable rule

The list of available rules includes the following:

- Agent Unavailable rule for a Transaction Server — Monitors an agent’s processing state to determine the agent’s availability to service requests
- Server Unavailable rule for an AppServer — Measures a server’s processing state to determine the server’s availability to service requests

For either an agent or a server, this condition can indicate a failed, hung, or runaway process.

Note: Unlike other OpenEdge Management rules, the WS_Agent Unavailable rule and the WS_Server Unavailable rule monitor the state of either an agent or a server, rather than the data each resource collects.
Accessing the Agent (Server) Unavailable page

The Agent Unavailable page is accessible from the WebSpeed Available Rules page. The Server Unavailable page is accessible from the AppServer Available Rules page. On each page, you specify an integer to identify the threshold number of polls at which point you want to be alerted that the agent (or server) has been unavailable. You can also set other alert and action criteria.

WebSpeed agent example

A user initiates a customer order query in WebSpeed through a browser and accidently enters a date range for one year (requesting the processing of 52 weeks' worth of data records) rather than the date range for one week (requesting 1 week worth of data records). The user expects a quick display of a results set and is unaware that the agent is tied up for an unknown period of time attempting to process more than 2,000,000 records associated with the year. The user becomes impatient with the wait time and begins clicking the Submit button over and over, hoping for some indication that the job has been submitted and the results set is ready for viewing.

Unbeknownst to the user, each click of the Submit button causes the allocation of a new agent to service the request. This allocation might initiate the spawning of a new agent process. While this is occurring, the existing agents, processing the previous query requests, are unaware that the connection to the requesting client's browser page has been lost. These agents continue to consume resources as they process a request with no destination. If the request is long-running, as defined by this example, the agents are unavailable to service new client requests. This can impact application performance and throughput. The performance degradation can easily be compounded by the drain these agents place on other resources such as CPU, memory, and databases.

As this example illustrates, you can use the Agent Unavailable rule as designed to help call attention to potential processing difficulties as soon as possible, and to prevent performance problems from escalating.

AppServer server example

An AppServer server can be stuck in an unavailable state due to either a startup fault or an application-level fault. The Server Unavailable rule is designed to alert you to a server that is unavailable due to these types of situations.

Note: This rule and its implications as described apply only to stateless and statefree implementations of an AppServer. This rule does not apply to state aware or state reset implementations.
Working with rule sets

You associate a rule set with one or more resources through a monitoring plan. Rule sets are stored by resource type in the OpenEdge Management Component Library. The following links allow you to create OpenEdge-related rule sets:

- Create AppServer Rule Set
- Create NameServer Rule Set
- Create WebSpeed Rule Set

You cannot create rule sets for AppServer Internet Adapters, WebSpeed Messengers, SonicMQ Adapters, Web Services Adapters, or DataServers. You can, however, use and modify the default rule sets provided for each of these resources.

To display the OpenEdge Management Component Library page where these links appear, click Library.

Note: The Log File Rule Set link on the OpenEdge Management Component Library page allows you to create rule sets that are shared among all log file resource monitors.

Rule sets provide a way for you to manage many broker resource types by sharing rule definitions. In this way, you create a common set of rules that you can associate with multiple resource instances.

Each rule set you create is stored in the OpenEdge Management Component Library, making the rule set available for use and reuse by other resource monitors within a given resource type.

You can also add individual rules to a monitoring plan, whether or not the rules are part of any rule set. If you include a rule in a monitoring plan’s rule set and then add the same rule again with modifications, the rule in the rule set is overridden by the rule with the modifications.

OpenEdge Management provides a default rule set for each OpenEdge resource type as it does for other resource types. For example, when an AppServer broker resource is added to OpenEdge Management, a default monitoring plan with a default rule set is assigned to it.

Benefits of using rule sets

Rule sets allow you to do the following:

- Associate the rule set with a monitoring plan. The polled rules in the sets are evaluated when the monitoring plan is active and the resource is polled. (Asynchronous rules trigger immediately when these rules are violated.)

- Use an updated rule set. If you associate a rule set with a monitoring plan and you later update the rule set, the updated rule set is then used by the monitoring plan.

- Share the same rule set among several resource instances, such as all NameServers using the same common rule sets.
• Associate zero, one, or more rule sets with a broker monitoring plan.
• Override one or more rules defined in any rule set used by a monitoring plan.

To create a NameServer rule set:

1. Choose one:
   • Click Library from the menu bar. Then click Create NameServer Rule Set.
   • Choose Library → New → NameServer Rule Set.

The Create NameServer Rule Set page appears:

2. In the Name field, enter the name of the rule set (no spaces allowed).
3. In the Description field, enter a brief description of the rule set.
4. Click Save. The NameServer Rule Set page appears:

Note the following about this rule set and rule sets in general:

• The rule set is now listed under the OpenEdge Management Component Library list frame under Rule Sets → NameServer. (Rules sets associated with WebSpeed rules and AppServer rules are listed in the same Rule Sets category, but under the specific WebSpeed and AppServer rule set-related subcategory.)

• Once you create a rule set, you can edit, copy, or delete it.

• If you add a rule or a rule set to an existing rule set, the change affects all resources using the rule set.
Chapter 11: Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters

Editing a rule set

Once you create a rule set, you can edit it later.

To edit a rule set that you created:

- From the specific resource type’s Rule Set page, click Edit to change the name or description of the rule set.
- From either the Rule Set page or the Edit Rule Set page, click Add Rule to add a rule to the rule set.

Note that you can access the list of existing rule sets at any time from the OpenEdge Management Component Library list frame. For example, click Rule Sets from the categories that appear in the list frame. Figure 45 shows the Rule Sets subcategories that appear in the detail frame.

Figure 45: Accessing rule sets from the detail frame

Copying a rule set

You can copy a rule set and make whatever modifications you want. At a minimum, you must be sure to rename the copy.

To copy an AppServer rule set:

1. From the AppServer Rule Set page, click Copy. The Copy AppServer Rule Set page appears.
2. Rename the copy and (optionally) change the description.
3. Click Save.

From either the Copy AppServer Rule Set page or the AppServer Rule Set page, you can now add one or more rules to the copy.

Note that you can access the list of existing AppServer rule sets at any time from the OpenEdge Management Component Library list frame. Click Rule Sets, and then click AppServer.
Deleting a rule set

You can delete a rule set as long as it is not currently associated with any resource monitoring plans.

To delete a rule set from the Rule Set page, click Delete. Click OK to confirm the deletion.

Note: You can access the list of existing rule sets at any time for the OpenEdge Management Component Library list frame. For example, click Rule Sets, then click AppServer.

Adding rule sets that have one or more rules in common

If you have multiple rule sets associated with a monitoring plan and you edit one of the rule sets, evaluation of only the first occurrence of any identically named rules takes place when the resource is polled. Which occurrence is considered “first” is determined by the alphabetical order of the rule set.

Associating a rule set with a monitoring plan

You create a rule set for a specific OpenEdge resource to associate and use it with one or more monitoring plans. Once you establish the association, the rule set is active for the resource whenever the monitoring plan is active. The following procedure illustrates this association for an AppServer rule set.

To associate an AppServer rule set with a broker monitoring plan:

1. From the grid frame for Resources, click the Edit icon to display the details page for the AppServer broker instance where you want to associate a rule set with the monitoring plan.

2. Click Monitoring Plans in the Command and control section. When the Monitoring Plans page appears, click the monitoring plan you want to update.

3. Click Edit. The Edit Monitoring Plan page appears.

4. Under Rules selected for this plan, click Select Rule Sets. A list of available rule sets appears. If a rule’s check box is selected, that rule set is already associated with the monitoring plan.

5. Select one or more rule sets you want to associate with the plan. If you want to review the rule set before you select it, click it. The rule set detail page opens.

6. Click Save when you finish. The monitoring plan is updated, and the Edit Monitoring Plan page reappears.
Calculating Rule Threshold Settings Using the Configuration Advisor

This chapter describes how to use the Configuration Advisor to generate recommended threshold rule settings tailored for your system, as outlined in the following sections:

- Configuration Advisor overview
- Setting rules-related criteria
- Understanding the recommended threshold settings
- Determining the effectiveness of your selections

This chapter focuses on using the Configuration Advisor with the AppServer and WebSpeed Transaction Server.

See *OpenEdge Management: Database Management* for Configuration Advisor details related to databases. See *OpenEdge Management: Resource Monitoring* for Configuration Advisor details related to CPU, disk, and file system resources.
The Configuration Advisor is an OpenEdge Management feature that helps you to determine optimum threshold settings for specific polled rules used. An alternative to using OpenEdge Management-supplied default values or values that you might arbitrarily set, the Configuration Advisor recommends threshold settings based on a representative sampling of historical data stored in the OpenEdge Management Trend Database.

Note: You must have administrator privileges to use the Configuration Advisor.

The Configuration Advisor analyzes a rule’s past performance for a specified period of time and, based on that data, calculates a baseline value. A baseline value is a number that serves as the base for calculating a set of possible threshold settings based on your system’s past activity for a specific rule.

You then compare the existing rule threshold value with the recommended options to determine how to set the rule’s threshold. When you select one of the recommended settings, OpenEdge Management will use this setting the next time the rule is evaluated.

Recommendations are based on a representative sampling of data from the OpenEdge Management Trend Database. When you apply a recommend rule threshold setting, the alerts triggered as a result of rule violations provide a more meaningful indication of your resource’s performance.

Note: Depending on such factors as the time OpenEdge Management requires to retrieve, evaluate, and generate baseline values, resources could be dedicated to this task for an unknown period of time. Allot a period of time to experiment with this feature to familiarize yourself with its benefits and processing requirements.

Rule details

The Configuration Advisor calculates recommended rule threshold settings for rules associated with a variety of OpenEdge Management resources. This section highlights the WebSpeed broker and AppServer broker rules. See OpenEdge Management: Database Management for details about the database rules. See OpenEdge Management: Resource Monitoring for details about using the Configuration Advisor with a disk, CPU, or file system resource.

The Configuration Advisor recognizes these WebSpeed broker and AppServer broker polled rules as candidates to process:

- Queued Request Percent High
- Rejected Request Percent High
- Process CPU High
- Process Resident Memory High
- Process Virtual Memory High
For the Configuration Advisor to effectively analyze data for these polled rules, each rule must collect and trend data on every poll. You must maintain a one-to-one relationship between trending and polling data regardless of the time interval set for the polling. Also, the options to implement data collection for a broker resource must have been set (checked). For details about data collection and the WebSpeed broker, see the “Data collection details” section on page 73. For details about data collection and the AppServer broker, see the “Data collection details” section on page 104.

Rule-related considerations

Note these points concerning rule processing:

- A polled rule must be currently associated with a defined monitoring plan for it to be a candidate for the Configuration Advisor’s data analysis process.

- All rules associated with a given OpenEdge resource are individually evaluated against the rule-specific data retrieved from the OpenEdge Management Trend Database for the period of time you define.

- The Configuration Advisor evaluates individual rules in a rule set. Therefore, updating a rule with a recommended setting changes the value that a rule uses if the rule is part of a rule set. Because rule sets are shared among resources of a given resource type, this value change might adversely effect other resources using this rule set.

Data analysis and recommended values overview

The goal of the Configuration Advisor’s data analysis process is to determine a set or range of meaningful threshold values for a specific rule as used by your resources. This determination is based on several factors.

User-supplied criteria

Figure 46 shows the initial Configuration Advisor page. In this example, the resource is an AppServer broker, asbroker1.

![Configuration Advisor page](image)
On the **Configuration Advisor** page, specify these values:

- A particular period of time, such as a week, in which data about a given rule is gathered and stored in the OpenEdge Management Trend Database. Consider using the OpenEdge Management-supplied default values associated with a rule to establish this setting.

- A time frame that defines a representative period in which a rule is generally active or being used. This time frame is the period against which you want to calculate your baseline value. To gather this data with a high degree of accuracy, you will want to select a period of time in which your resources are most active in performing reads, writes, and updates to your system.

It is recommended that you use the OpenEdge Management-supplied, Configuration Advisor-related default values for a set period of time (for example, one week) to capture data to the OpenEdge Management Trend Database for a rule. This initial step will provide you sufficient data to perform the comparison.

**Note:** Your monitoring plan schedules are not necessarily the best choice for a time frame. A schedule defines a period of time in which rules are in effect; it does not necessarily focus on time periods in which your resource usage is highest. For example, you might use the 24x7 monitoring plan schedule to constantly monitor your system, but would select Monday through Friday from 8 AM to 6 PM to calculate your baseline settings.

- The rule or rules for which you want to determine recommended values.

The Configuration Advisor reviews monitoring plans defined for a resource, looking for polled rules that can be calculated by the Configuration Advisor. If any of these rules are present, it shows them as preselected (as identified by a check mark). Deselect any rules for which you do not want recommended values to be calculated by removing the check mark next to the rule. When you deselect the check mark, the Configuration Advisor does not calculate the rule threshold setting for that rule.

### The Configuration Advisor’s data analysis process

When you submit the completed **Configuration Advisor** page, the Configuration Advisor extracts individual rule-related data from the OpenEdge Management Trend Database. Based on the availability of a minimum requirement of 32 valid data samples per rule to be calculated for the designated date range, the Configuration Advisor determines a baseline value.

A **valid data sample** is a data sample that is determined not to be a null value (any whole number that is not zero). For example, the Rejected Request Percent High rule is determined when the quantity of rejected requests is divided by the quantity of received requests. The result must be a non-zero, whole number.

This baseline value is used to calculate the recommended ranges. A data sample of 32 identifies a statistically meaningful representative portion of a rule’s performance data as stored in the OpenEdge Management Trend Database. This sampling provides sufficient data from which the Configuration Advisor can determine a baseline value and subsequently perform a successful analysis of each rule’s data.
An individual rule’s definition

Based on the availability of the values and data, the Configuration Advisor generates a set of recommended values, or settings, for each rule processed. The range of values is adjusted as necessary, to ensure that the rules do not violate the minimum or maximum allowable values for the rule.

Calculated recommended threshold rules

Once the calculation process is completed for each rule, the Configuration Advisor presents its results on the Configuration Advisor calculations page. Your initial criteria and each rule and the associated monitoring plans for which the rule applies are shown.

Figure 47 shows the page that appears after you submit your initial Configuration Advisor page.

Figure 47: Configuration Advisor recommended thresholds

The following time period was used for analysis section of this page summarizes the values defined on the initial Configuration Advisor page. These values are shown here to remind you about the time period criteria you set.

The Rule section contains all the rule-related calculated data. For each rule that is successfully processed, the range of recommended results appears in the Recommended Values drop-down list. Each rule row also shows the current rule setting for each rule as defined for each individual monitoring plan. You can select a recommended rule threshold setting and existing monitoring plan, or plans, to which you want the range to apply.

The recommended settings are expressed in a mathematical expression consistent with the rule threshold’s unit of measure. Figure 47 shows that the unit of measure for Queued Request Percent High is Percent queued and Rejected Request Percent High is Percent rejected. The unit of measure for Process CPU High is percent.

Note: As you compare the existing and recommended values, you can elect to change none, some, or all values for a rule and for each individual monitoring plan.
Until you click **Update Selected Rules**, OpenEdge Management does not apply any of your selections.

If the data analysis calculation for a rule was unsuccessful, the Configuration Advisor cannot define a range. An **Insufficient data for analysis** message appears in the **Recommended Values** drop-down list field. For example, if a data sample for the defined time period is not equal to or greater than 32, this message appears because there are not enough data samples available for the Configuration Advisor to make a meaningful recommendation.

### Generating and applying threshold rule settings

**Table 44** highlights where to find additional information about using the Configuration Advisor.

**Table 44: Configuration Advisor details**

<table>
<thead>
<tr>
<th>For information about . . .</th>
<th>See . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>The procedure to set user-supplied criteria used in the data analysis process</td>
<td>The “Setting rules-related criteria” section on page 267</td>
</tr>
<tr>
<td>Understanding the Configuration Advisor’s recommended settings, including evaluating and applying these settings</td>
<td>The “Understanding the recommended threshold settings” section on page 269</td>
</tr>
<tr>
<td>Reviewing your selections</td>
<td>The “Determining the effectiveness of your selections” section on page 274</td>
</tr>
</tbody>
</table>
Setting rules-related criteria

Once you have completed your specific rule analysis, you have the necessary information to use the Configuration Advisor. The following procedure shows how to use the Configuration Advisor to calculate AppServer threshold values. Use these same steps to calculate WebSpeed threshold values, substituting the WebSpeed-specific rules and data for those shown in the procedure.

To initiate the Configuration Advisor:

1. From the grid frame for Resources, click the Edit icon to display the details page for the AppServer broker instance whose configuration advisor you want to initiate. Refer to the “Accessing OpenEdge Management resource information” section on page 54 for the detailed steps.

2. Click Configuration Advisor in the Command and control section to view the Configuration Advisor page, as shown:

3. In the Start Date and End date fields, define a date range that OpenEdge Management will use to collect data from the OpenEdge Management Trend Database. (The default date range is one week.)

Keep these points in mind:

- A polled rule must currently be associated with a monitoring plan for it to be a candidate for the Configuration Advisor to process.

- Trending must have been set to True for a candidate rule for the time period you specify. This requirement ensures that data was trended to the OpenEdge Management Trend Database for this rule.

- The options to implement data collection for a broker resource for which you want to determine recommended rule threshold settings must have been selected.
• All rules associated with a given OpenEdge resource are individually evaluated against the rule-specific data retrieved from the OpenEdge Management Trend Database for a period of time you define.

4. In the Choose time period to analyze section, identify the time frame that defines a representative period of time for which the rules are generally active, or being used. This time frame is the period against which OpenEdge Management calculates the baseline activity. (The default time period, as shown in Step 2, is Sunday through Saturday, 9 AM to 5 PM.)

5. In the Select rules (for analysis) section, click the polled rules that you want the Configuration Advisor to use to calculate threshold settings.

Only those polled rules that are currently defined in existing monitoring plans for a broker resource can be candidates for processing by the Configuration Advisor. The Configuration Advisor presents these rules in this section with a check mark associated with the rule to indicate that the Configuration Advisor will calculate new settings. (In the sample shown in Step 2, the Configuration Advisor determined that there are five rules that are associated with this broker resource’s existing monitoring plans. The Configuration Advisor will attempt to provide recommended values for these rules.)

This requirement ensures that data was trended to the OpenEdge Management Trend Database for this rule.

6. Click Submit.

As the Configuration Advisor attempts to calculate the rules threshold settings, the following information appears, reporting the progress of each calculation it is performing:

```
Configuration Advisor
skye.asbroker1
Queued Request Percent High finished
Rejected Request Percent High working
Process CPU High
Process Resident Memory High
Process Virtual Memory High
```

Depending upon the criteria that you set on the initial Configuration Advisor page, the number of rules you selected, and other factors such as your machine’s speed, this calculation process could take some time.

**Note:** Once you click Submit, you can elect to go to another page and perform some other action. You can return to the Configuration Advisor at a later time to check status and/or result details.

When all calculations have been completed and reported, the Configuration Advisor presents the calculated results. See the “Understanding the recommended threshold settings” section on page 269 for details.
Understanding the recommended threshold settings

Figure 48 shows the data calculation page that appears after the Configuration Advisor has applied the criteria you submitted to calculate the threshold settings.

Table 45: Tasks using the Configuration Advisor Calculations page

<table>
<thead>
<tr>
<th>To . . .</th>
<th>See . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review and evaluate the recommended threshold settings calculated for each rule processed</td>
<td>The “Evaluating recommended settings” section on page 270</td>
</tr>
<tr>
<td>Display and review the specific details about each individual rule’s analysis</td>
<td>The “Evaluating recommended settings” section on page 270</td>
</tr>
<tr>
<td>Compare current threshold settings defined for each of the rules processed with the recommended threshold calculations</td>
<td>The “Comparing and selecting threshold settings” section on page 272</td>
</tr>
<tr>
<td>Update the threshold values for the rules and the specific schedules that you have selected</td>
<td>The “Submitting your threshold setting selections” section on page 273</td>
</tr>
</tbody>
</table>
Chapter 12: Calculating Rule Threshold Settings Using the Configuration Advisor

Evaluating recommended settings

As Figure 48 shows, each rule the Configuration Advisor has analyzed appears as an individual line item in the Rule section. Associated with each rule is a Recommended Values drop-down list which contains one of the following entries:

- Numeric values that identify the recommended rule threshold settings. This list can contain up to seven different numeric items. Collectively, these values comprise the range of recommended threshold settings.

- An Insufficient data for analysis message. The Configuration Advisor presents this message when the criteria are not met to perform the data analysis successfully. See the “Setting rules-related criteria” section on page 267 for details.

Reviewing recommended values

The Configuration Advisor displays a range of possible values from which to select. Figure 49 shows the full range of seven recommended values for the Process CPU High rule. Note that the Configuration Advisor’s primary (default) recommendation appears in the Recommended Values field with an asterisk.

Figure 49: Recommended Values field content

Each recommended value is expressed as a set of two numbers. The first number (in each row) specifies the recommended threshold setting. The second number, shown in brackets, identifies the number of times the threshold value set at the associated setting would be exceeded and an alert fired. The asterisked number indicates the Configuration Advisor’s primary recommendation. As you review the recommended threshold settings, note the rule behavior and alert notification frequency you want to establish for a resource.
Using the Detail button

Each rule row has an associated **Detail** button.

To view details about a rule’s analysis, click **Detail** for a row. The **Detail** page appears.

**Figure 50** shows a Detail page, which presents the data used to evaluate the **Queued Request Percent High** rule.

**Figure 50:** Detail page analysis content

**Table 46** describes the contents of the **Detail** page.

**Table 46:** Detail page fields and descriptions

<table>
<thead>
<tr>
<th>This field</th>
<th>Describes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of useable samples</td>
<td>The number of data samples extracted from the OpenEdge Management Trend Database</td>
</tr>
<tr>
<td>Min Value</td>
<td>The minimum value derived from the data set</td>
</tr>
<tr>
<td>Max Value</td>
<td>The maximum value derived from the data set</td>
</tr>
<tr>
<td>Std Deviation</td>
<td>The root mean squared deviation</td>
</tr>
<tr>
<td>Average</td>
<td>The average value derived from the data set</td>
</tr>
</tbody>
</table>

**Note:** The **Detail** page for a rule for which there is insufficient data for analysis identifies the number of samples found. This number is always lower than the minimum of 32 data samples required. Review this data to help you decide if you need to expand the time period to try to capture more samples and rerun the Configuration Advisor for a given rule.
Comparing and selecting threshold settings

By default, the Configuration Advisor assumes that you are going to select and submit one of the recommended threshold settings. The Configuration Advisor selects the Update option for each rule. However, you have options concerning the selection process. As you compare the existing and recommended values, you can elect to change none, some, or all values for a rule and each individual monitoring plan.

Use the following procedure to compare the current rule setting with the recommended threshold settings and to update each schedule with your specific selections. Perform this comparison to help you further determine your final selection.

To compare and select threshold settings:

1. For a specific rule row, note the value that appears in the Current Threshold field under a specific schedule. For example, note the values that appear in the Current Threshold field for the Weekdays and Weekends monitoring plans:

   - **Process CPU High**
     - **Current Threshold:** 80.0
     - **Recommended Values:** 51.0-99.0
   - **Process Resident Memory High**
     - **Current Threshold:** 1000.0
     - **Recommended Values:** 226.0
   - **Process Virtual Memory High**
     - **Current Threshold:** 100.0
     - **Recommended Values:** 6850.5
   - **Failed Request Percent High**
     - **Current Threshold:** 20.0
     - **Recommended Values:** 4.0
   - **Failed Request Percent High**
     - **Current Threshold:** 5.0
     - **Recommended Values:** 4.0

2. Click Recommended Values to display the range of recommended values for the associated rule.

3. Compare the possible Recommended Values that appear with the value in the Current Threshold field. As you determine the best threshold rule setting, keep your goals for this rule in mind. Also, consider any additional selection criteria as you compare the various values. See the “Additional selection criteria” section on page 273 for details.

4. Repeat Step 1 through Step 3 for each rule and its associated monitoring plan. If you know that you are going to select or deselect the recommended threshold settings for a schedule, you can use these options:

   - **Click All** to select all of the recommended threshold settings for a monitoring plan.
   - **Click None** to deselect all of the recommended threshold settings for a monitoring plan.
Additional selection criteria

The following list identifies more criteria you might consider for selecting one value and not another:

- How often you want alerts generated
- Factors unique to your resource’s performance
- Your knowledge of the system’s operational needs and goals

Submitting your threshold setting selections

When you click **Update Selected Rules**, OpenEdge Management applies all of your selections at the same time. There is no undo option associated with this group submission. To reset any values back to a previously defined setting, you must access the resource’s monitoring plan, display the individual rule, and override the current value that appears.
Determining the effectiveness of your selections

The most effective way to determine if your threshold adjustments are serving your needs is to review your alert notifications. Strive for a threshold setting that is consistent with your resource and business needs. If you find you are receiving alerts too frequently or too infrequently to suit your operational needs, you should further refine your threshold settings.
Analyzing OpenEdge Application Performance

This chapter describes how you can use OpenEdge Management to analyze OpenEdge server application performance, as detailed in the following sections:

- Overview
- Investigating application performance issues
- OpenEdge Management in the workplace
- Planning an application performance review
- Responding to an application crisis
- For more information about application performance
Overview

System administrators deal with a variety of situations that threaten the performance, and even the availability, of a production system. Small resource issues can become bigger issues if left unaddressed. Larger resource problems can threaten the health of the system, jeopardizing critical business operations.

To track and respond to resource situations, system administrators need the correct data from which to determine corrective action. Regardless of the type of problem that might occur, each situation requires investigation and a solid recovery plan based on valid data. With the right data, a system administrator can determine options and plan short- or long-term strategies and solutions. Every strategy should include a solid recovery plan.

The following sections describe:

- **Investigating application performance issues**
  
  This section provides a model for administrators to use.

- **OpenEdge Management in the workplace**
  
  Using the fictitious company XYZ Corporation, information in this section provides background for the performance scenarios that follow. Both scenarios use the AppServer as a key component.

- **Planning an application performance review**
  
  This sample scenario shows how one administrator's proactive work practices using OpenEdge Management reports help to uncover clues about application performance changes and degradation.

- **Responding to an application crisis**
  
  This sample scenario highlights how the use of various OpenEdge Management features can help administrators quickly analyze and respond to a system or application problem.

**Note:** These scenarios are intentionally limited in scope. They are provided to help you understand some of the general principles by which OpenEdge Management features can be used to investigate and troubleshoot. Keep in mind that elements such as your company’s application and database designs will potentially play a larger role in performance issues than is described in these fictitious circumstances.
Investigating application performance issues

With the aid of OpenEdge Management, you can follow a simple process to identify, understand, and address performance issues. This process involves:

- Understanding your business requirements and reviewing them periodically. It is essential to have a thorough knowledge of your business needs, work practices, and acceptable and unacceptable trade-offs. With this fundamental understanding, you can use OpenEdge Management-supplied data to proactively anticipate and plan for change, minimizing the effects of system problems on your business operations.

- Defining your problem or goal clearly. Given your business and work practices, ask:
  - What problems do you want to anticipate or eliminate?
  - What performance goals would you like to achieve?

Whatever the problem you want to minimize or eliminate, or the performance goal you want to achieve, define it in a concise manner.

- Reviewing OpenEdge Management-supplied data to investigate and analyze your problem or goal. Use your problem definition to review OpenEdge Management-generated information to better understand your problem. Through a process of elimination, you can evaluate the data and identify components that can potentially contribute to a given problem.

- Documenting the steps you perform to address your issues, and test all documented options that you generate. Not all problems or performance issues can be resolved immediately. Maintain a log of issues and a checklist of areas investigated to solve a given problem. Review them periodically, and you may be able to improve on your original solution.
OpenEdge Management in the workplace

This section describes the process of investigating application performance issues using a fictitious company, XYZ Corporation. At XYZ, the administrator has installed and configured OpenEdge Management.

OpenEdge Management at XYZ Corporation

The XYZ Corporation’s system administrator has customized his OpenEdge Management resource monitoring capabilities and frequently consults the system’s data as monitored by OpenEdge Management. For example, this administrator:

- Sets up the Trend performance data option for all monitored resources, including AppServer brokers. This feature helps him review real time and historical data available for reports, in this case the Performance and Profile reports.

- Establishes rules from the Library menu option as default rules for all AppServer broker resources for their performance criteria value: Average Procedure Duration High, Queued Request Percent High, Rejected Request Percent High, and Agent (Server) Unavailable. Establishing these rules with threshold values that are unique to this system environment is key because of the heavy network- and AppServer-related processing demands. The administrator also sets up alert and actions for each of these rules.

- Consults the Broker Performance View and Servers Performance View for AppServer broker and server performance statistics frequently throughout the work day for a real-time picture of broker and server activity levels.

- Sets up the AppServer brokers and servers on the My Collections Home page, along with other vital system operations such as memory and CPU consumption, so the data can be quickly referenced. Among other standard viewlets, the administrator displays resources running with alerts, active monitoring plans, and running reports viewlet options. The administrator also monitors all those viewlets related to the AppServer brokers.

- Reviews the System Activity report frequently throughout the work day as it displays real-time system performance and resource usage details.

- Reviews the Database Summary report frequently throughout the work day as it displays real-time system performance and resource usage details.

- Consults the AppServer-related log files for which monitors have been set up: the AppServer broker log file and the AppServer servers log file.

The administrator regularly reviews these pieces of data as they can provide clues about the system’s application performance.

Consulting OpenEdge Management documentation

This administrator also frequently references the information in the OpenEdge Management documentation set and context-sensitive online help.
Planning an application performance review

As a matter of good practice, the system administrator at XYZ Corporation is always on the watch for ways to improve the application's performance. With a high volume of data entry taking place between 9 AM and 6 PM on the system, and most of the procedures distributed and run remotely on an AppServer, the users expect a consistently high level of application performance and availability. The administrator has learned over time how to deliver system availability that is consistent with this goal, and has come to learn that the application's performance depends on the effectiveness of four key elements:

- The application's integrity
- The application's efficiency
- The database and servers responsiveness
- The network's responsiveness

Of course, other technological elements might be considered, but these four remain of primary concern. The administrator is most concerned with OpenEdge Management performance indicators that relate to these elements so as to take action on any potential performance issue before it affects the users and their ability to perform their jobs.

Problem definition

Over the last two weeks, data entry personnel at XYZ Corporation have been mentioning some slight but noteworthy delays in performing routine updates to records on the company’s production system. On one day an update process might go fine, but the next day a similar transaction might take 30 to 40 seconds longer to complete. From a user's perspective, this delay is an annoying problem.

From a system administrator's perspective, it is a bit of a mystery. The administrator can consult the system’s problem log, only to find that it has been several months since there has been an application or system problem of this kind reported. This new performance issue is of concern because any indication of a performance weakness could become a real performance problem if the administrator does not determine the source of the problem as soon as possible.
### Initial investigation

The first question the administrator asks is: “What’s changed in my production environment that is causing poor performance?” To begin solving this performance problem, the administrator starts to list the possibilities, as shown in Table 47. Note the blank, first column in the table. As each possibility is reviewed, the administrator can use this table as a checklist to identify the items requiring further consideration.

**Table 47: Initial investigative checklist**

<table>
<thead>
<tr>
<th>Access and review . . .</th>
<th>As these topics relate to these questions . . .</th>
</tr>
</thead>
</table>
| High-level performance indicators | Have users been complaining about other performance issues that might be related to this performance problem?  
Are any background processes running during these offending times that could be causing program delays? |
| Hardware and/or software component changes | Have there been any changes to the hardware or software installations that might have impacted the application’s performance? For example, has a new disk been added, or a software upgrade been performed in the time period during which problems have been noticed and reported? |
| Possible workload changes | Is it possible that some or all of the application inefficiencies noted are related to the number of users working on the application, causing the delays as noted? |
| Data details in the log files such as the database logs, AppServer log files, customized log files and so forth | Are there any details in the log file data from the time period in which the application was performing poorly that might indicate an application performance problem? |
| The database performance for possible database issues | Does the database need to be tuned? A tuning effort of this kind can provide significant payoff in performance if it is found to be a contributing factor. |
| Data from the OpenEdge Management Trend Database from the troublesome time period | By running reports at different time periods, is it possible to see any patterns in the data or reported application responsiveness that match experiences that the users have reported? |
Drilling deeper into OpenEdge Management-supplied data

In addition to the considerations noted in Table 47, the system administrator reviews the data gathered weekly through the AppServer Application Profile report. When the company installed and started to use OpenEdge Management, they began using the predefined report template feature to run report instances on a weekly basis. This report’s data provides the administrator with a high-level picture of the application’s health. *OpenEdge Management: Reporting* provides details about setting up and using the AppServer Profile report and all the other OpenEdge Management-generated reports.

Looking at the AppServer Profile report

The purpose of the AppServer Profile report is to provide details about procedures run by a broker. The data captured by this report can include these elements:

- How many times a specific procedure ran
- The average and maximum durations of each request
- The number of successful requests
- The number of errors
- The number of times each request quit and stopped

In this instance, the administrator has customized his AppServer Profile report. As shown in the graphical data in Figure 51, this AppServer Profile report presents information about the average time it takes for two different procedures to run on the AppServer. Reviewing and routinely comparing reports from different time periods provides this administrator more insight into the AppServer’s performance.

Finding performance-related clues in the AppServer Profile report

The administrator knows that reviewing performance details about two of the ABL procedures might provide performance clues. Performance issues related to these high-level rate procedures—*zeta.p* and *zed.p*—might impact the application’s performance.
Figure 51 shows typical AppServer workload-related data that is consistent with an average weekday afternoon at the XYZ Corporation.

The AppServer Profile report that appears in Figure 51 is set up to do the following:

- Capture the average time that it takes two individual ABL procedures—zeta.p and zed.p—to run during the system’s peak operational time.

By selecting the Average Procedure Duration High rule on the AppServer’s monitoring plan and identifying a polling interval threshold for it, the administrator can monitor the AppServer’s performance and behavior based on values that are significant to his performance expectations. For details about monitoring plans, see Chapter 11, “Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters.”

- Display this data in a graphical mode in a browser.

These two procedures, zeta.p and zed.p, are among the procedures that the AppServer broker, asbroker1, is currently running. This is the kind of normal, predictable AppServer procedure processing that a system administrator likes to see; resources are being used and consumed, but not overly taxed so that the users’ and the company’s business needs are being well met.
The administrator compares the report data results from previous weeks to the data results that appear in Figure 53. The fact that the procedure zed.p is hovering at the defined threshold use of 40,000 indicates that there is likely an otherwise hidden performance issue to investigate.

Figure 52: AppServer Profile Report for Bad_Afternoon data

The same type of average request duration data that appears in Figure 52 tells a very different story about another workday afternoon at XYZ Corporation. By comparing the generated data in Figure 51 with the generated data for the same procedures and associated brokers in Figure 52, the administrator can see that the slow growth in the average time it takes to complete a process requested by either the zeta.p or zed.p does cause problems if left on this current growth rate. As Figure 52 shows, these procedures are either exceeding, or trending toward the possibility of exceeding, the threshold of 40,000. Given the data as reported in the Bad_Afternoon report, the administrator could begin to make some notes about the application’s response to pass along to the company’s programmers so that they can consider changes to rebalance the work load.

The administrator’s routine review and comparison of the data presented in Figure 51 and Figure 52 have helped him to thwart a potential application crisis. This problem detection points to where the administrator’s code review with developers or system engineers should begin.
Using report data to minimize an impending application performance crisis

Figure 53 shows the type of data the system administrator faces without diligence in routine review and investigation of OpenEdge Management report data.

Assuming the same 40,000 threshold for all of the procedures listed in Figure 53, it is very apparent that processing on this work day afternoon has reached crisis proportions. Not only are the procedures zed.p and zeta.p exceeding the threshold, the lockme.p procedure is causing more problems at approximately 1:30 PM and again at 3:30 PM.

Testing and documenting your potential solutions

XYZ Corporation is fortunate to have hired this well-seasoned administrator who keeps a log of application and system problems, and consistently records the actions to correct difficulties.

To monitor this particular situation to ensure that the problem has been resolved satisfactorily, the administrator must:

- Work with the company’s application group to ensure that they receive the time and records needed to address the application’s performance problem
- Monitor the impact of the fix closely to ensure that it did correct the problem and did not introduce any other application or system difficulties
- Interview the application users to ensure that they experience an improvement in their application throughput
- Document the problem and the efforts to correct the problem so that the information will be available for future reference
Responding to an application crisis

Despite all the best plans, an application crisis can occur. By employing various features and functionality offered in OpenEdge Management, a system administrator can arm himself with some fundamental informational tools. These tools help provide immediate data that is useful in understanding and addressing a crisis.

This section describes another problem that the system administrator from XYZ Corporation must face.

Note: The OpenEdge Management features outlined in the "OpenEdge Management at XYZ Corporation" section on page 278 also apply to this sample scenario.

Problem definition

The XYZ Corporation’s system administrator is having a routine, mid-week work day. Normal system processing is occurring as the system is running fine. Response time is good, and the users are very pleased.

Unexpectedly, the system's performance begins to decline rapidly. The system administrator begins receiving end-user calls. The complaints are all the same: Transactions are not going through, and data entry tasks cannot be completed. Even simple look-up activities are failing.

Initial investigation

In an application crisis situation of this type, the administrator can leverage OpenEdge Management-supplied information to alert him to immediate problems and provide data related to the crisis.
Table 48 lists the possibilities the system administrator considers. Note the blank, first column in the table. As each possibility is reviewed, the administrator can use this table as a checklist, identifying the items requiring further consideration.

Table 48: Crisis review checklist

<table>
<thead>
<tr>
<th>Access and review . . .</th>
<th>To . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alert and other data indicators that have been set up to monitor and display data on the collections page</td>
<td>Quickly examine issues that might be the reason for this dramatic change in performance. As previously noted in the “OpenEdge Management at XYZ Corporation” section on page 278, the administrator has several indicators set up, including viewlets related to the AppServer brokers.</td>
</tr>
<tr>
<td>Data details in log files such as the database log files, AppServer log files, customized log files and so forth</td>
<td>Examine log file data from the time period during which the crisis initially occurred. Determine if there is any noteworthy, relevant information in error logs related to the crisis situation.</td>
</tr>
<tr>
<td>Network- and server-related data details, using TCP resource monitors previously set up</td>
<td>Determine the status and response time, if any, for mail, FTP, and Web Servers that might be running on the network.</td>
</tr>
<tr>
<td>Network-related data details, using Packet Internet Grouper (PING) (ICMP) resource monitors previously set up</td>
<td>Determine if network resources are available.</td>
</tr>
<tr>
<td>Server-related data details</td>
<td>Determine if AppServer server details and/or AppServer broker details are of help in problem determination.</td>
</tr>
</tbody>
</table>

While quickly scanning the checklist, the system administrator remembered what the users said about the performance issue: Nothing was working. This could indicate there is a network problem to resolve, but where is the source? Since most of the transactions related to the procedures that were not currently functioning run on a remote AppServer, the administrator decides to follow this investigative path.
Drilling deeper into OpenEdge Management-supplied data

As the checklist items in Table 48 indicate, the administrator needs quick access to performance data. In a crisis situation such as this one, the administrator needs to know that the information available to determine, resolve, and learn from the problem situation to minimize—if not eliminate—such a crisis of this kind from reoccurring is accurate and timely.

Accessing and examining AppServer data

The administrator accesses the OpenEdge resources in the OpenEdge Management console, browsing to the AppServer resources. The network uses only one AppServer, thus the administrator can immediately click on either of the AppServer Operational views data—the Server Performance View or Broker Performance View.

Note: For detailed procedures on setting up and accessing AppServer resources, including the AppServer Operational views, see Chapter 4, “Managing AppServer Data.”

Scanning alert detail on the collection page and also on individual resources shown in the list frame, the administrator notices that there are no new alerts.

The administrator then accesses the Database page and scans for relevant information in the Operational views and Informational views sections. Finding no clues related to the issues, the Server Performance View details are shown next. The server state and server pool summary details that display in this view, however, are not helpful. In this situation, the administrator considers where the most valuable information would be found, and clicks on the Broker Performance View.
Figure 54 shows the data that appears in the **Broker Performance View** for the asbroker.

**Note:** In the figures presented in this section, the colors in the graphs are intended only to distinguish one data element from another.

The administrator scans the summarized data in **Broker Requests**, noting the fact that the total of **Queued** requests is almost the same as the total number of **Rejected** requests. At this point, the administrator knows that there is a problem in this area, but still needs to do more research. From the previous use of the data on the **Broker Performance View** page, the administrator knows that the **AS Broker Activity Status** graph is a representation of the **Queued** and **Rejected** values noted in **Broker Requests**.
The administrator clicks the binocular icon associated with the **AS Broker Activity Status** and the **AS Broker Activity Status** pinup appears, as shown in Figure 55.

![Figure 55: AS Broker Activity Status for asbroker1](image)

The pinup graph in Figure 55 focuses on a much smaller time frame for the data, and the data confirms the very poor performance noted on the main **Broker Performance View** page. In fact, the number of rejected requests really is as high as the number of queued requests. What happened at the time frame indicated on the **AS Broker Activity Status** to cause this dramatic situation?
The administrator now decides to access the asbroker1’s log file, hoping to find more evidence of these same difficulties. Note the several **No Servers available** and the **Clients disconnected** error messages in the log, as shown in **Figure 56**.

**Note:** For the information that the administrator references about accessing the AppServer log file, see the “Accessing and reviewing AppServer-related log file data” section on page 117.

![AppServer asbroker1 log file](image)

**Figure 56:** AppServer asbroker1 log file

At approximately the same time that the number of rejected requests was starting to approach the total number of queued requests, as shown in **Figure 54**, the error log reports that the servers are not available and that connected clients are being disconnected.

The administrator redisplays the **Servers Performance View** page. All the investigative activities have confirmed that a runaway AppServer process has brought down the network, leaving the users unable to perform their application transaction-related tasks.
Figure 57 shows the suspicious data in the **CPU Use** column, indicating that no CPU consumption is occurring for the servers.

![Figure 57: Servers Performance View page for asbroker1](image1)

By clicking on **PID 2996** as shown in Figure 57, the administrator can display the specific **PID** process ID number that is the problem process. By clicking the **Kill** button on the **Broker process** page, the administrator can terminate this process, ending the network and application difficulties.
Testing and documenting your potential solutions

The administrator puts two plans in place to monitor this particular situation.

Adding new OpenEdge Management monitoring plans

The administrator determines there are a few additional setup options and controls to consider implementing. Using OpenEdge Management, the administrator can:

- Add a monitoring plan and rule for the CPU on the asbroker process so that the system will alert the administrator should processing not go according to expectations
- Add a system level CPU monitor and associated rule also to alert the administrator to unacceptable asbroker processing

Gathering more data

Even though the immediate crisis is resolved, the administrator’s primary goal is to try to prevent it from reoccurring. The administrator can use the following list to identify other ways to explore whether the crisis was a one-time occurrence or a problem that will happen again:

- Look at a larger historical time period in OpenEdge Management using reports. Report data might show other instances in which there was a runaway process and what activities occurred to correct the problem.
- Review what has changed on the system to determine if a recent change has caused the issue.
- Check the issues and answers available in the KnowledgeBase (KBase) section of the Knowledge Center available by accessing: http://www.progress.com
- Document the problem and the efforts to correct it so that the information will be available for future reference.
For more information about application performance

The application performance topic is a large one. For more information about performance tuning and installation options, as well as some troubleshooting hints and tips for maintaining your OpenEdge-based application with OpenEdge Management, see *Mastering the OpenEdge Database with OpenEdge Management*.

You can find this document in the following location on PSDN:

http://communities.progress.com/pcom/docs/DOC-48228
Managing OE Web Server Data

This chapter presents OpenEdge Management features and functionality related to the OE Web Server, as outlined in the following sections:

- OE Web Server overview
- Reviewing OE Web Server status
- Modifying OE Web Server control settings
- Accessing and reviewing OE Web Server log file data
- Using the OE Web Server log file viewer
- Examining OE Web Server Operations views
OE Web Server overview

OpenEdge Management supports a variety of tasks that you can perform to manage an OE Web Server instance, including:

- Reviewing the OE Web Server instance's current operating status and associated details
- Enabling or disabling the Manager instance
- Accessing and viewing Manager data collected through log files
- Monitoring and managing OE Web Server instances using monitoring plans and rules

You must have appropriate OpenEdge Management authorization to perform several of the tasks. See the “Role authorization and OpenEdge Management tasks” section on page 46 for details.

Configuring OE Web Server properties

You can also use OpenEdge Management to configure OE Web Server properties. For details, see OpenEdge Management and OpenEdge Explorer: Configuration.
Reviewing OE Web Server status

The OE Web Server Status section of the OE Web Server Details page provides a brief status for the OE Web Server. Figure 59 shows the Status section.

Figure 59: OE Web Server Status section

Table 49 describes each of the OE Web Server details in the OE Web Server Status section of the OE Web Server Details page.

Table 49: OE Web Server Status details

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Container</td>
<td>The container’s name.</td>
</tr>
<tr>
<td>Host</td>
<td>The host machine’s name.</td>
</tr>
</tbody>
</table>
| Adapter | The running status of the OE Web Server. Possible values are:  
  * ACTIVE — The adapter is currently running.  
  * Not Running — The OE Web Server is not currently running.  
  * Disabled/offline — The OE Web Server is currently disabled and REST applications cannot be configured. |
| URL | URL of where oerm has been deployed. For example, http://localhost:8080/oerm |
Modifying OE Web Server control settings

The Command and control section of the OE Web Server Details page for an adapter instance allows you to perform various tasks, such as:

- Start and stop the OE Web Server instance, and change its associated property settings
- Obtain and review OE Web Server-related data collected through a log file associated with this instance
- Deploy, list, enable, disable and undeploy REST Applications
- Log into or log off from the OE Web Server
- Configure the OE Web Server’s properties

Figure 60 shows the Command and control section of the OE Web Server Details page.

Figure 60: Command and control section

Table 50 identifies where you can find information about other functionality related to the OE Web Server Command and control section.

Table 50: Additional OE Web Server information

<table>
<thead>
<tr>
<th>For details about . . .</th>
<th>See . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log file monitors and viewers</td>
<td>The “Accessing and reviewing OE Web Server log file data” section on page 300</td>
</tr>
<tr>
<td>Log file monitoring plans and rules</td>
<td>The “Customizing an OE Web Server log file monitor” section on page 302</td>
</tr>
<tr>
<td>Log file monitor rule sets</td>
<td>Chapter 11, “Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters”</td>
</tr>
<tr>
<td>Configuration, deployment, and general</td>
<td>OpenEdge Management and OpenEdge Explorer: Configuration</td>
</tr>
<tr>
<td>administration</td>
<td></td>
</tr>
</tbody>
</table>
OE Web Server Control

The **OE Web Server Control** page summarizes details about a specific OE Web Server resource. From this page, you can start and stop an OE Web Server and change some related properties, as needed.

The following sections describe the two areas of the **OE Web Server Control** page.

**Manager summary**

The **Manager summary** section presents read-only values for these fields: the OE Web Server’s name, its host machine’s name, the manager’s current status, and the manager’s URL.

Note that the **Manager name** and **Host** (machine name) display values as they are defined in the **ubroker.properties** file.

**Properties**

The **Properties** section displays the status of the **Enabled** option. When selected, this option indicates that the OE Web Server resource recognizes a monitoring plan and its associated rules when the resource is active.

During the discovery process, all OE Web Server instances that OpenEdge Management discovers and lists in the list frame under the OE Web Server category are enabled by default. Once a manager is enabled, OpenEdge Management uses the OpenEdge Management-supplied default values to establish a monitoring plan and rules. (You can customize the plan and rules at any time.)

A check mark associated with the **Enabled** option indicates that the option is selected. To deselect the option, click **Edit**. Clear the check mark, and click **Save**. Note that the **Enabled** option is the only item you can change on the **OE Web Server Control** page.

**Logging in to or logging off from the OE Web Server**

If your OE Web Server requires that you log in, click **Login** in the **Command and control** section of the **OE Web Server Details** page.

You can choose the type of authentication that you will use to login to OE Web Server from the **Configuration** page in the **Command and control** section.

**Note:** If you have selected REST administration authentication as **No user authentication** or **Use default authentication**, you are logged in by default and need not provide a username and password in the Login page to login to OE Web Server.

Enter the username and password details in the respective fields.

- **username** — A username required to access the Server.
- **password** — The password for the specified username.

Click **Submit**.

Click **Log Off** in the **Command and control** section of the **OE Web Server Details** page to log off from the OE Web Server.
Accessing and reviewing OE Web Server log file data

OpenEdge Management supports log file monitors and associated viewers for OE Web Server resources. Log files can store a large amount of data. Therefore, monitoring data collected within these files might help you to better determine performance expectations related to OE Web Servers.

For more general information about OpenEdge Management log file monitor features and functionality, see *OpenEdge Management: Resource Monitoring*.

**Note:** Log file monitors are not available for remote OE Web Servers.

Getting started with log files for OE Web Server resources

For each local OE Web Server instance that OpenEdge Management discovers, OpenEdge Management supports monitoring its associated log file monitor. An OE Web Server log file resource monitor is not enabled until the OE Web Server for which the resource monitor was created is started. When the log file monitor first starts monitoring an OE Web Server instance, it always starts at the end of the log file.

**Naming conventions**

OpenEdge Management prepends the OE Web Server's name to the name of a log file monitor and its associated viewer. For example, OpenEdge Management generates the following log file monitor for an OE Web Server instance named *oerm* and the container named *nbaspauldixp2*: *nbaspauldixp2.oermLogFileMonitor*. The associated log file viewer is named *nbaspauldixp2.oerm OE Web Server Log File Contents*.

You cannot change these names.

**Characteristics of OE Web Server resource log file monitors**

Data that you can capture and view using OE Web Server resource log file monitors and viewers can help you:

- Ensure the integrity of the log files by monitoring files for errors and allowing you to define actions that trigger when errors occur.
- Use predefined OE Web Server-related search criteria, or create your own, to run against the data in these log files. OpenEdge Management predefines search criteria to support log file monitors.
You can create and maintain the search criteria for each OE Web Server resource instance in the following two locations:

- At the OE Web Server resource local file monitor instance level. The search text and type are not shareable at this level.

- At the OpenEdge Management Component Library level under the OE Web Server subcategory. The search text and type are shareable at this level.

See the "Customizing an OE Web Server log file monitor" section on page 302 for details.

The predefined search criteria provide:

- Detailed data about the recorded operations of an OE Web Server instance
- A means for extracting detailed data

**OE Web Server log file monitor default values**

Once an OE Web Server is enabled, OpenEdge Management creates its log file monitor using several default values. Of all the default OE Web Server log file monitor properties, you can modify only its description. However, you have several options regarding the Search Criteria you can use for the log file monitor. See the "Customizing an OE Web Server log file monitor" section on page 302 for details.

The default values are as follows:

- The OE Web Server default log file monitor is disabled until the OE Web Server is first started.

- The **Bookmark** is set to **Last Line**, and it is unique.

- The **On First Poll** property is set to **Search From End**.

For detailed information about the Bookmark feature and **On First Poll** property as they relate to log file monitors in general, see *OpenEdge Management: Resource Monitoring*. 
File Resource Defaults

OpenEdge Management also supports a polling interval default value for the OE Web Server log file monitor.

To display or update a polling interval default value:


3. Enter the polling interval in the OE Web Server resource defaults section and click Submit.

You can revert to the original OpenEdge Management-supplied default value set for the Polling Interval field at any time by clicking Restore Defaults.

Reviewing predefined log file monitor search criteria

Each log file provides predefined search criteria that address common OE Web Server events. Use these searches as defined, or copy and customize them. Review the predefined search criteria before you customize an OE Web Server log file monitor.

Note: You are recommended not to edit or delete the predefined criteria.

To review predefined log file monitor search criteria:

1. Click Library from the management console menu bar.

2. Click the plus (+) icon besides Search Criteria in the list frame to expand this category.

3. Click OE Web Server in the list frame. A list of predefined search criteria related to the category that you selected appears in the detail frame.

Note: You can also create your own search criteria to address a particular OE Web Server error. See the “Customizing an OE Web Server log file monitor” section on page 302 for details.

Customizing an OE Web Server log file monitor

This section describes how to customize an OE Web Server log file monitor.

To customize an OE Web Server log file monitor:

1. From the grid frame for Resources, click the Edit icon to display the details page for the OE Web Server instance whose log file monitor you want to customize. See
the “Accessing OpenEdge Management resource information” section on page 54.


3. Customize or view the contents of an OE Web Server log file monitor as follows:

   • Click Add Plan to add an existing monitoring plan to this resource monitor.
   • Click Edit at the top of the page to change the description of the log file monitor.
   • Click Log File Viewer at the top of the page to view the contents of the log file monitor.

Note: OpenEdge Management prevents the assignment of schedules that share days or times that overlap. For example, if you have a Default_Schedule set up for a resource monitor, you cannot set up an additional plan because the Default_Schedule is defined for 7 days a week, 24 hours a day. You must modify or remove the Default_Schedule to set up additional plans.

4. To add individual rules, click Edit within the monitoring plans section to view the edit page for the log file monitor.

5. Click Add Rule under the Rules selected for this plan section of the monitoring plan page. You can add a rule that is already defined and/or create a new rule.

6. To use an OE Web Server rule already defined in the library:

   a. Select OE Web Server from the drop-down list associated with the Choose Criteria Category.
   b. Select the appropriate value from the drop-down list associated with the Choose Search Criteria.

7. To create a new OE Web Server rule:

   a. Click Create Criterion to display the Create Search Criterion page.
   b. Enter values in the required fields: Name (identifies the name of the search criterion you are creating) and Search Text (identifies the information you are looking for in the log).
   c. Choose whether to use an existing category or use a new category for the rule. Then select the OE Web Server category.
   d. Click Save. The Create Log File Rule page reappears.

The values you defined and selected to create a rule on the Create Search Criterion page are now available on the Create Log File Rule page. The Choose Search Category drop-down list displays the name you entered in the Name field on the Create Search Criterion page. The Choose Criteria Category drop-down list displays the category in which you elected to store the new rule.
8. Select the appropriate values from the **Severity** and **On Alert Action Perform** drop-down lists to complete the alert severity and action definition that you want to associate with this rule.

9. Click **Save**.

10. To add another individual rule, repeat Step 5 through Step 9.

11. Click **Select Rule Sets** to create a new log file rule or choose from existing rule sets to add to the monitoring plan. If you choose **Select Rule Sets**, you can select them from a list of predefined rule sets to add to the monitoring plan.

12. Click **Save**.

13. Click the OE Web Server instance’s link on the breadcrumb trail to display the detail page again.

14. Click **Log File Monitor** again to view the new rules updated in the **Rules Summary**.

For more information about editing search criteria for rules, see the appropriate sections of *OpenEdge Management: Resource Monitoring*.

**Note:** You can copy the default OE Web Server log file rule set, but you cannot rename or delete it.
Using the OE Web Server log file viewer

To view the contents of an OE Web Server log file, access the viewer associated with each individual log file.

The log file viewer allows you to examine the contents of an OE Web Server log file in HTML format. You can access a log file viewer from the following two locations:

- Click the Log File Viewer link in the Command and control section of the OE Web Server Details page.
- Click the Log File Viewer button that appears at the top of the log file monitor summary monitoring page.

The following information will help you use the OE Web Server log file viewer:

- Use the Show field to control how many OE Web Server log file entries appear at one time. The number entered into the Show field cannot be less than 10.
- Use the Overlap field to control how many entries are repeated from screen to screen.

Note: The value in the Overlap field must not be more than the number in the Show field minus one. For example, if you show 30 entries, you can overlap only 29 or fewer of them.

- Click Reload after changing the values in either the Show field or Overlap field. OpenEdge Management prompts you to click Reload. A warning message that reads changed, reload needed appears in the File log status field in the log file summary section of the page.

If you do not reload, the viewer displays the previous values.

- Click Go To to control which numbered entry in the log file the viewer begins its display with. For example, a value of 10 entered into the Go To field begins the display from the tenth log file entry.

Note: You must click Go To after entering a value in the Go To field, or the viewer will not update its display.

- The default display of entries is in ascending order. Choose Descending to change the display. Note that the Show field dictates the number of entries shown, whether they appear in ascending or descending order.

- Click First to display the first x entries, where x is the value in the Show field.

- Click Prior to display the previous x entries, where x is the value in the Show field.
• Click **Next** to display the next \( x \) entries, where \( x \) is the value in the **Show** field.

• Click **Last** to display the last \( x \) entries, where \( x \) is the value in the **Show** field.

• To view additional log file entries without changing your current starting log file entry, leave the **Go To** field blank, change the value in the **Show** field, and click **Reload**.

### Refreshing log file data

Periodically refresh log file data. Select the **Refresh** page icon from the toolbar for either the list or detail frame to repaint an existing page. You can also set a default value that OpenEdge Management uses to automatically refresh the management console.

To set a default value that OpenEdge Management uses to automatically refresh the management console, select **Options** → **User Preferences** → **Automatically refresh pages**.

Refresh data to avoid the following issues:

• OpenEdge Management considers a viewer that has been inactive for more than four hours stale. Once a viewer becomes stale, OpenEdge Management releases most of any memory being held. If you try to use a stale viewer, OpenEdge Management automatically reloads the file. Because additional resource activity might have occurred during the viewer’s inactivity, the reloaded log file view might not match the previous log file view of that resource.

• OpenEdge Management considers a viewer that has been inactive for forty-eight hours dead. Once a viewer dies, OpenEdge Management releases all of its memory. To return to the log file displayed in a dead view, you must renavigate to it, regardless of whether you pinned up the view or saved a link to it before the viewer died.
Examining OE Web Server Operations views

The OE Web Server Details page provides an Operations views section that allows you to access and review status data related to the performance of the following:

- **Status** — OE Web Server status information
- **Statistics** — OE Web Server run-time statistics information
- **Run-time properties** — OE Web Server run-time properties information

Accessing and reviewing OE Web Server status

The OE Web Server Operations views section allows you to display status information about the OE Web Server’s performance. Review this data frequently, as it will help you make informed decisions about your use of the OE Web Server.

To display and review OE Web Server status:

1. From the grid frame for Resources, click the Edit icon to display the details page for the OE Web Server instance whose status you want to review. See the “Accessing OpenEdge Management resource information” section on page 54 for the detailed procedure.

2. Click Status in the Operations views section. The following status details appear:
   - Whether the REST instance is running
   - Whether access to administrative functions, OE Web Server applications (by clients), and OE Web Server document retrieval is enabled

Accessing and reviewing OE Web Server statistics

You can view statistical details about an OE Web Server instance.

To access and review OE Web Server statistics:

1. From the grid frame for Resources, click the Edit icon to display the details page for the OE Web Server instance whose statistics you want to review. See the “Accessing OpenEdge Management resource information” section on page 54 for the detailed procedure.

2. Under Operations views, click Statistics.

3. Review the statistics details. For more information about the statistics, see the relevant section in OpenEdge Management and OpenEdge Explorer: Configuration.
Accessing and reviewing OE Web Server run-time properties

You can temporarily change some OE Web Server (OERM) instance properties at run time without restarting your Java servlet engine (JSE). This is most useful for testing and debugging. The next time you restart your JSE, these settings revert to the current configuration settings for these properties in the `ubroker.properties` file.

To change OE Web Server instance run-time properties:

1. From the grid frame for Resources, click the Edit icon to display the details page for the OE Web Server instance whose runtime properties you want to change.
2. Under the Operations views section, click Run-time Properties.
3. Review the run-time properties. For more information about the properties, see the relevant section in *OpenEdge Management and OpenEdge Explorer: Configuration*. 
Index

A

AdminServer warm start
effects on OpenEdge Management 58
stages 58

Agent Unavailable rule 254

Application crisis
responding to 285
review checklist 286

Application performance
AppServer Operational views 287
AppServer Profile report 281
business requirements 278
consulting documentation 278
crisis example 279
planned review 279

Application performance issues
at a fictitious company 278
checklists 280, 286

Application review
planned response 279

AppServer
adding or trimming 111
Broker Control page content 102
Broker Performance View 126
broker status details 99
changing broker controls 103
Informational views 131
killing a process 109, 112
log file viewer
considerations 125
modifying control settings 101
Operational views
overview 126
troubleshooting 287
overview 98
See AppServer broker log file monitor
See AppServer server log file monitor
Server Performance View 129
viewing broker process details 105

AppServer broker log file monitor
characteristics 118
considerations 120
customizing 121
default values 119
log file data 117
naming conventions 117
See AppServer log file viewer

AppServer Internet Adapter
Broker Control page content 178
log file monitor
characteristics 179
considerations 182
customizing 183
default values 181
log file data 179
naming conventions 179
search criteria 182
log file viewer
refresh data 186
using 185
managing
overview 176
modifying control settings 177
schedules 183

AppServer log file viewer
troubleshooting 290
using 124

AppServer Profile report
troubleshooting 281

AppServer server log file monitor
  characteristics 118
  considerations 120
  customizing 121
  default values 119
  log file data 117
  naming conventions 117
See AppServer log file viewer
See AppServer log file viewer

Average Procedure Duration High rule 251, 254

B

Baseline value See Configuration Advisor

C

Collection views
  defining viewlets 61

Configuration Advisor
  and data collection 263
  effective selections 274
  evaluating 270
  overview 262
  process details
    a rule definition 265
    data analysis 264
    recommendations 265
    user-supplied criteria 263
  rules
    additional considerations 263
    WebSpeed and AppServer 262
  setting rules-related criteria 267
  submitting selections 273
  understanding recommendations 269
  using the Detail button 271

D

Data collection
  and AppServer brokers 104
  and Configuration Advisor 267
  and trending data 73, 104
  and WebSpeed brokers 73
  fields related to
    Broker statistics available 73, 104
    Collect Statistics 73, 104
    Trend Performance Data 73, 104
  options and conditions
    AppServer brokers 104
    WebSpeed brokers 73
  setting for AppServer 105
  setting for WebSpeed 74

DataServer
  Broker Control page content 159
  broker log file monitor
    customizing 168
    default values 167
    log file data 165
    naming conventions 165
  broker status details 157
  changing broker controls 160
  Default schedule 169
  killing a broker process 163
  log file viewer
    refreshing data 173
    using 171
    managing
      overview 156
      modifying control settings 158
      viewing broker process details 161
  Default monitoring plan details 242
  examples 244
  Default polling and trend values
  reviewing 241
  Detail menu bar 49

G

Graphs 59

I

Implementing business requirements
  examples 278

L

Logging in
  to the Web server 213

M

Management console
  menu bar 48

Menu bar
  detail 49
  management console 48

Messenger
  Control page content 228
  log file monitor
    characteristics 229
    considerations 231
    customizing 233
    default values 231
    log file data 229
    naming conventions 229
Index

search criteria 231
log file viewer
considerations 236
using 235
managing
overview 226
modifying control settings 227

Monitoring plans
maintaining 245

N

NameServer
changing controls for 138
Control page content 137
log file monitor
characteristics 139
considerations 141
customizing 142
default values 140
log file data 139
log file viewer
considerations 146
using 144
modifying control settings for 136
Operational views
status details 147
overview 134
status details 135

NameServer Informational views
Properties details 151

O

OE Web Server
control settings 298
log file data 300
properties 296
run-time properties 308
statistics 307
status 307

OpenEdge resources
deleting 57
in list frame 54

OpenEdge servers 38
features 44
overview 40
prerequisites 45

P

Pinup charts 63

Q

Queued Request Percent High rule 254

R

Rejected Request Percent High rule 253

Resource monitoring
overview 238
terminology 238

Rule details
common characteristics 251
general conventions 250

Rule set
and monitoring plans 259
characteristics and benefits 256
copying 258
creating 257
deleting 259
editing 258
evaluating when rules in common 259
overview 256

S

Schedules
Default
AppServer 121
AppServer Internet Adapter 183
DataServer 169
Messenger 233
NameServer 142
Sonic MQ Adapter 201
Web Services Adapter 218, 303
WebSpeed 87

Server Unavailable rule 254

SonicMQ Adapter
broker status details 189
changing broker controls 192
Control page content 191
killing a broker process 195
log file monitor
characteristics 198
considerations 200
customizing 201
default values 199
log file data 197
naming conventions 197
search criteria 200
log file viewer
considerations 204
using 203
managing
overview 188
modifying control settings 190
Index

Operations views 205
viewing broker process details 193

T

Transaction Server
See WebSpeed Transaction Server

U

ubroker properties file 42

W

Web Services Adapter
Control page content 213, 299
log file monitor
characteristics 214, 300
considerations 216, 302
customizing 217, 302
default values 215, 301
log file data 214, 300
naming conventions 214, 300
search criteria 216, 302
log file viewer
considerations 221, 306
using 220, 305
login 213
managing
overview 210, 296
modifying control settings 212, 298
Operations views 222, 307
status details 211, 297
WebSpeed Transaction Server
adding or trimming agents 80
Agent Performance View 94
Agent Pool Control page 76
Broker Control page 70
Broker Performance View 91
changing WebSpeed broker controls 72
killing a WebSpeed agent process 79, 81
log file monitor
characteristics 84
considerations 85
customizing 86
default values 85
log file data 83
log file viewer
considerations 90
refreshing 90
modifying WebSpeed control settings 69
naming conventions 83
overview 66
viewing broker process details 74
WebSpeed broker status details 67
WebSpeed Informational views 96
WebSpeed Operational views
overview 91