Progress®



OpenEdge® Management:
Servers, DataServers, Messengers, and Adapters

OpenEdge®

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Preface

For details, see the following topics:

- Purpose
- Audience
- Organization
- Using ABL documentation
- Typographical conventions
- Examples of syntax descriptions
- OpenEdge messages

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

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

Supporting OpenEdge Servers, Messengers, DataServers, and Adapters on page 21

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

Getting Started on page 29

Describes how to navigate the OpenEdge Management console.

Managing WebSpeed Transaction Server Data on page 45

Explains how to use OpenEdge Management features with WebSpeed Transaction Servers.

Managing AppServer Data on page 71

Explains how to use the OpenEdge Management features with AppServers.

Managing NameServer Data on page 101

Explains how to use the OpenEdge Management features with NameServers.

Managing DataServer Data on page 117

Explains how to use the OpenEdge Management features with DataServers.

Managing AppServer Internet Adapter Data on page 133

Explains how to use the OpenEdge Management features with AppServer Internet Adapters.

Managing SonicMQ Adapter Data on page 143

Explains how to use the OpenEdge Management features with SonicMQ Adapters.

Managing WebSpeed Messenger Data on page 161

Explains how to use the OpenEdge Management features with WebSpeed Messengers.

Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters on page 171

Describes how to set up OpenEdge Management monitoring plans and rules for OpenEdge server, DataServer, Messenger, and Adapter resources.

Calculating Rule Threshold Settings Using the Configuration Advisor on page 191

Describes how to use the Configuration Advisor to generate recommended threshold rule settings for specific WebSpeed and AppServer rules.

Analyzing OpenEdge Application Performance on page 205

Describes how you can use OpenEdge Management features to analyze OpenEdge server application performance.

Managing OE Web Server Data on page 221

Describes how you can use OpenEdge Management features related to the OE Web Server.

Using ABL documentation

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 go to https://docs.progress.com.

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 documentation uses the following typographical and syntax conventions:

Convention	Description
Bold	Bold typeface indicates commands or characters the user types, provides emphasis, or the names of user interface elements.
Italic	Italic typeface indicates the title of a document, or signifies new terms.
SMALL, BOLD CAPITAL LETTERS	Small, bold capital letters indicate OpenEdge key functions and generic keyboard keys; for example, **GET** and **CTRL**.
KEY1+KEY2	A plus sign between key names indicates a **simultaneous** key sequence: you press and hold down the first key while pressing the second key. For example, **CTRL+X**.
KEY1 KEY2	A space between key names indicates a **sequential** key sequence: you press and release the first key, then press another key. For example, **ESCAPE H**.
Syntax:	
`Fixed width`	A fixed-width font is used in syntax, code examples, system output, and file names.
`Fixed-width italics`	Fixed-width italics indicate variables in syntax.
`Fixed-width bold`	Fixed-width bold italic indicates variables in syntax with special emphasis.

Convention	Description
UPPERCASE fixed width	ABL keywords in syntax and code examples are almost always shown in upper case. Although shown in uppercase, you can type ABL keywords in either uppercase or lowercase in a procedure or class.
Period (.) or colon (:)	All statements except DO, FOR, FUNCTION, PROCEDURE, and REPEAT end with a period. DO, FOR, FUNCTION, PROCEDURE, and REPEAT statements can end with either a period or a colon.
[ ]	Large brackets indicate the items within them are optional.
[ ]	Small brackets are part of ABL.
{ }	Large braces indicate the items within them are required. They are used to simplify complex syntax diagrams.
{ }	Small braces are part of ABL. For example, a called external procedure must use braces when referencing arguments passed by a calling procedure.
|	A vertical bar indicates a choice.
. . .	Ellipses indicate repetition: you can choose one or more of the preceding items.

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* or 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:

Syntax

```
ASSIGN   { [ FRAME frame ] { field [ = expression ] }
           [ WHEN expression ] } ...
       | { record [ EXCEPT field ... ] }
```

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**.

1

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 Oracle, and Microsoft SQL Server), AppServer Internet Adapter, SonicMQ® Adapter, and OE Web Servers.

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

For details, see the following topics:

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

Overview

You can use OpenEdge Management to configure and manage various OpenEdge resources. Refer to the following table 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: OpenEdge Management feature availability

Feature available	App Server	Name Server	Web Speed Server	App Server Internet Adapter	SonicMQ Adapter	Data Server	Web Speed Msngr	OE Web Server
Configuration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control (start/stop instances)	Yes	Yes	Yes	No	Yes	Yes	No	No
Enable/ disable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Status	Yes	Yes	Yes	No	Yes	Yes	No	Yes
Operational views	Yes	Yes	Yes	No	Yes	Yes	No	Yes
Log file viewer	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Log file monitor	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Monitoring plans	Yes	Yes	Yes	No	Yes	Yes	No	Yes
Configura- tion Advisor	Yes	No	Yes	No	No	No	No	Yes
Job support	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Report templates	Yes	No	Yes	No	No	No	No	No
Creating rule sets	Yes	Yes	Yes	No[1]	No2	No2	No2	No
Using rules and rule sets	Yes	Yes	Yes	Yes[2]	Yes	Yes	Yes3	Yes
Alerts support	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Scheduling and polling support	Yes	Yes	Yes	Yes3	Yes	Yes	Yes3	Yes
Graph support	Yes	Yes	Yes	No	No	No	No	No
Trend support	Yes	Yes	Yes	No	No	No	No	No

[1] Although you cannot create new rules sets for this resource, you can add existing rules to its default rule set.
[2] For log file monitor only.

Feature available	App Server	Name Server	Web Speed Server	App Server Internet Adapter	SonicMQ Adapter	Data Server	Web Speed Msngr	OE Web Server
My Dashboard support	Yes	Yes	Yes	No	No	No	No	No
Collections support	Yes	Yes	Yes	No	No	No	No	No

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.

DataServers for Oracle and MS SQL Server

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, and the WebSpeed Transaction Server. 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.

Note: When you delete a broker in OpenEdge Management, OpenEdge Managent/Explorer removes the broker instance from the ubroker.properties file, but retains the environment variables associated with the broker in the file. This is because environment variables are shared configuration settings in the ubroker.properties file.

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: A space is not a valid delimiter for setting properties in the `ubroker.properties` file.

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:

WebSpeed	Managing WebSpeed Transaction Server Data on page 45

AppServer	Managing AppServer Data on page 71
NameServer	Managing NameServer Data on page 101
DataServer	Managing DataServer Data on page 117
AppServer Internet Adapter	Managing AppServer Internet Adapter Data on page 133
SonicMQ Adapter	Managing SonicMQ Adapter Data on page 143
WebSpeed Messenger	Managing WebSpeed Messenger Data on page 161
OE Web Server	Managing OE Web Server Data on page 221

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 Overview on page 21 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 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, and SonicMQ 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, and WebSpeed Transaction Server 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.

2

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*.

For details, see the following topics:

- OpenEdge Management console
- Using the OpenEdge Management resource details page
- Accessing OpenEdge Management resource information
- 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 on page 30
- Using the management console menu bar for OpenEdge server tasks on page 31

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 the following figure, appears at the top of the management console. The bar consists of several tabs that allow you to work with different features.

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.

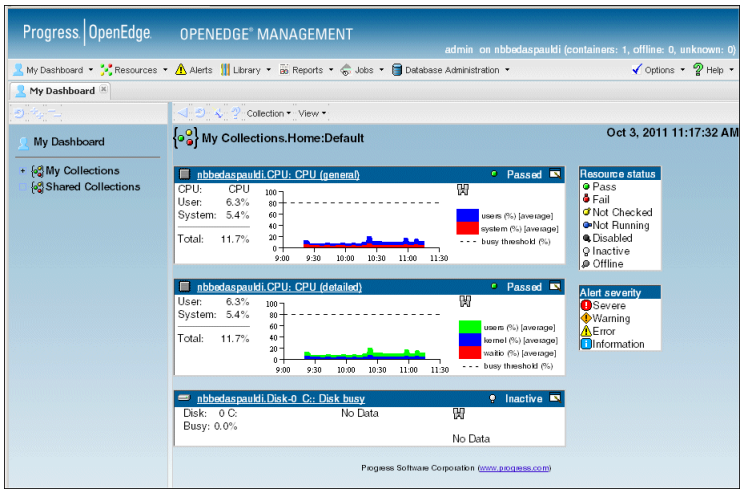
See Using the management console menu bar for OpenEdge server tasks on page 31 for more information about the OpenEdge tasks you can perform.

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.

The following figure shows the detail menu bar that appears on the **My CollectionsHome 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

The following table 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 *Getting Started*.

Table 2: Performing OpenEdge Management activities

Click this tab . . .	To perform these activities . . .
Resources	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 Accessing OpenEdge Management resource information on page 35. Additional specific management and monitoring tasks can be performed using the OpenEdge Management Details page. For more information, see Using the OpenEdge Management resource details page on page 31.
Library	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.
Reports	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*.
Options	Review and update authorization features related to OpenEdge resources.For a summary of OpenEdge Management authorization options, see Role authorization and OpenEdge Management tasks on page 27.

Note: For details about the **Job** category and jobs, see the appropriate sections of *OpenEdge Management and OpenEdge Explorer: Configuration*. 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

TheOpenEdge 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 theOpenEdge 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 specificDetails page is referenced, as appropriate.

See Accessing OpenEdge Management resource information on page 35 for information about how to access the OpenEdge Details page.

Details page format and content

The following figure shows a **WebSpeed Details** page.

Figure 3: 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 the above figure, the title **WebSpeed: nbaspauldixp2.wsbroker1** identifies the default **wsbroker1** broker discovered on the container (host) **nbasapauldixp2** as a Transaction Server.

An *AdminServer* 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.

The following table identifies and provides a general description of the four sections on thetypical Details page in OpenEdge Management.

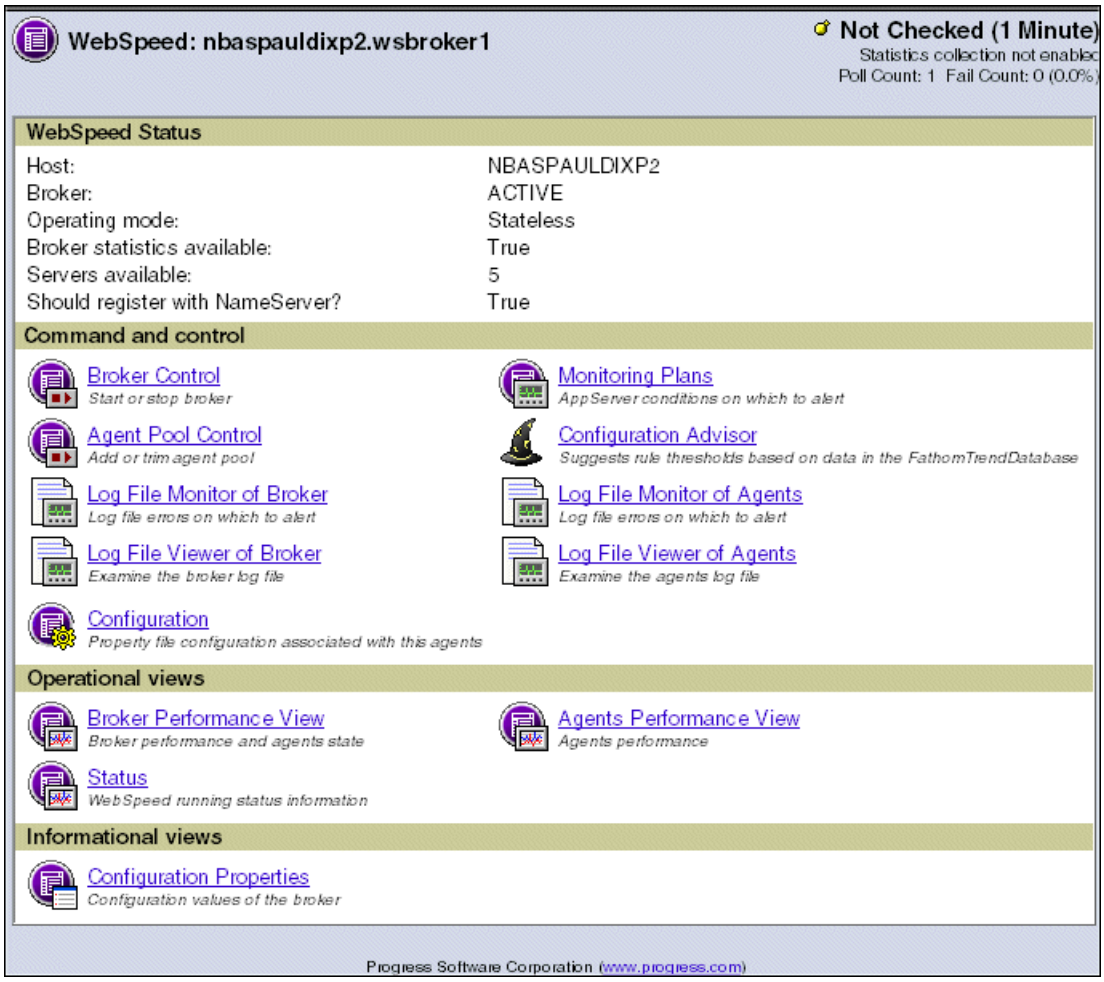
Table 3: Sections of the OpenEdge Management Details page

This section . . .	Identifies information you use to . . .
Status	Review the current operational statistics for a specific resource
Command and control	Perform various tasks associated with a resource, including: • 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) • Accessing and examining log file monitor and viewer details • Configuring monitoring plans and rules • Generating recommended rule threshold settings using the Configuration Advisor (WebSpeed brokers and AppServer brokers polled rules only) • Configuring the broker/resource's properties • List AppServer Client Connections (AppServer resource only)
Operational views	Help analyze the performance of AppServers, NameServers, WebSpeed Transaction Servers, SonicMQ Adapters, and DataServers
Informational views	Review the static configuration values for a resource as they are defined in the ubroker.properties file

Polling and statistical details on the OpenEdge Management Details page

As shown in the following figure, 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



The above 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:

- Data collection details on page 50, as it describes using this field with WebSpeed broker resources
- Data collection details on page 50, 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 console on page 29.

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 OpenEde Management and OpenEdge Explorer console are **AppServer Internet Adapter**, **AppServer**, **Database**, **Messengers**, **MSS DataServer**, **NameServer**, **Oracle DataServer**, **SonicMQ Adapter**, and **WebSpeed, OE Web Server** .

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

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.

Starting or stopping an OpenEdge Resource from the resource details page

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.

Accessing and reviewing log file data

OpenEdge Management supports monitoring log files and their associated viewers for all the OpenEdge resources.

The following table identifies where you can find information about the log file viewer and monitor for OpenEdge resources.

Table 4: Log file viewer and monitor information for OpenEdge resources

For details about . . .	See . . .
WebSpeed broker and agent pool log file monitors and viewers	Accessing and reviewing WebSpeed-related log file data on page 59
AppServer broker and agent pool log file monitors and viewers	Accessing and reviewing AppServer-related log file data on page 86
NameServer log file monitors and viewers	Accessing and reviewing NameServer-related log file data on page 105
DataServer broker and server log file monitors and viewers	Accessing and reviewing DataServer-related log file data on page 125
AppServer Internet Adapter file monitor and viewer	Accessing and reviewing AppServer Internet Adapter log file data on page 136 and Using the AppServer Internet Adapter log file viewer on page 140

For details about . . .	See . . .
Progress Application Server for OpenEdge (PAS for OpenEdge) host manager and Catalina log file monitors and viewers	The *Changing PAS for OpenEdge instance control settings* section in *OpenEdge Management: Progress Application Server for OpenEdge Configuration*.
SonicMQ Adapter broker and server log file monitors and viewers	Accessing and reviewing SonicMQ Adapter log file data on page 151
WebSpeed Messenger log file monitors and viewers	Accessing and reviewing Messenger log file data on page 164 and Using the Messenger log file viewer on page 168

Additionally, you can view the log file data for other resources and features:

Table 5: Log file viewer information

For details about . . .	See . . .
Database log file monitors and viewers	The *Database log file monitors* and *Using the log file viewer* sections in *OpenEdge Management: Database Management*.
Trend Database log file viewer	The *Viewing compaction statistics* section in *OpenEdge Management: Trend Database Guide and Reference*.
OpenEdge Management diagnostic reports	The *Viewing OpenEdge Management log files* section in *OpenEdge Management: Reporting*.

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 on page 39.

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. The following table identifies various OpenEdge resource types, the data that can appear in individual graphs, and the performance data page on which the graphs appear.

Table 6: Performance pages and their graphical content

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

For an explanation of each graph's content, see the performance view sections in Managing WebSpeed Transaction Server Data on page 45 and Managing AppServer Data on page 71.

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 Graphs available on Performance View pages on page 39, select the binoculars icon, as shown in the following figure, associated with that graph on its respective performance page.

Figure 5: Binoculars icon



As needed, you can change the displayed characteristics of the graph that appears in the pinup. See Changing OpenEdge pinup graphical views on page 43 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.

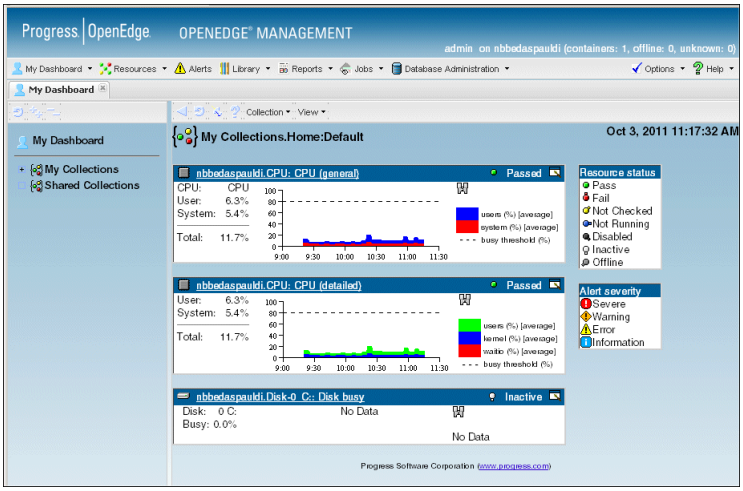
Displaying OpenEdge viewlets on a Collection view

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 6: Performance pages and their graphical content on page 40, 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.

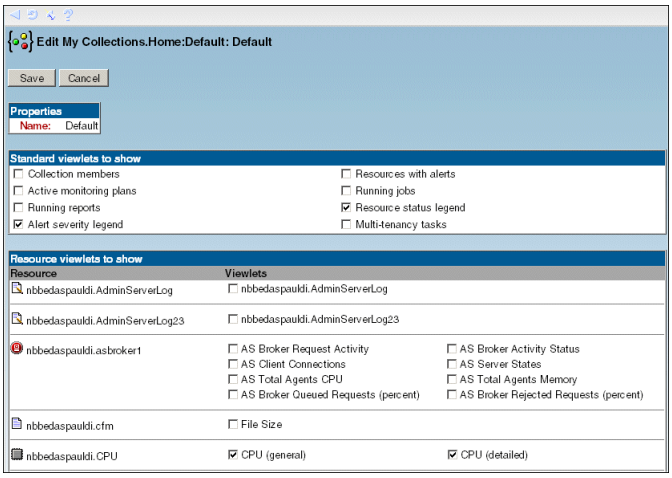
To access and select OpenEdge resource viewlets for **display** on a collections page:

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 on page 41. 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 Content** > **Customize View** > **View**. (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:

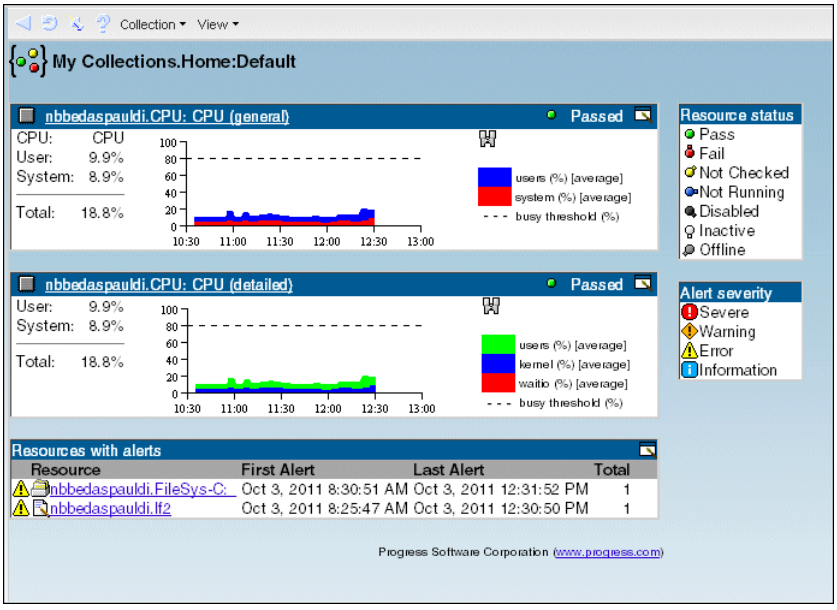


For each OpenEdge server resource type defined for the collection, the **Resource viewlets to show** section displays the associated viewlet options.

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.

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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:

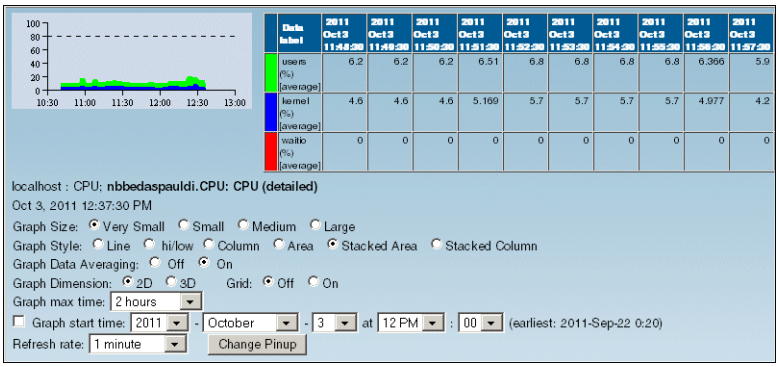


Changing OpenEdge pinup graphical views

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:



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 the following table .

Table 7: Graph properties and options for time-based graphs

Property	Options	Comments
Graph Size	**Very small** **Small** **Medium** **Large**	If you have a graph with small statistics, you can choose to have the pinup graph larger so you can better see its details.
Graph Style	**Line** **hi/low** **Column** **Area** **Stacked Area** **Stacked Column**	Depending on the kind of graph you are viewing in the pinup, you can change its style to another recognized style.
Graph Data Averaging	**Off** **On**	The default is **Off**. If you select **On**, data appears as a weighted average for the time period set for the **Graph max time** option.Setting this option to **On** reduces the number of data points displayed.

Property	Options	Comments
Graph Dimension	**2D** **3D**	Changes the display from 2-dimensional to 3-dimensional.
Grid	**Off** **On**	The default is **Off**.
Graph max time	A number of options, from **5 minutes to 2 days**.	Controls how much time the graph spans. Note that this value does not affect how often or how much data is collected for graphing.However, the ranges for the specific value options from which you can select are governed by the settings you define for the **Graph cache** option. For details, see the appropriate section in *OpenEdge Management and OpenEdge Explorer: Getting Started*.
Graph start time	Select the check box. Provide year/month/day/ time start time settings.	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. 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. To ensure a meaning graphing of data, review the **Graph cache** option and the **Graph max time** setting values as you determine the value for this start time setting.
Refresh rate	**None** **15 seconds** **30 seconds** **1 minute** **2 minutes** **3 minutes** **4 minutes** **5 minutes** **10 minutes** **15 minutes**	The refresh rate is the rate at which the resource is checked to see if there is more information to put in the graph. 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.

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.

3

Managing WebSpeed Transaction Server Data

This chapter presents OpenEdge Management features and functionality related to the WebSpeed Server.

For details, see the following topics:

- 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.

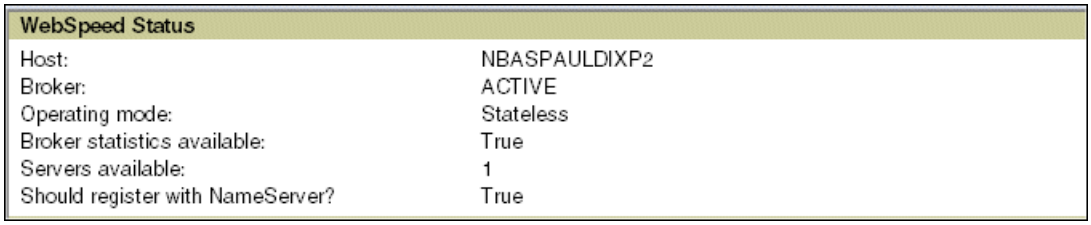
You must have appropriate OpenEdge Management role authorization to perform several of these tasks. See Role authorization and OpenEdge Management tasks on page 27 for details.

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. The following figure shows an example of the **WebSpeed Status** section.

Figure 6: WebSpeed Status section



The following table describes each of the WebSpeed broker status details.

Table 8: WebSpeed Status details

Field	Description
Host	The host machine's name.
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 agent processes running on the WebSpeed instance.
Broker statistics available	The status of the broker as it relates to data collection. The possible states are **True** or **False**. See Data collection details on page 50 for more information.

Field	Description
Servers available	The number of servers running and available to fulfill a connection request from a client through this broker when the broker's status is **ACTIVE**. This value can change frequently, reporting the real-time changes in number of agents available.
Should register with NameServer	The status of **True** or **False** to indicate whether the broker resource is registered with a NameServer.

These points relate to the fields listed in the first column in in the above table:

- 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

The following figure 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.

The following table identifies where you can find information about other functionality related to the **Command and control** section.

Table 9: Additional WebSpeed information

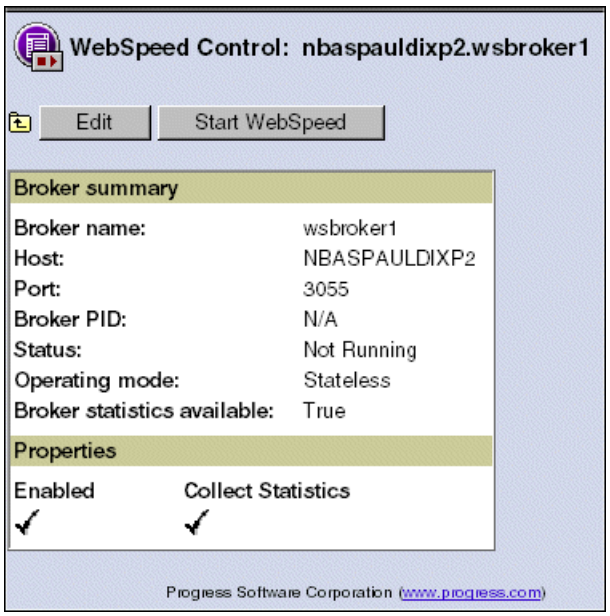
For WebSpeed-related details about . . .	See . . .
Broker and agent pool log file monitors and viewers	Accessing and reviewing WebSpeed-related log file data on page 59
Broker monitoring plans and rules	Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters on page 171
Broker rule sets	Customizing a WebSpeed broker log file monitor on page 61
Configuration	*OpenEdge Management and OpenEdge Explorer: Configuration*

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.

The following figure shows an example of the **WebSpeed Control** page.

Figure 8: WebSpeed Control page



Note: The values associated with the **Collect Statistics** property and the **Broker statistics available** field are interdependent. See the for details.

The **WebSpeed Control** page consists of two distinct sections:

- Broker summary on page 49
- Properties on page 49

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 Viewing broker process details on page 51 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 Data collection details on page 50 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 on page 50 for more information.

A check mark indicates that the individual property is set.

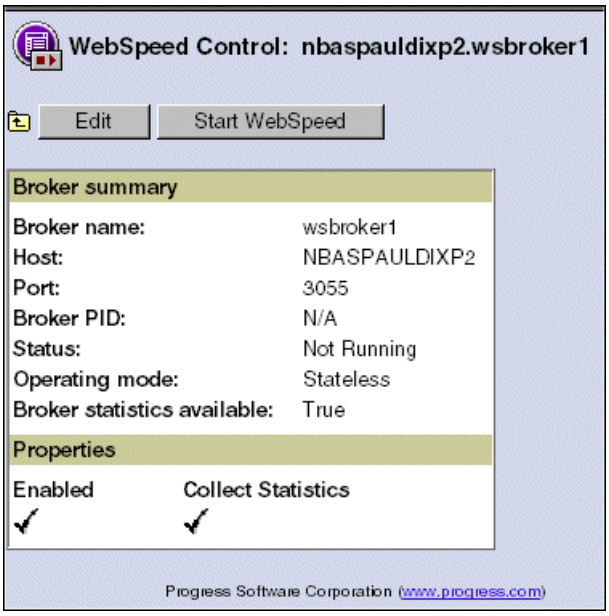
Note: To set the **Broker statistics available** option to a **True** status for a specific broker, you must enable the **Collect Statistics** option. See the procedure in the Data collection details on page 50.

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 Data collection details on page 50.
- 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 Starting or Stopping OpenEdge resources on page 36.

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 Managing AppServer Internet Adapter Data on page 133.

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*..

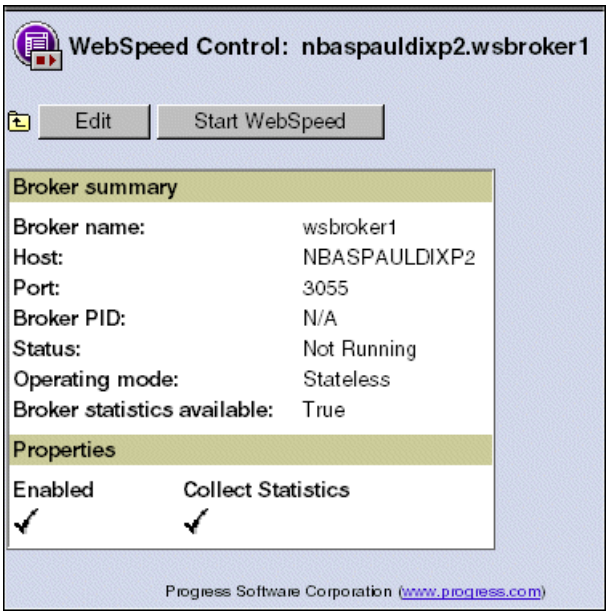
   The **Broker statistics available** field in the **Broker summary** section will display **True** if the broker restarted successfully. The **True** value indicates that you have successfully set data collection and that broker statistical data is now available to be stored in the OpenEdge Management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

Viewing broker process details

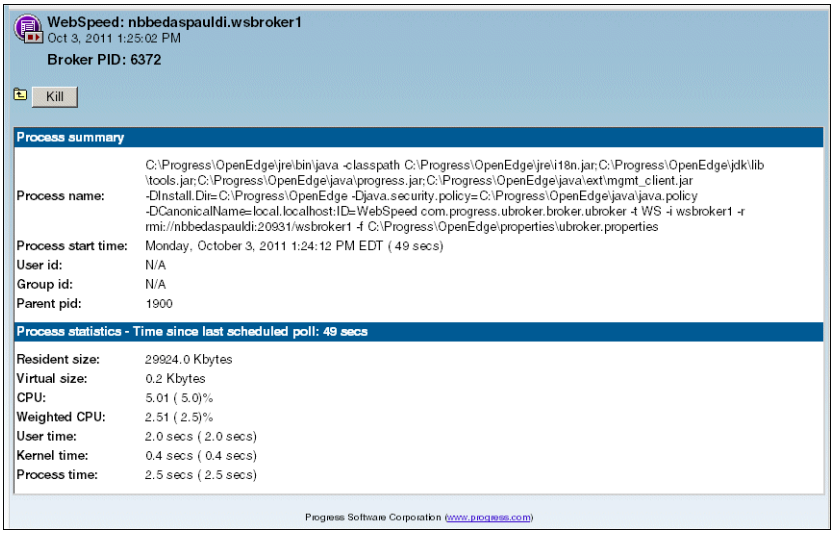
You can also access real-time details and statistics that provide you with snapshot information about an individual broker at the point you access this information from the **WebSpeed Control** page. Review this information to help you assess a broker's performance.

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:



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. The following table identifies and describes these attributes.

Table 10: Process statistics operational data

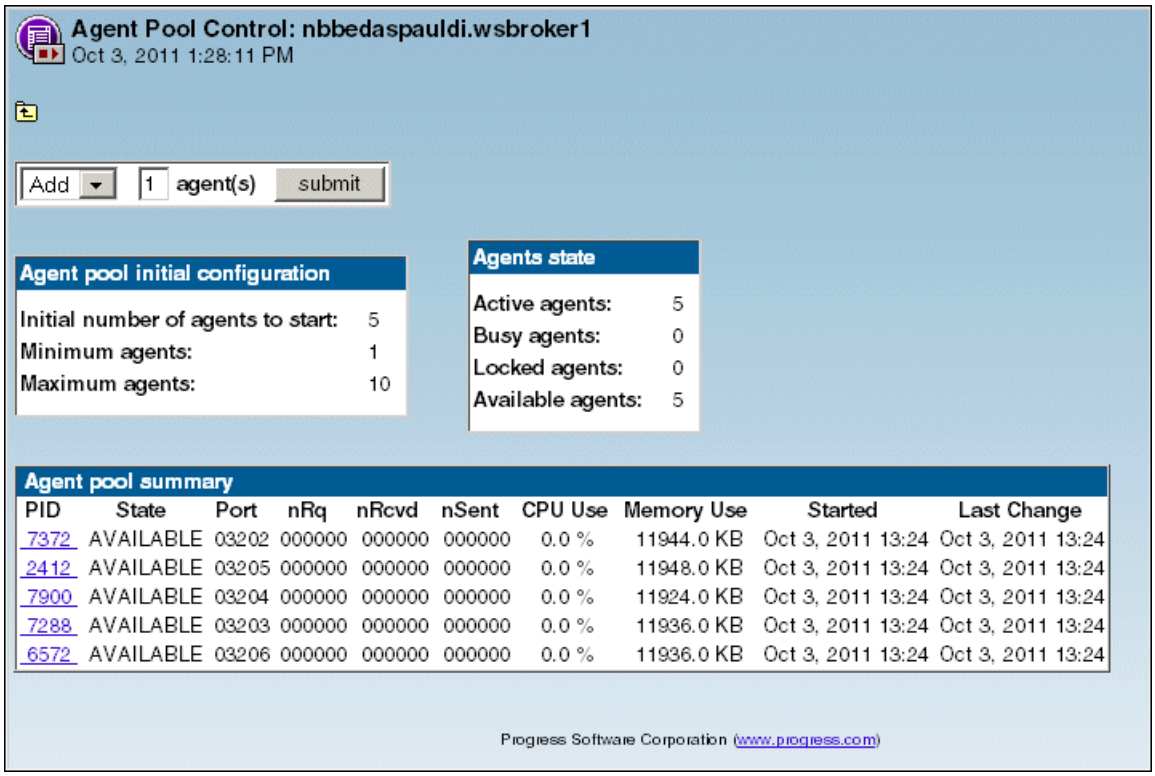
Field	Description
Resident size	The physical size of the process as defined by the host system.
Virtual size	The virtual size of the process as defined by the host system.
CPU	The percentage of time spent using the CPU in either the user or kernel mode since the last scheduled poll.
Weighted CPU	The 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.
User time	The amount of CPU time spent in the user mode since the last scheduled poll.
Kernel time	The amount of CPU time spent in the kernel mode since the last scheduled poll.
Process time	The sum of the values that appear in the **User time** and **Kernel time** fields.

Agent Pool Control page content

The following figure 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.

Figure 9: Agent Pool Control page example



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 Adding or trimming agents on page 56 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 Killing a WebSpeed agent process on page 57 for the detailed steps.

See Adding or trimming agents on page 56 the 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.

The following table identifies and describes each field that displays in the **Agent pool initial configuration** section.

Table 11: Agent pool initial configuration field definitions

Field	Description
Initial number of agents to start	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.
Minimum agents	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.
Maximum agents	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.

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.

The following table describes each field presented in the **Agents state** section.

Table 12: Agents state field definitions

Field	Description
Active agents	The name of agents currently running
Busy agents	The name of agents currently serving ABL client requests
Locked agents	The name of agents currently servicing a bound connection
Available agents	The name of agents currently available to handle broker requests

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. The following table 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.

  The following table provides more information about **PID**.

Table 13: Agent pool summary field definitions

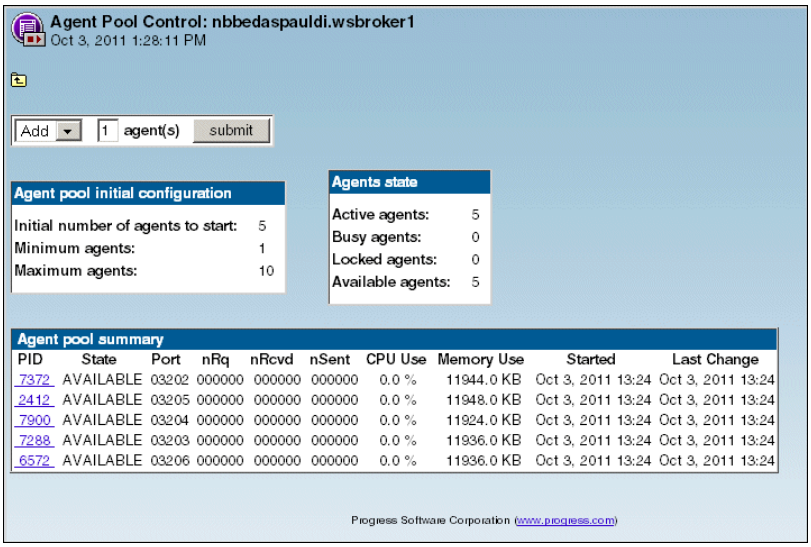
Field	Description
PID	The process identifier for this agent. Click on the specific **PID** number to display a detail page that provides specific information about this agent process and, as necessary, kill the process. See Killing a WebSpeed agent process on page 57 the for more information.
State	The current execution state of the agent process.
Port	The TCP/IP port number that the agent process uses.
nRq (Number of Requests)	The number of messages sent to the agent process.
nRcvd	The number of messages received by the agent process.
nSent	The number of requests sent by the agent process.
CPU Use	The percentage of CPU user and system time consumed by a process.
Memory Use	The amount of virtual memory (in Kbytes) consumed by a process.
Started	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.
Last Change	The time stamp that indicates when the agent process last changed execution state.

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:



3. From the drop-down list box, select **Add** or **Trim**.
4. 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 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 Agent pool initial configuration on page 54the 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:

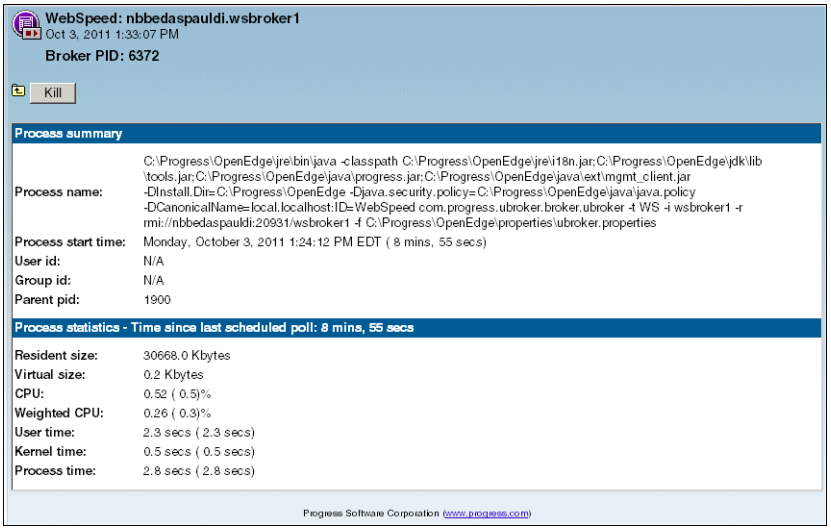
- **Signal Name** — SIGKILL
- **Signal Number** — 9
- **Signal Description** — Kill program

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 Killing an AppServer process on page 82.

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:



   Note that the two sections on this page present relevant summary information about this WebSpeed agent and its current operational status. See Viewing broker process details on page 51 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** *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 a 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 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 Customizing a WebSpeed broker log file monitor on page 61 the 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 Working with rule sets on page 186 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 Customizing a WebSpeed broker log file monitor on page 61 the 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 and OpenEdge Explorer: Configuration*.

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:

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 **WebSpeed Broker Log File Monitor** and the **WebSpeed Agent 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**.

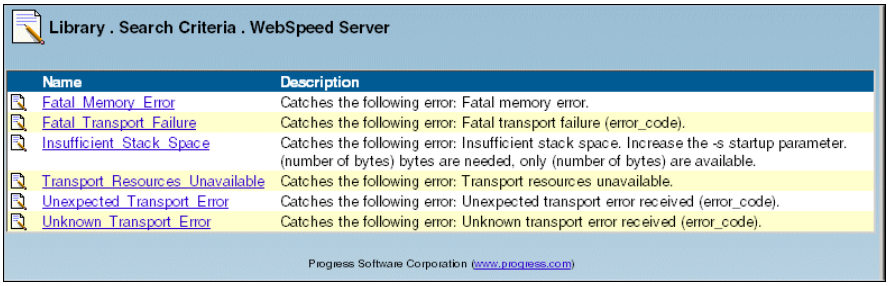
Reviewing predefined log file monitor search criteria

Each log file provides predefined search criteria that address common 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:



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 Customizing a WebSpeed broker log file monitor on page 61 for details.

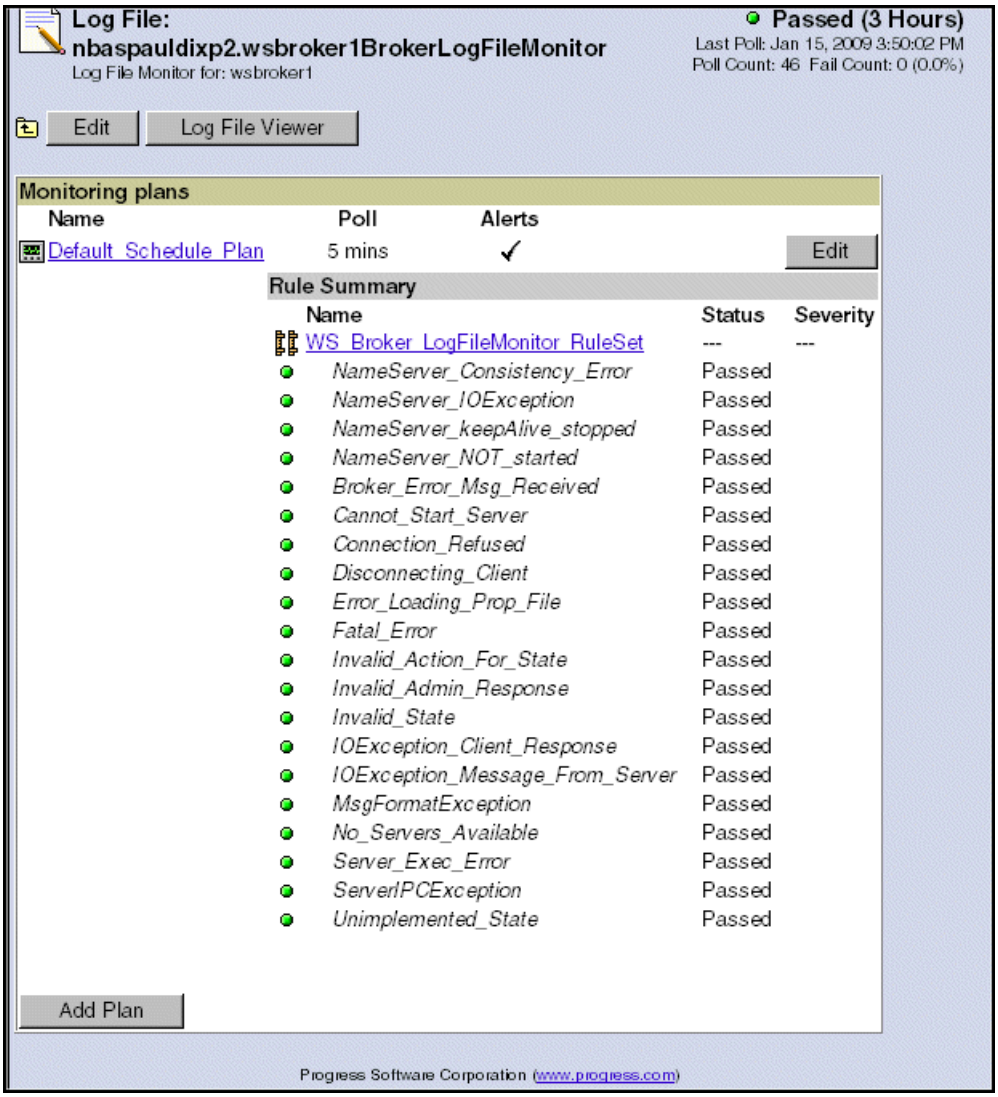
Customizing a WebSpeed broker log file monitor

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 **CreateLog 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 on page 62 through Step 9 on page 63.
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

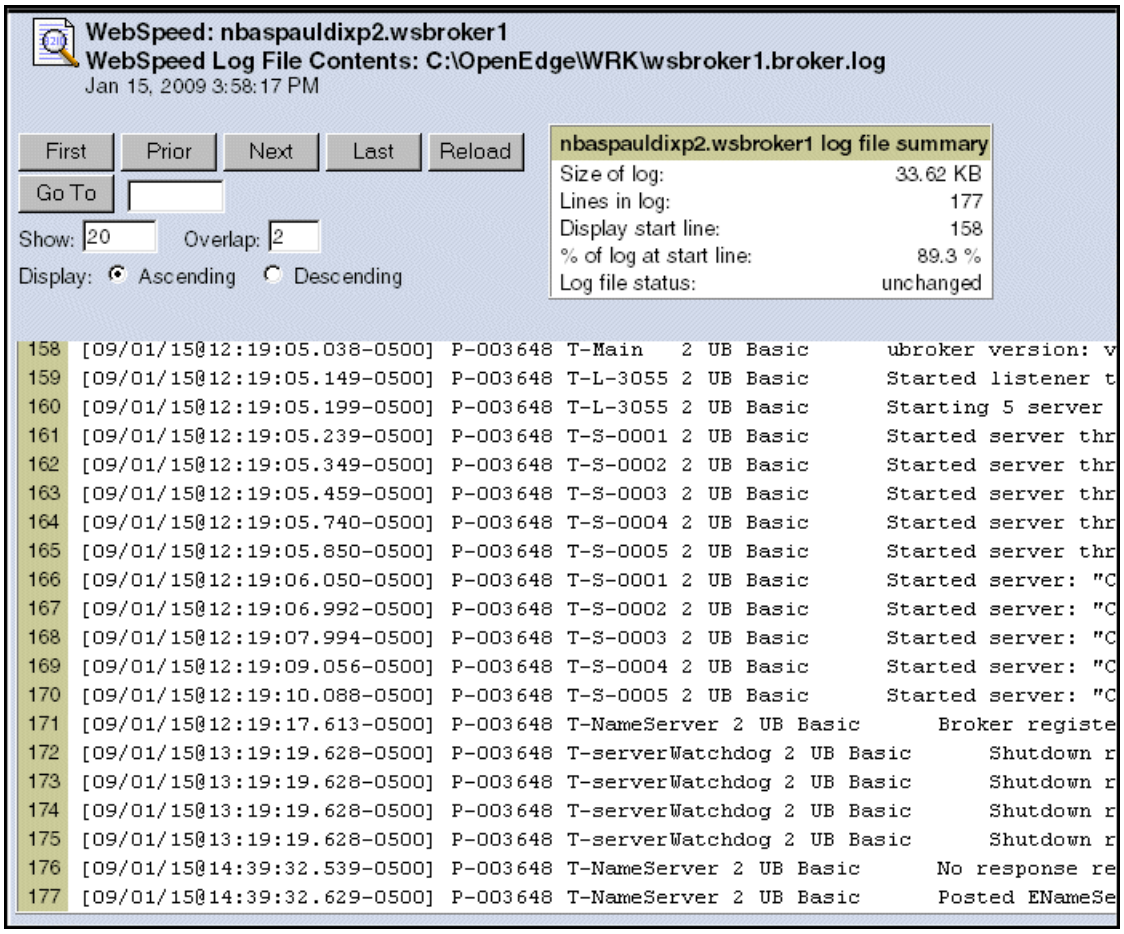
To view the contents of each WebSpeed log file, access the viewer associated with each individual log file.

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.

The following figure provides an example of the WebSpeed broker log file viewer, which is showing the contents of a WebSpeed broker log file.

Figure 10: WebSpeed broker log file viewer example



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 **User Preferences** > **Options**. 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:

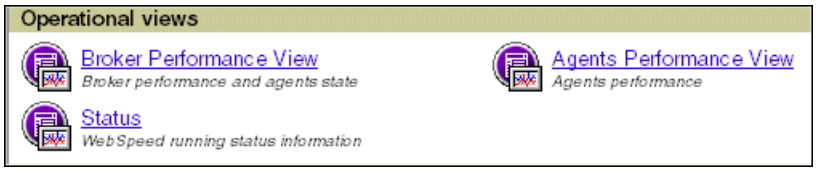
- A specific WebSpeed broker
- A pool of agents associated with a specific broker

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 Data collection details on page 50 for details.

The following figure shows the **Operational views** section of the **WebSpeed Details** page, which also includes a link to status information.

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 the following table

  Table 14: Broker connection workload details

Field	Description
Completed	Number of broker requests fulfilled
Queued	Number of broker requests to be processed
Rejected	Number of broker requests that could not be processed
Average Busy Time (ms)	Average amount of time that the broker is busy servicing requests (expressed in milliseconds)
Average Locked Time (ms)	Average amount of time that the broker is locked (expressed in milliseconds)

  .

- **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 on page 50 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.

The following table briefly describes each of these graphs.

Table 15: WebSpeed Broker performance-related graphs

Graph name	Description
WS Broker Request Activity	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.
WS Broker Activity Status	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.
Client Connections	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. **Note:** It is possible for this graph to accurately show that the number of current connections is higher than the total number of connections. The **Clients Total** reflects only new connections over the specified time period. In contrast, the **Clients Current** 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.

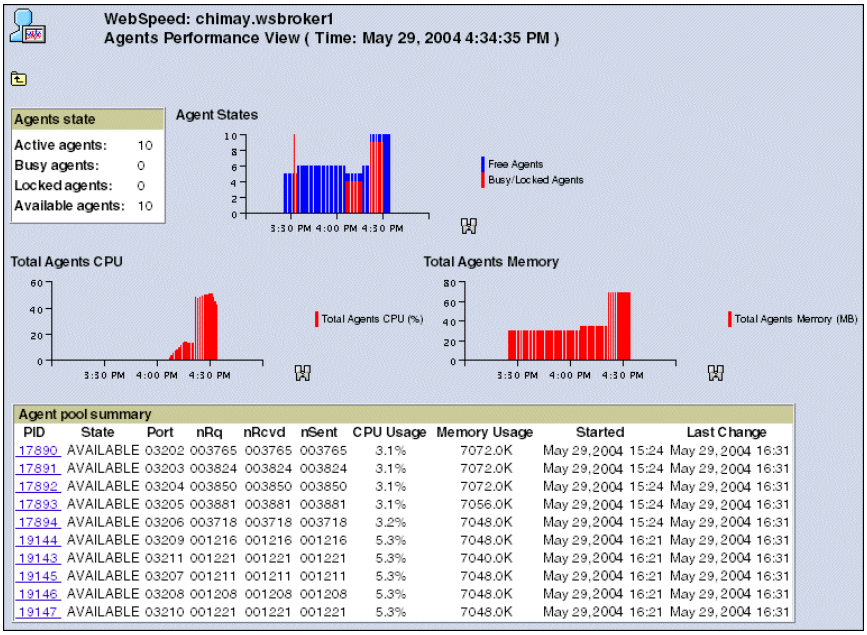
See Changing OpenEdge pinup graphical views on page 43 for details about changing the data appearance of graphs.

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**.
- **Agent pool summary** — Displays detailed data about each individual agent in the WebSpeed agent pool that is associated with a specific WebSpeed broker. You also have access to additional data about a specific agent and a control that allows you to kill a process. See Killing a WebSpeed agent process on page 57 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 Data collection details on page 50 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. The following table identifies and briefly describes each of these graphs.

Table 16: WebSpeed agents performance-related graphs

Graph name	Description
Agent States	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.
Total Agents CPU	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.
Total Agents Memory	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.

See Changing OpenEdge pinup graphical views on page 43 for details about changing the data appearance of graphs.

Examining WebSpeed-related Informational views

The following figure shows the **Informational views** section of the **WebSpeed** Detailspage.

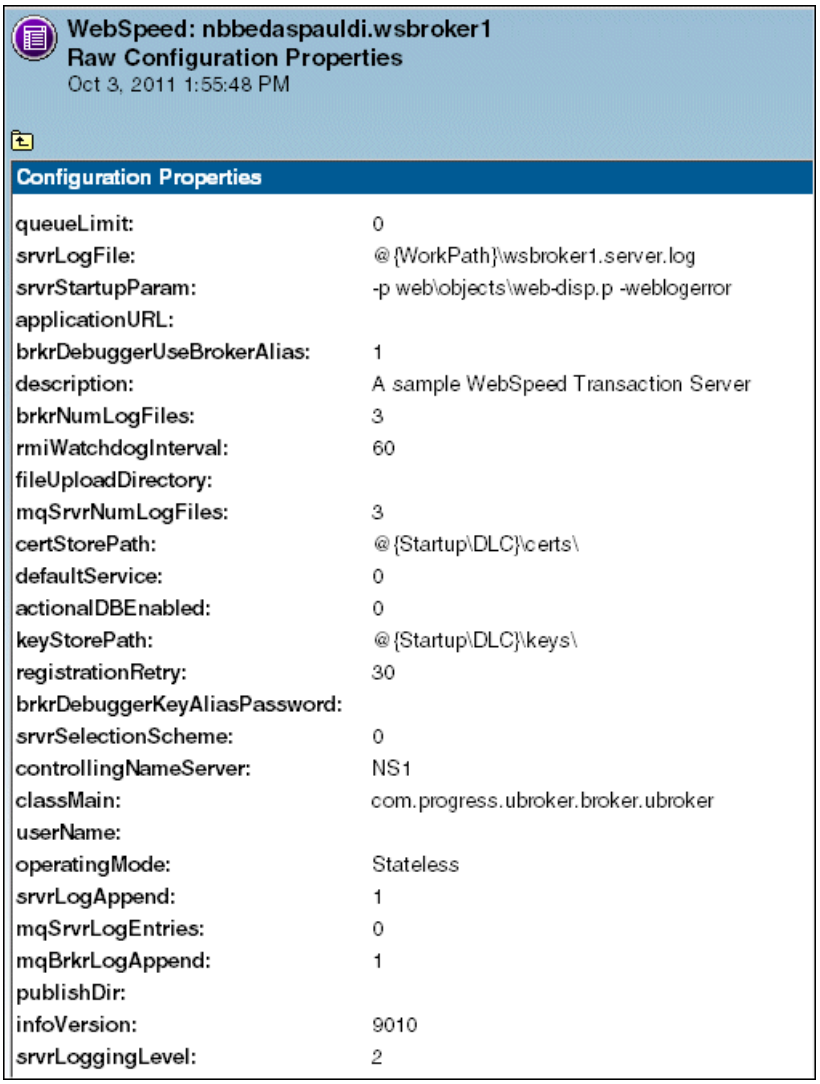
The **WebSpeed** Details page provides an **Informational views** section that allows you to access and review data related to the WebSpeed broker's configuration properties. The values that appear originate from the `ubroker.properties` file.

Figure 12: WebSpeed Informational views



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:



WebSpeed: nbbedaspauldi.wsbroker1
Raw Configuration Properties
Oct 3, 2011 1:55:48 PM

Configuration Properties

queueLimit:	0
srvrLogFile:	@{WorkPath}\wsbroker1.server.log
srvrStartupParam:	-p web\objects\web-disp.p -weblogerror
applicationURL:	
brkrDebuggerUseBrokerAlias:	1
description:	A sample WebSpeed Transaction Server
brkrNumLogFiles:	3
rmiWatchdogInterval:	60
fileUploadDirectory:	
mqSrvrNumLogFiles:	3
certStorePath:	@{Startup\DLC}\certs\
defaultService:	0
actionalDBEnabled:	0
keyStorePath:	@{Startup\DLC}\keys\
registrationRetry:	30
brkrDebuggerKeyAliasPassword:	
srvrSelectionScheme:	0
controllingNameServer:	NS1
classMain:	com.progress.ubroker.broker.ubroker
userName:	
operatingMode:	Stateless
srvrLogAppend:	1
mqSrvrLogEntries:	0
mqBrkrLogAppend:	1
publishDir:	
infoVersion:	9010
srvrLoggingLevel:	2

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

4

Managing AppServer Data

This chapter presents OpenEdge Management features and functionality related to the AppServer.

For details, see the following topics:

- 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.

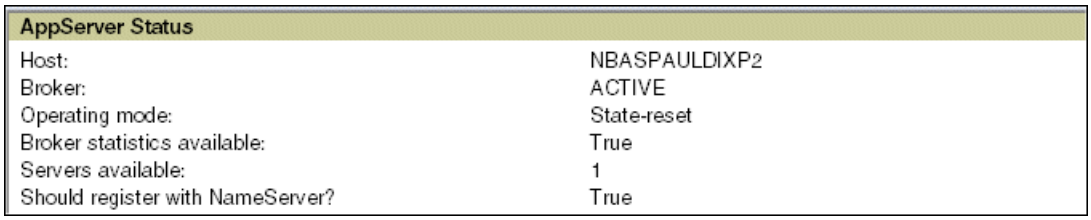
You must have appropriate OpenEdge Management role authorization to perform several of these tasks. See Role authorization and OpenEdge Management tasks on page 27 for details.

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. The following figure shows the **AppServer Status** section.

Figure 13: AppServer Status section



The following table describes each of the AppServer broker details in the **AppServer Status** section of the AppServer Details page.

Table 17: AppServer status details

Field	Description
Host	The host machine's name.
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 Data collection details on page 76 for more information about data collection.

Field	Description
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 the above table:

- 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

The following figure shows the **Command and control** section of the **AppServer** Details page.

Figure 14: Command and control section



The following table identifies where you can find information about other functionality related to the AppServer **Command and control** section.

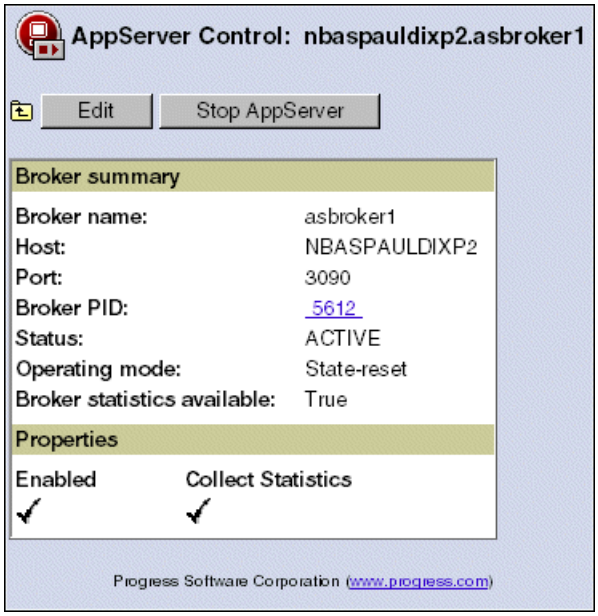
Table 18: Additional AppServer information

For AppServer-related details about . . .	See . . .
Broker and server pool log file monitors and viewers	Accessing and reviewing AppServer-related log file data on page 86
Broker monitoring plans and rules	Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters on page 171
Broker rule sets	Customizing an AppServer Internet Adapter log file monitor on page 138
Configuration	*OpenEdge Management and OpenEdge Explorer: Configuration*
AppServer Client connections	Listing AppServer Client connections on page 84

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. The following figure shows an **AppServer Control** page.

Figure 15: AppServer Control page



Note: The values associated with the **Broker statistics available** field and the **Collect Statistics** property are interdependent. See Data collection details on page 76 the procedure in the for additional information.

For details about the WebSpeed Control page, see WebSpeed Control page content on page 48.

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 Viewing broker process details on page 77 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 Data collection details on page 76 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 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 Data collection details on page 76 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 Data collection details on page 76 procedure in the .

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 Accessing OpenEdge Management resource information on page 35 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 Data collection details on page 76.
- 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 Starting or Stopping OpenEdge resources on page 36.

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.

Setting the options to perform data collection in an AppServer broker

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*..

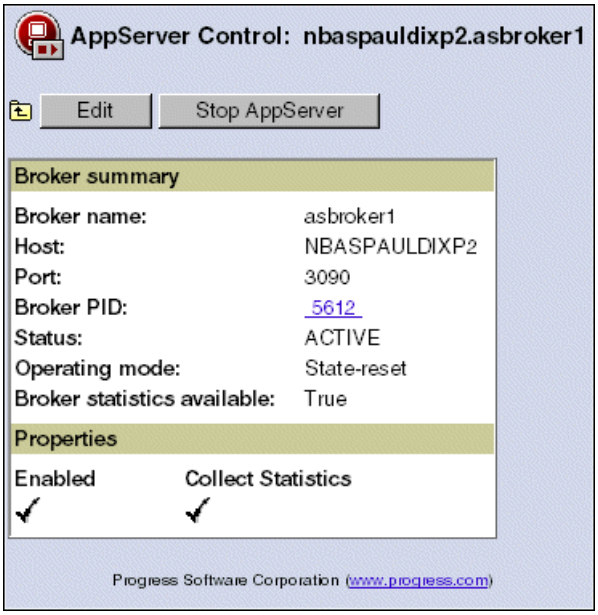
The **Broker statistics available** field in the **Broker summary** section will have a value of **True** if the broker restarted successfully. This value indicates that you have successfully set data collection and that broker statistical data is now available to be stored in the OpenEdge Management 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 Accessing OpenEdge Management resource information on page 35 for the detailed steps.
2. Click **Broker Control** in the **Command and control** section to display the **AppServer 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.

   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.

The following table identifies and describes the fields of information presented in the **Process statistics** section.

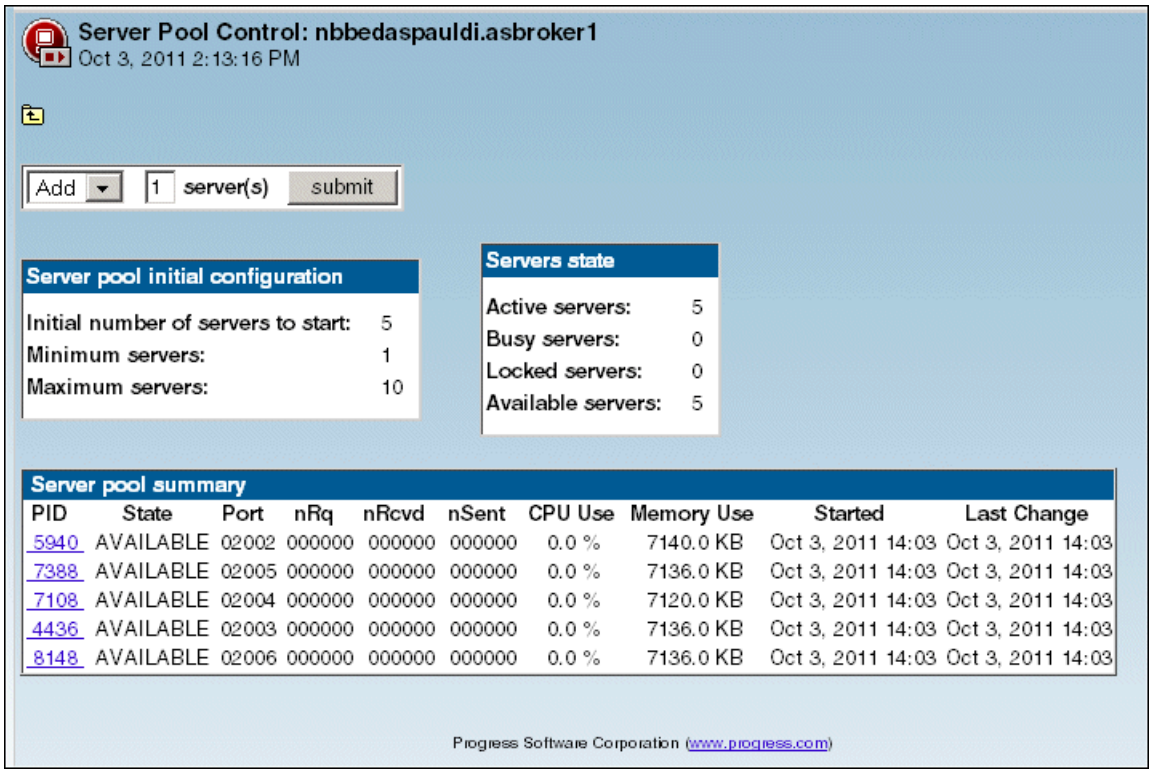
Table 19: Process statistics operational data

Field	Description
Resident size	The physical size of the process as defined by the host system.
Virtual size	The virtual size of the process as defined by the host system.
CPU	The percentage of time spent using the CPU in either the user or kernel mode since the last scheduled poll.
Weighted CPU	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.
User time	The amount of CPU time spent in the user mode since the last scheduled poll.
Kernel time	The amount of CPU time spent in the kernel mode since the last scheduled poll.
Process time	The sum of the values that appear in the **User time** and **Kernel time** fields.

Server Pool Control

The **Server Pool Control** page, as shown in The following figure 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 Adding or trimming AppServers on page 81 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 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.

The following table identifies and describes each field that appears in the **Server pool initial configuration** section.

Table 20: Server pool initial configuration fields

Field	Description
Initial number of servers to start	The value OpenEdge Management references when the AppServer broker starts AppServers.
Minimum servers	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.
Maximum servers	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.

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.

The following table describes each field presented in the **Servers state** section.

Table 21: Servers state fields

Field	Description
Active servers	The number of AppServers currently running
Busy servers	The number of AppServers currently serving ABL client requests
Locked servers	The number of AppServers currently servicing a bound connection (This state applies to a stateless AppServer.)
Available servers	The number of AppServers currently available to handle broker requests

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. The following table 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. The following table provides more information about **PID**.

Table 22: Server pool summary fields

Field	Description
PID	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 Killing an AppServer process on page 82 for more information.
State	The current execution state of the AppServer process.
Port	The TCP/IP port number that the AppServer process uses.
nRq (Number of Requests)	The number of messages sent to the AppServer process.
nRcvd	The number of messages received by the AppServer process.
nSent	The number of requests sent by the AppServer process.
CPU Use	The percentage of CPU user and system time consumed by a process.
Memory Use	The amount of virtual memory (in Kbytes) consumed by a process.
Started	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.
Last Change	The time stamp that indicates when the AppServer process last changed execution state.

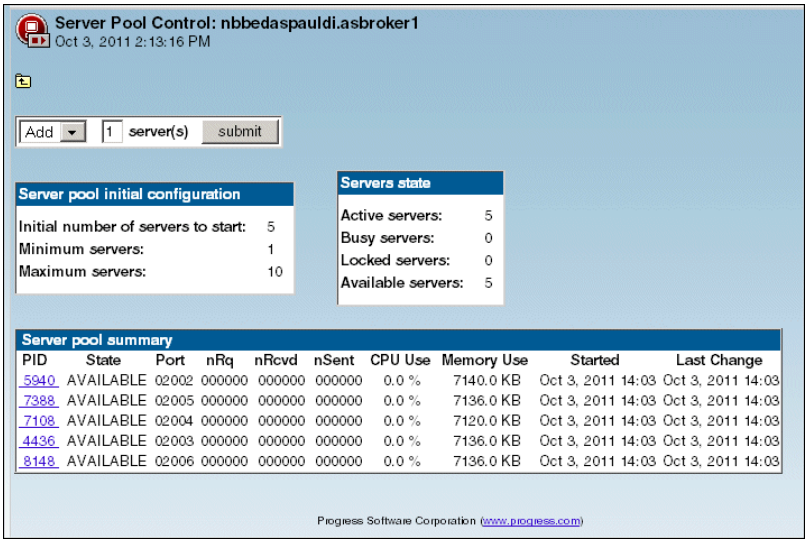
Adding or trimming AppServers

This section describes how to add or trim AppServers.

Adding or trimming 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 Accessing OpenEdge Management resource information on page 35 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 Server pool initial configuration on page 80 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 **Serversstate** table. See Servers state on page 80 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 Killing a WebSpeed agent process on page 57.

To initiate a kill process:

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

   Note that the two sections on this page present relevant summary information about this AppServer agent and its current operational status. See Viewing broker process details on page 77 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.

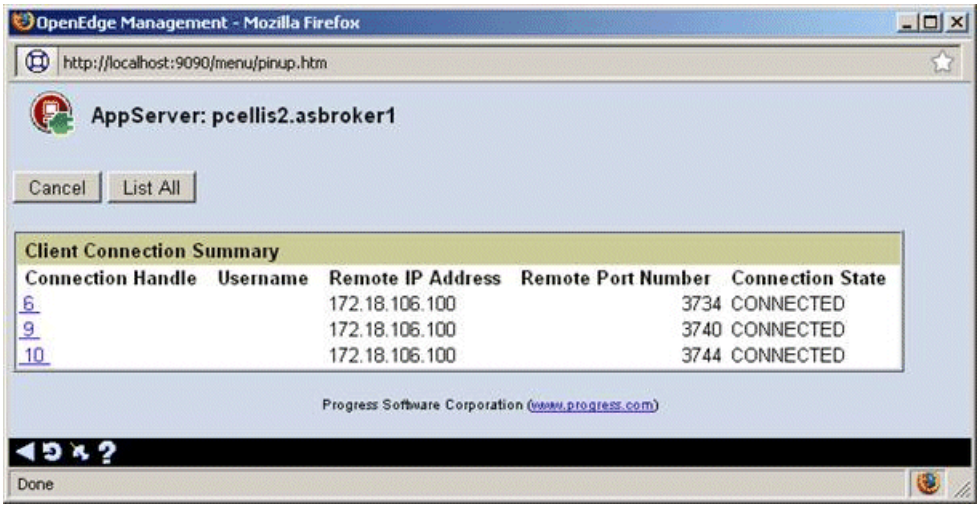
Listing AppServer Client connections

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.

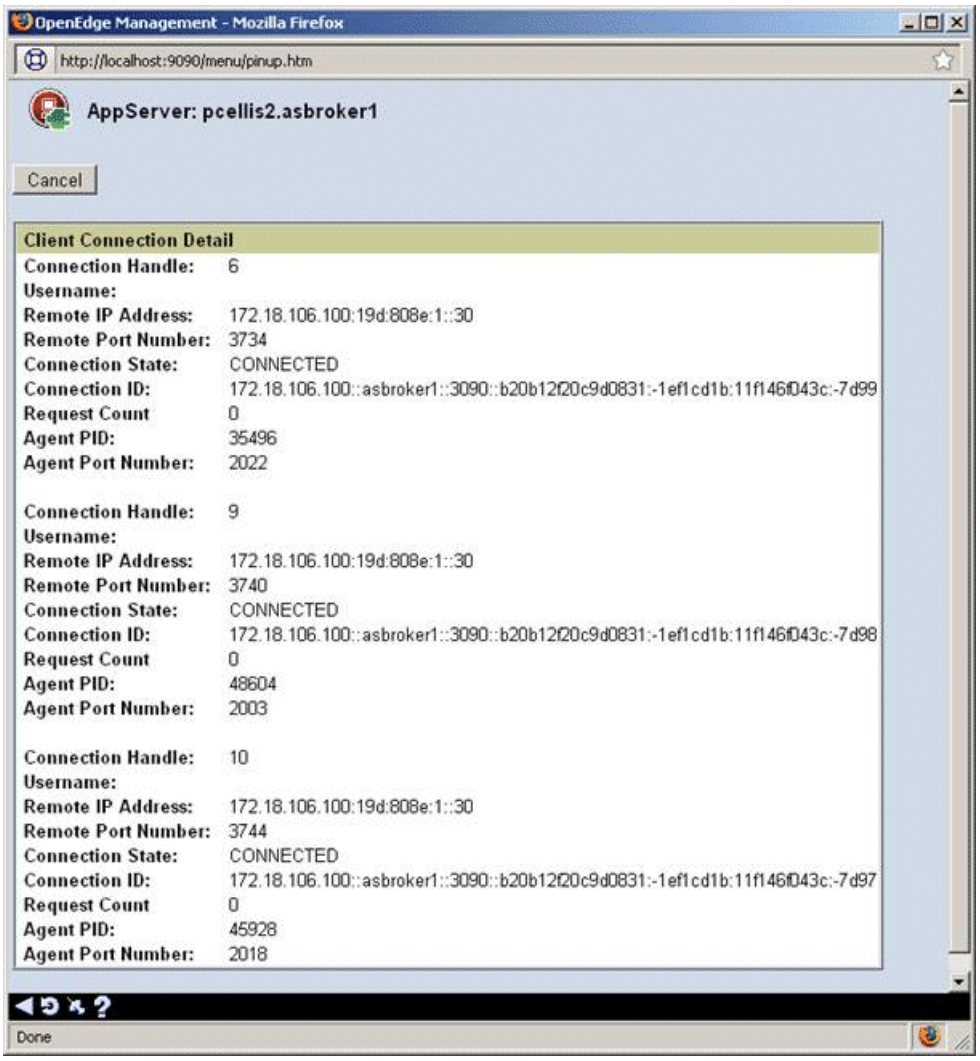
You can view the information about the current client connections in a Summary page or a Detailed page. The Detailed page provides the information found in the Summary page as well as additional details.

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**.



The information described in the following table is provided in the view.

Table 23: Client Connection Summary

Field	Description
Connection Handle	A unique value that identifies the connection. This value is a monotonically increasing number that is assigned when the client connects to the AppServer.
Username	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.
Remote IP Address	The IP address of the host machine where the client resides.
Remote Port Number	The port number of the client on the client host machine.

Field	Description
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.

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.

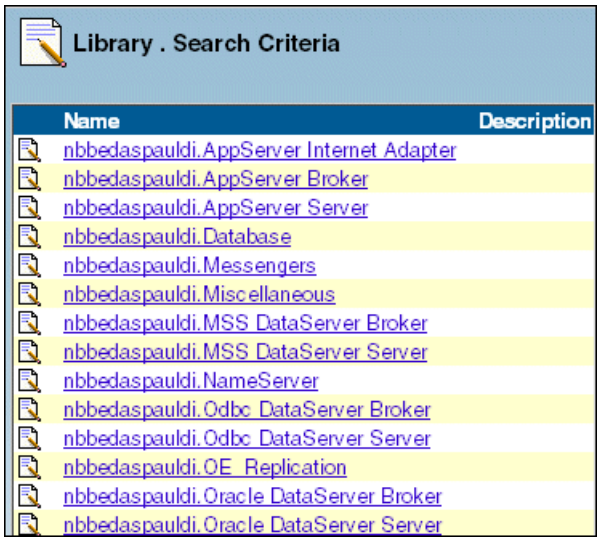
Characteristics of AppServer resource log file monitors

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.

The following figure shows an excerpt of the **Search Criteria** subcategories, including the **AppServer Broker** and **AppServer Server** links to the predefined search criteria.

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 Customizing an AppServer broker log file monitor on page 90 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

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 Customizing an AppServer broker log file monitor on page 90 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.

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:



Library . Search Criteria . AppServer Broker

Name	Description
Broker_Error_Msg_Received	Catches the following error: Admin error response received: (adminErrorMsg).
Cannot_Start_Server	Catches the following error: ERROR: cannot start server.
Connection_Refused	Catches the following error: ERROR: connection refused : maximum number of client connections has been reached.
Disconnecting_Client	Catches the following error: Error (errMsg) ... disconnecting client.
Error_Loading_Prop_File	Catches the following error: Error loading properties file (propertiesFileName) : (ProException_string) : (ProExceptionMsg_string).
Fatal_Error	Catches the following error: FATAL ERROR : (rspcode) (errMsg).
Invalid_Action_For_State	Catches the following error: Client FSM Error : Invalid ACTION for STATE : state= (state) (descState) event= (event) (descEvent) action= (action) nextState= (state) (descState).
Invalid_Admin_Response	Catches the following error: Invalid admin response received: (adminErrorMsg).
Invalid_State	Catches the following error: FSM Error : Invalid State : state= (currentState).
IOException_Client_Response	Catches the following error: IOException while sending clientRsp : (IOException_string).
IOException_Message_From_Server	Catches the following error: IOException reading message from server : (IOException_string)
MsgFormatException	Catches the following error: MsgFormatException received on client connection : (MsgFormatException_string) (MsgFormatExceptionMsg_string).
NameServer_Consistency_Error	Catches the following error: Internal Consistency Error on NameServer (host):(portNum) : (InternalConsistencyException).
NameServer_IOException	Catches the following error: IOException on startup of NameServer (hostName): (portNum) : (IOException_string).
NameServer_keepAlive_stopped	Catches the following error: NameServer keepAlive to NameServer (host):(portNum) : stopped.
NameServer_NOT_started	Catches the following error: NameServer NOT started for services (applServices).
No_Servers_Available	Catches the following error: ERROR: No servers available.
Server_Exec_Error	Catches the following error: Server exec error : cmdline = (serverStartupCmdLine)
ServerIPCException	Catches the following error: ServerIPCException in (funcName) : (ServerIPCException_string).
Unimplemented_State	Catches the following error: FSM Error : Unimplemented State : state= (state) (descState).

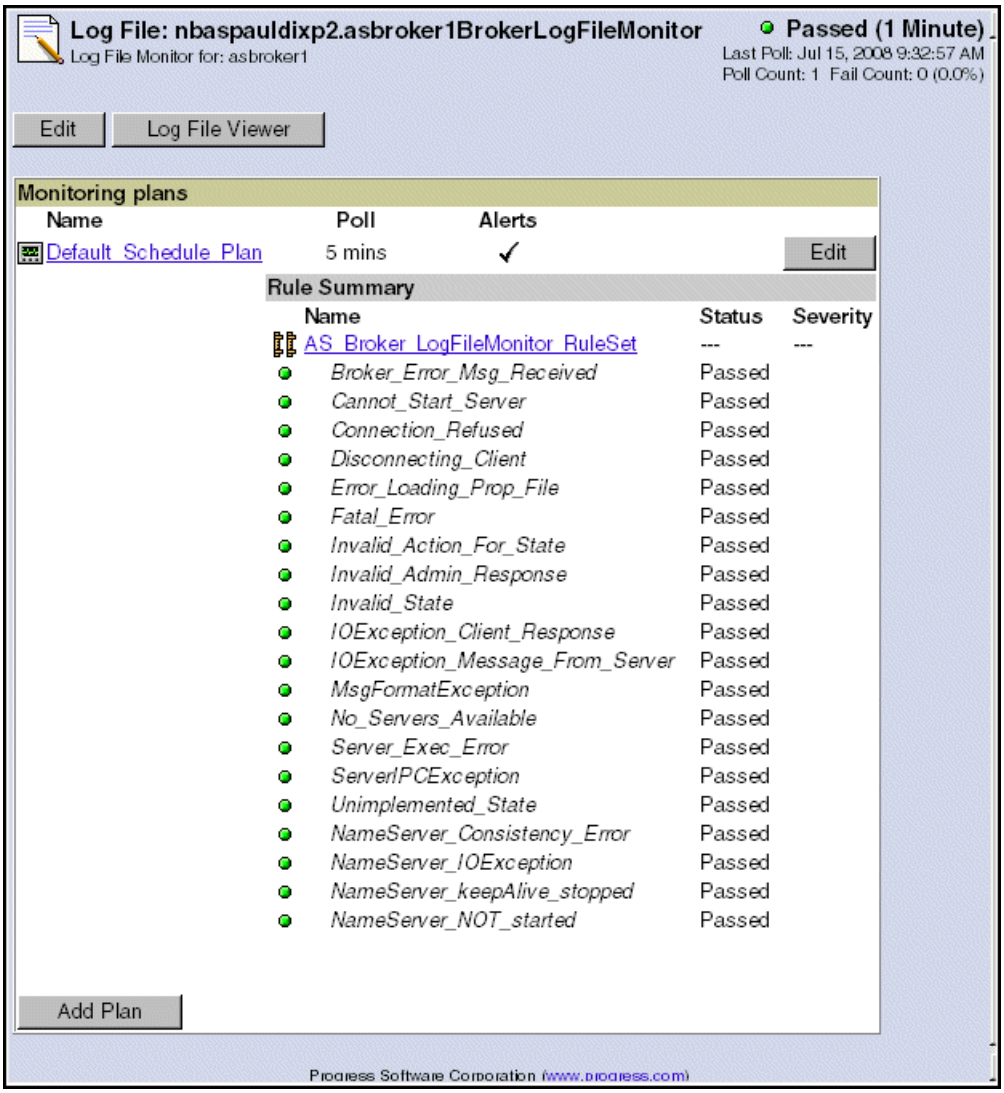
Note: You can also create your own search criteria to address a particular AppServer error for which you want to monitor an AppServer. See Customizing an AppServer broker log file monitor on page 90 for details.

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.

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 Accessing OpenEdge Management resource information on page 35.
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:

   a) Click **Add Plan** to add an existing monitoring plan to this resource monitor.

   b) Click **Edit** at the top of the page to change the description of the log file monitor.

   c) 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 on page 91 through Step 9 on page 92.
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

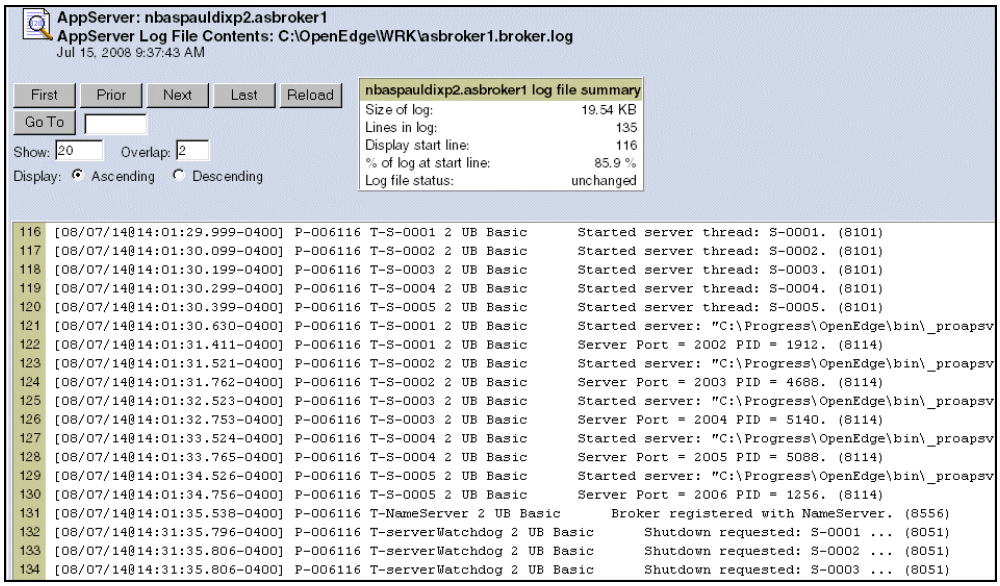
To view the contents of each AppServer log file, access the viewer associated with each individual log file.

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.

The following figure presents the AppServer broker log file viewer, which is showing the contents of an AppServer broker log file.

Figure 18: AppServer Broker log file viewer



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.

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

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:

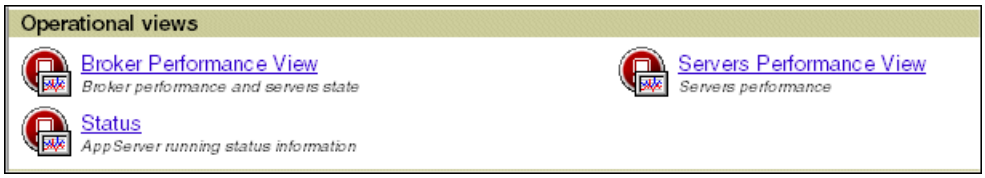
- A specific AppServer broker
- A pool of AppServers associated with a specific broker

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 Data collection details on page 76 for details.

The following figure 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.

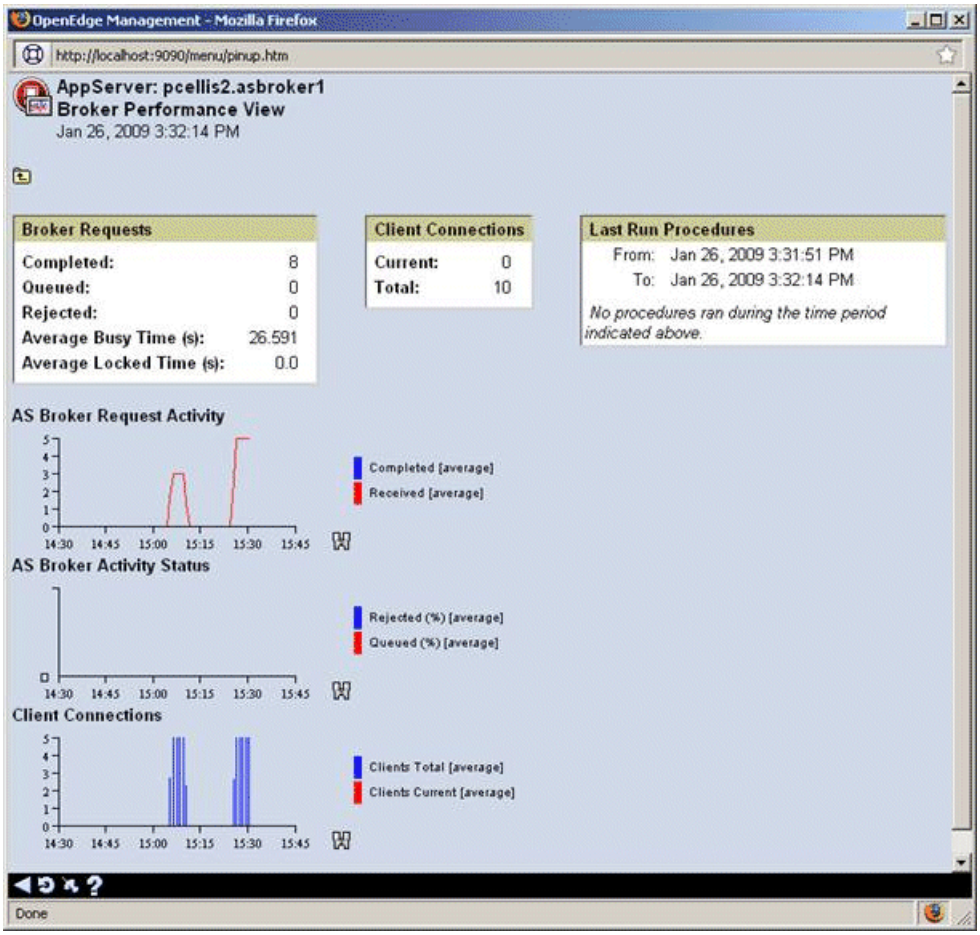
The following sections describe how to access and review details associated with each of these performance views.

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 Operatonal views information you want to review. See Accessing OpenEdge Management resource information on page 35 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:



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 the following table .

Table 24: AppServer broker connection workload details

Field	Description
Completed	The number of broker requests fulfilled
Queued	The number of broker requests to be processed
Rejected	The number of broker requests that could not be processed
Average Busy Time (s)	The average amount of time that the broker is busy servicing requests (expressed in milliseconds)
Average Locked Time (s)	The average amount of time that the broker is locked (expressed in milliseconds)

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 Data collection details on page 76 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. The following table identifies and briefly describes each of these graphs.

Table 25: AppServer broker performance-related graphs

Graph name	Description
AS Broker Request Activity	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.

Graph name	Description
AS Broker Activity Status	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.
Client Connections	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. **Note:** It is possible for this graph to accurately show that the number of current connections is higher than the total number of connections. The **Clients Total** reflects only new connections over the specified time period. In contrast, the **Clients Current** 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.

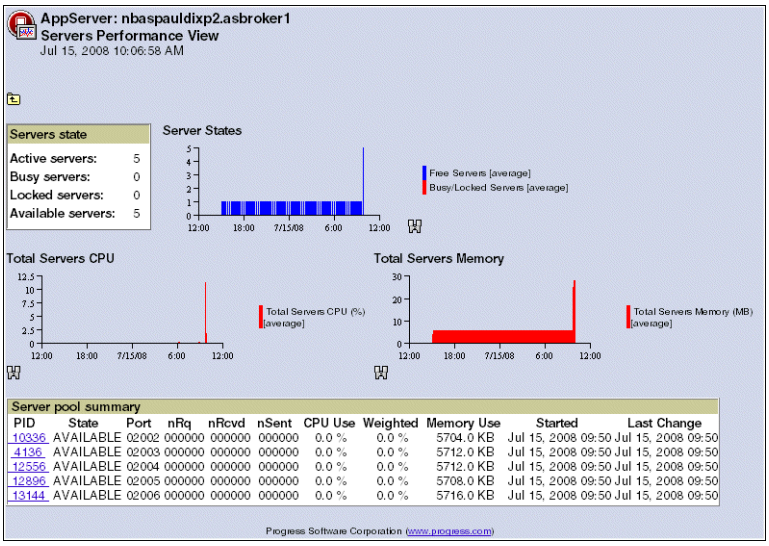
See Changing OpenEdge pinup graphical views on page 43 for details about changing the data appearance of graphs.

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 Accessing OpenEdge Management resource information on page 35 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 Application Services detail on page 113 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 Accessing and reviewing Informational views on page 114 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 Killing an AppServer process on page 82 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 Data collection details on page 76 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.

The following table identifies and briefly describes each of these graphs.

Table 26: AppServers performance-related graphs

Graph name	Description
Server States	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.

Graph name	Description
Total Servers CPU	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.
Total Servers Memory	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.

See Changing OpenEdge pinup graphical views on page 43 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.

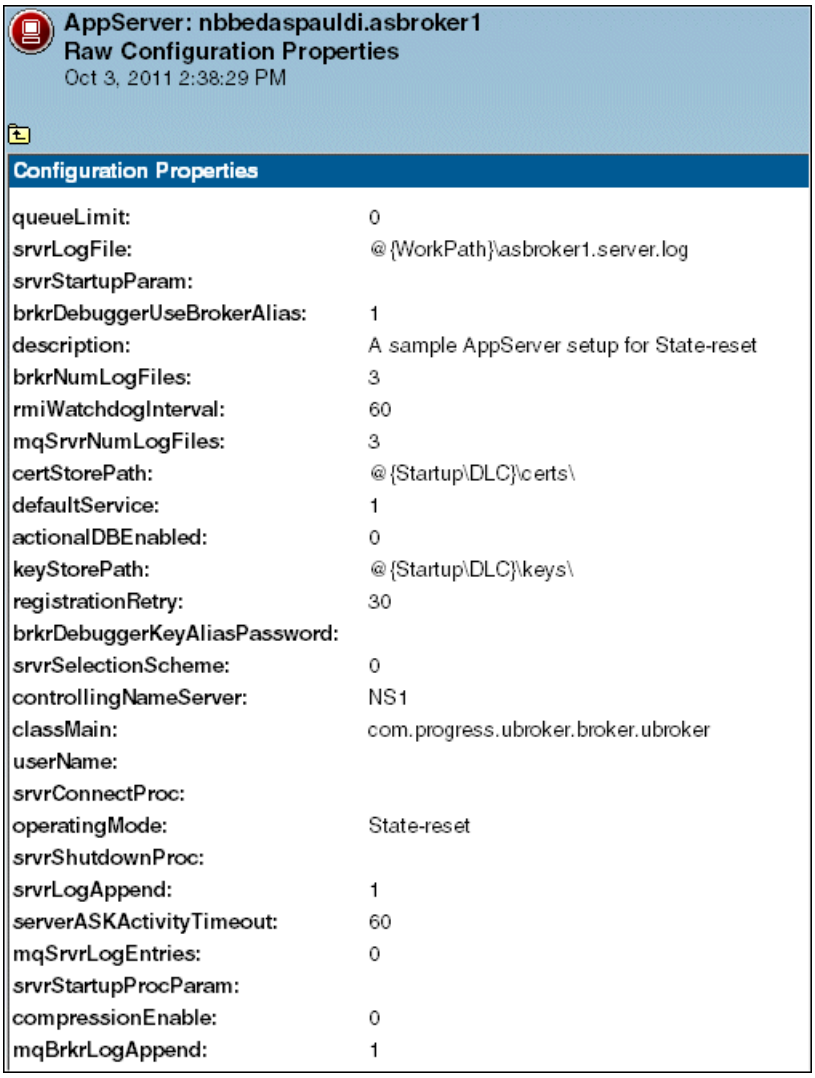
The following figure shows the **Informational views** section of the **AppServer** Details page.

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 Accessing OpenEdge Management resource information on page 35 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:



AppServer: nbbedaspauldi.asbroker1
Raw Configuration Properties
Oct 3, 2011 2:38:29 PM

Configuration Properties

queueLimit:	0
srvrLogFile:	@{WorkPath}\asbroker1.server.log
srvrStartupParam:	
brkrDebuggerUseBrokerAlias:	1
description:	A sample AppServer setup for State-reset
brkrNumLogFiles:	3
rmiWatchdogInterval:	60
mqSrvrNumLogFiles:	3
certStorePath:	@{Startup\DLC}\certs\
defaultService:	1
actionalDBEnabled:	0
keyStorePath:	@{Startup\DLC}\keys\
registrationRetry:	30
brkrDebuggerKeyAliasPassword:	
srvrSelectionScheme:	0
controllingNameServer:	NS1
classMain:	com.progress.ubroker.broker.ubroker
userName:	
srvrConnectProc:	
operatingMode:	State-reset
srvrShutdownProc:	
srvrLogAppend:	1
serverASKActivityTimeout:	60
mqSrvrLogEntries:	0
srvrStartupProcParam:	
compressionEnable:	0
mqBrkrLogAppend:	1

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.

5

Managing NameServer Data

This chapter presents OpenEdge Management features and functionality related to NameServers.

For details, see the following topics:

- 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

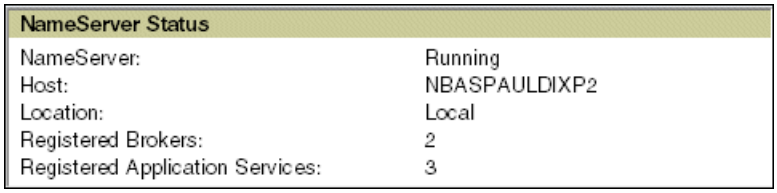
For details about using OpenEdge Management to configure NameServer properties, see *OpenEdge Management and OpenEdge Explorer: Configuration*.

You must have the appropriate OpenEdge Management role authorization to perform several of these tasks. For more information, see Role authorization and OpenEdge Management tasks on page 27.

Reviewing NameServer status

The **NameServer Status** section of the **NameServer** Details page summarizes current operational details about the NameServer. The following figure shows the **NameServer Status** section.

Figure 21: NameServer Status section



The following table describes each of these NameServer-related details.

Table 27: NameServer Status details

Field	Description
NameServer	The running status of the NameServer. Possible values are: • Running • Not running
Host	The host machine's name
Location	Whether the NameServer is local or remote
Registered Brokers	The number of brokers currently registered with the NameServer
Registered Application Services	The number of Application Services (that is, WebSpeed and AppServer) that are registered with the NameServer

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.

The following figure shows the **Command and control** section of the **NameServer** Details page.

Figure 22: Command and control section



The information in this section presents functional descriptions and procedural details related to the **NameServer Control** page.

The following table identifies where you can find information about other functionality related to the NameServer **Command and control** section.

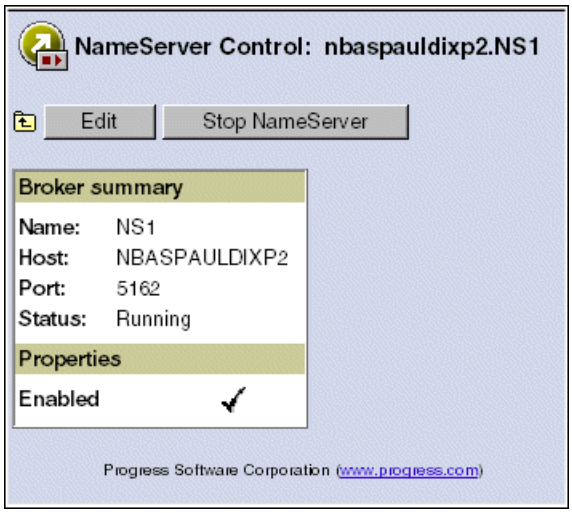
Table 28: Additional NameServer information

For NameServer-related details about . . .	See . . .
Log file monitors and viewers	Accessing and reviewing NameServer-related log file data on page 105
Monitoring plans and rules	Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters on page 171
Rule sets	Customizing a NameServer log file monitor on page 107
Configuration	*OpenEdge Management and OpenEdge Explorer: Configuration*

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. The following figure shows the **NameServer Control** page.

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.

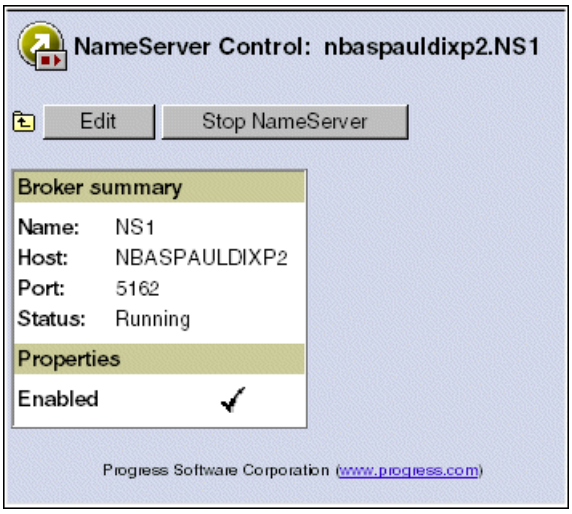
During the discovery process, all NameServers that OpenEdge Management discovers and identifies in the list frame under the NameServer category are **enabled** by default. (A check mark indicates that the **Enabled** option is set.) Once you enable a NameServer resource, OpenEdge Management uses its 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 Accessing OpenEdge Management resource information on page 35 for the detailed steps.
2. Click **Control** in the **Command and control** section to display the **NameServer Control** page:



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 Starting or Stopping OpenEdge resources on page 36

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 Customizing a NameServer log file monitor on page 107 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 and OpenEdge Explorer: Configuration*.

File Resource Defaults

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 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**.

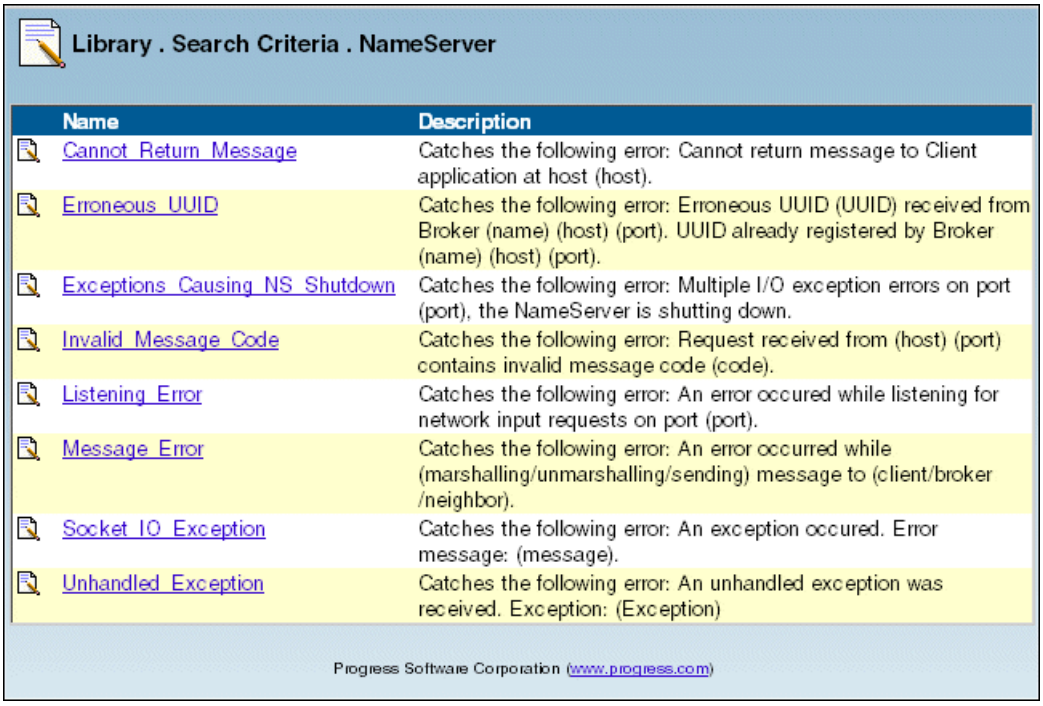
Reviewing predefined log file monitor search criteria

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:



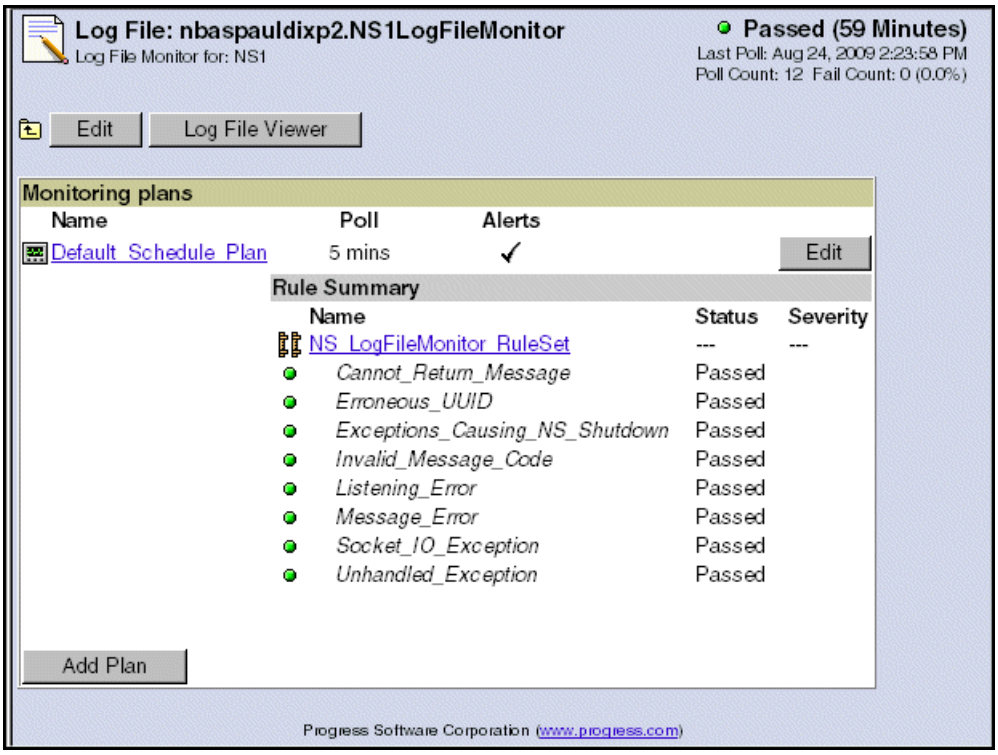
Note: You can also create your own search criteria to address a particular NameServer error for which you want to monitor a NameServer. For additional information, see Customizing a NameServer log file monitor on page 107.

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:
   a) Click **Add Plan** to add an existing monitoring plan to this resource monitor.
   b) Click **Edit** at the top of the page to change the description of this log file monitor.
   c) 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.

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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 S 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 on page 108 through Step 9 on page 109.
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.

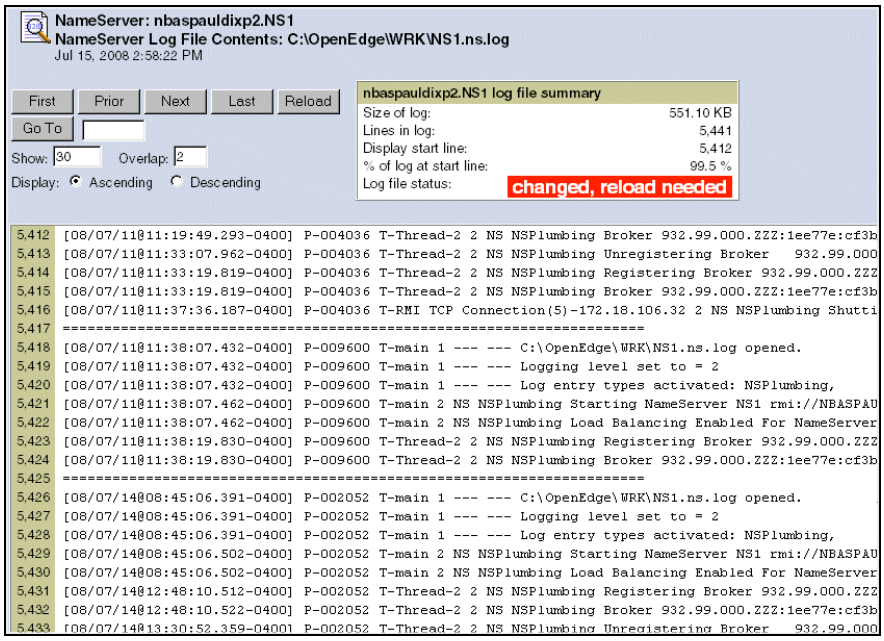
Using the NameServer log file viewer

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

The following figure 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** 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**.

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** Detailspage provides two sections that provide access to NameServer-relevant operating details. These sections are:

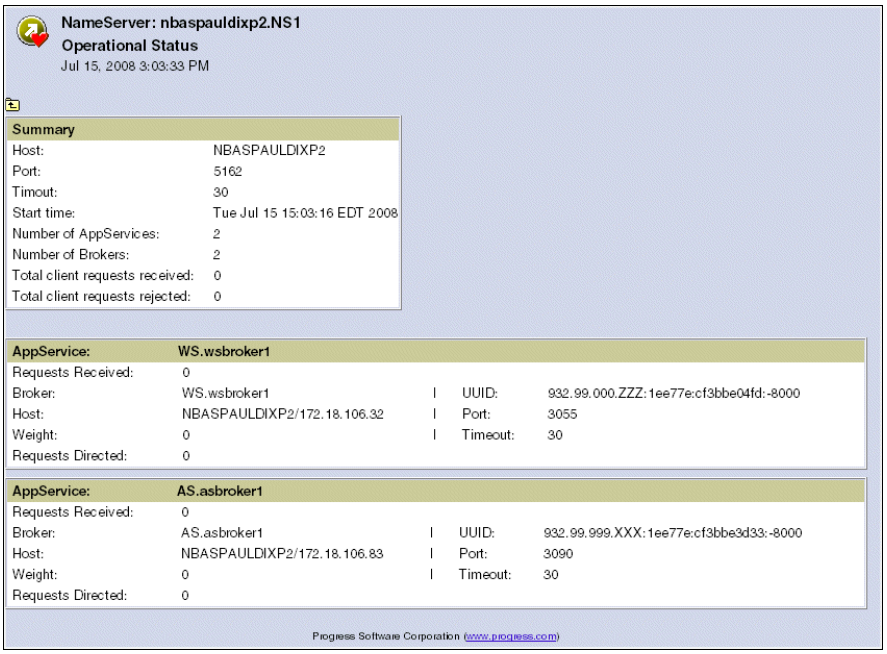
- Operational views
- Informational views

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 Accessing OpenEdge Management resource information on page 35 for the detailed procedure.
2. Click **Status** in the **Operational Views** section to display the **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 following table and the **Requests Received** and **Requests Directed** fields in the next table for details.

The following table 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.

The following table 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 29: Summary details on the Operational Status page

Field	Description
Host	The NameServer's host machine name.
Port	The number of the UDP Port that the NameServer uses to listen for client connection requests and registration messages from AppServers and Transaction Servers.

Field	Description
Timeout	The value, in seconds, that indicates how often the NameServer checks for WebSpeed or AppServer broker instances that have timed out. When a WebSpeed or AppServer broker instance registers with a NameServer, the instance indicates how often it will send "keep-alive" 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 "keep-alive" message from a broker instance within the broker's registration retry time, the NameServer automatically unregisters the instance.
Start time	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.
Number of AppServices	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.
Number of Brokers	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.
Total client requests received	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.
Total client requests rejected	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.

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. The following table 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.

The following table 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 30: NameServer details on the Operational Status page

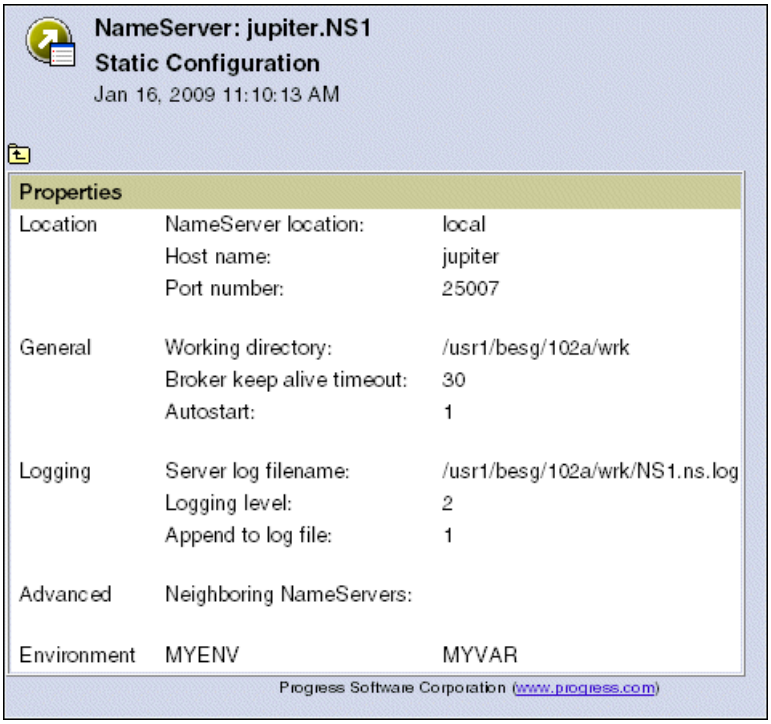
Field	Description
Requests Received	The number of client requests received for this Application Service. This count is maintained when one or more brokers are registered to support the Application Service. The count is reset when the Application Service is first identified to the NameServer.
Broker	The 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.
Host	The broker's host machine name and numeric address.
Weight	The priority weight assigned to the Unified Broker instance for the purpose of load balancing.
Requests Directed	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.
UUID	The unique number for the Unified Broker instance.
Port	The TCP/IP port number that the broker listens on to pick up client connection requests.
Timeout	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.

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 Accessing OpenEdge Management resource information on page 35 for the detailed steps.
2. Click **Properties** in the **Informational views** section to display the **Static Configuration** page:



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.

The following table describes the contents of this section.

Table 31: Properties details on the Static Configuration page

This field . . .	Displays . . .
Location	The specific values that pertain to these fields: • **NameServer location** — Indicates whether the NameServer is *local* or *remote*. 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. • **Host name** — Identifies the name of the host machine. • **Port number** — 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.

This field . . .	Displays . . .
General	The specific values that pertain to these fields: • **Working directory** — Identifies the NameServer working directory, including the pathname. • **Broker keep alive timeout** — Identifies a value, in seconds, that indicates how often the NameServer should check for Unified Broker instances that have timed out. 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. • **Autostart** — 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.
Logging	The specific values that pertain to these fields: • **Server log filename** — Identifies the NameServer log filename, including the pathname. • **Logging level** — Shows one of three possible values to specify the amount of information to be written to the server log: Error only, Terse, or Verbose. • **Append to log file** — 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.
Advanced	The specific value that pertains to the optional field **Neighboring NameServers**. 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).
Environment	The specific NameServer environment variables that are defined for the process in which the NameServer executes.

6

Managing DataServer Data

This chapter presents OpenEdge Management features and functionality related to the DataServers for Oracle, and MS SQL Server.

Note: The ODBC DataServer is no longer supported in OpenEdge Release 12.0

For details, see the following topics:

- 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 Reviewing DataServer broker status on page 118
- Modifying broker-related control settings, such as starting and stopping a broker, as described in Modifying DataServer control settings on page 119

- Accessing and viewing broker- and server-specific data collected through log files, as described in Accessing and reviewing DataServer-related log file data on page 125
- Monitoring and managing DataServer brokers using monitoring plans and rules, as described in Using the DataServer log file viewers on page 129

You must have appropriate OpenEdge Management role authorization to perform several of these tasks. See Role authorization and OpenEdge Management tasks on page 27 for details.

You can also use OpenEdge Management to configure DataServer properties. For details, see *OpenEdge Management and OpenEdge Explorer: Configuration*.

Oracle and MS SQL Server DataServers

OpenEdge Management allows you to work with instances of 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 the following figure , summarizes current operational details about the DataServer broker.

Figure 25: Oracle DataServer Status section



The following table describes each of the DataServer broker details in the **Status** section of the Details page.

Table 32: DataServer status details

Field	Description
Host	The host machine's name.
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.

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).

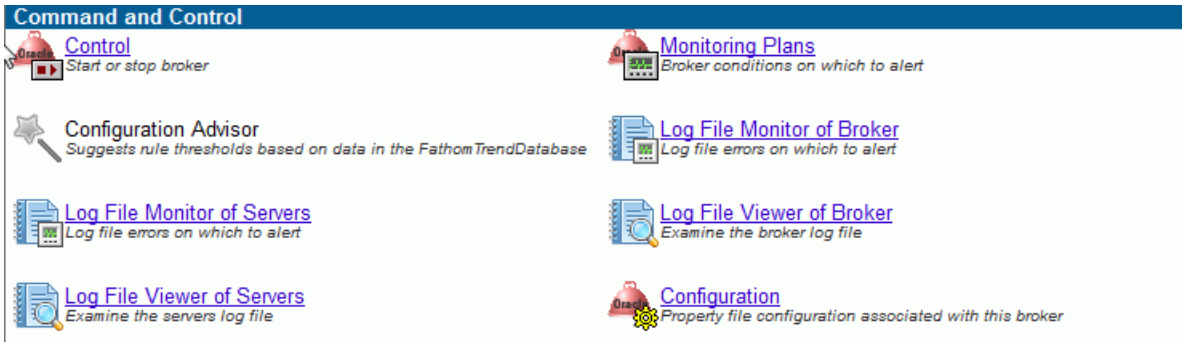
Modifying DataServer control settings

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

The following figure shows the **Command and control** section of the **DataServer** Details page.

Figure 26: Command and control section



The following table identifies where you can find information about other functionality related to the DataServer **Command and control** section.

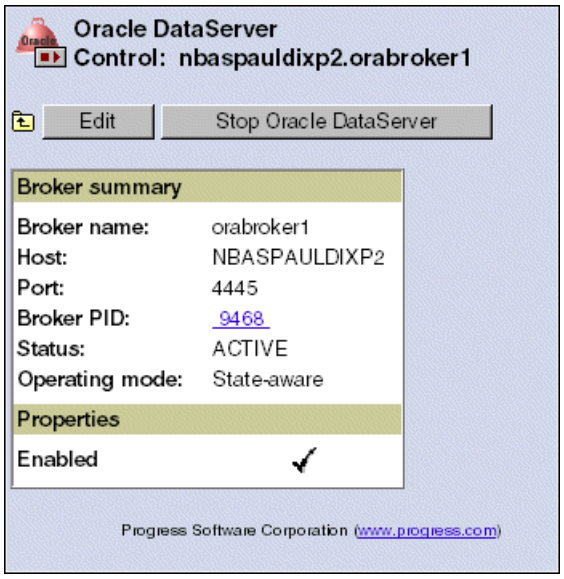
Table 33: Additional DataServer information

For DataServer-related details about . . .	See . . .
Broker and server log file monitors and viewers	Accessing and reviewing DataServer-related log file data on page 125
Broker monitoring plans and rules	Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters on page 171
Broker rule sets	Customizing a DataServer broker log file monitor on page 127
Configuration	*OpenEdge Management and OpenEdge Explorer: Configuration*

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. The following figure shows the DataServer **Control** page.

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 Viewing broker process details on page 121 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.)

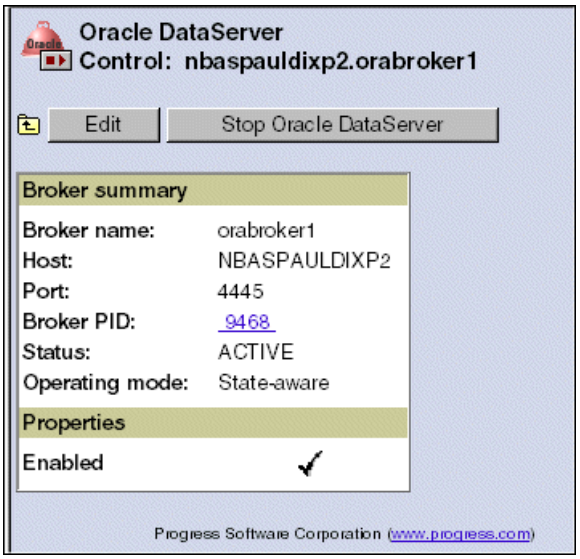
A check mark associated with a property indicates that the property is set.

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 Accessing OpenEdge Management resource information on page 35 for the detailed steps.
2. Click **Control** in the **Command and control** section to display the **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 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 Data collection details on page 50.
- 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.

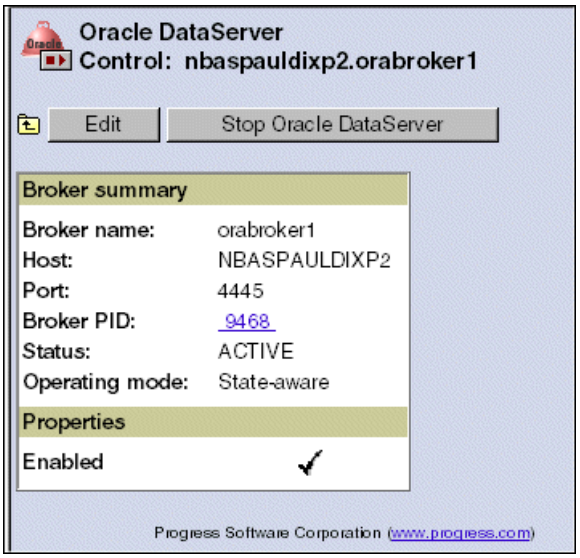
You can also change the DataServer broker controls by starting or stopping the broker instance. To start or stop a DataServer broker instance, see Starting or Stopping OpenEdge resources on page 36.

Viewing broker process details

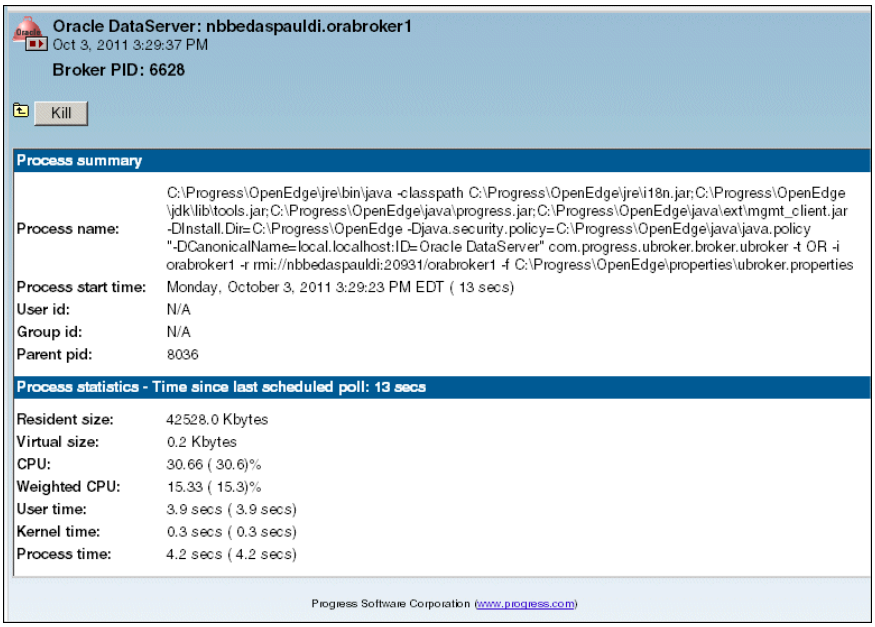
You can also access real-time details and statistics that provide you with snapshot information about an individual broker at the point you access this information from the **DataServer Control** page. Review this information to help you assess a broker's performance.

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 Accessing OpenEdge Management resource information on page 35 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:



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.

The following table identifies and describes the fields of information presented in the **Process statistics** section.

Table 34: Process statistics section real-time operational data

Field	Description
Resident size	The physical size of the process as defined by the host system
Virtual size	The virtual size of the process as defined by the host system
CPU	The percentage of time spent using the CPU in either the user or kernel mode since the last scheduled poll
Weighted CPU	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.
User time	The amount of CPU time spent in the user mode since the last scheduled poll
Kernel time	The amount of CPU time spent in the kernel mode since the last scheduled poll
Process time	The sum of the values that appear in the **User time** and **Kernel time** fields

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:

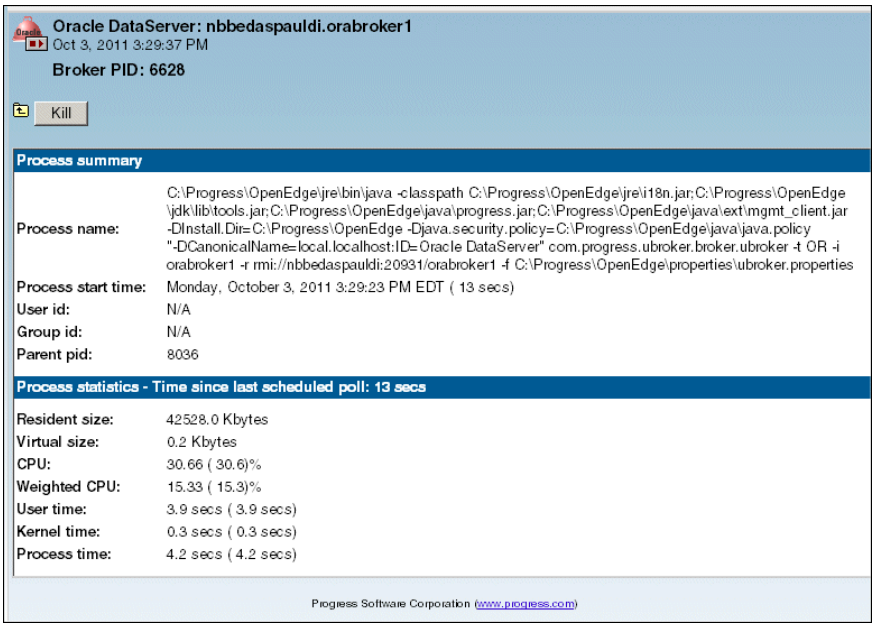
- **Signal Name** — SIGKILL

- **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 **BrokerPID** 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 Viewing broker process details on page 121 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

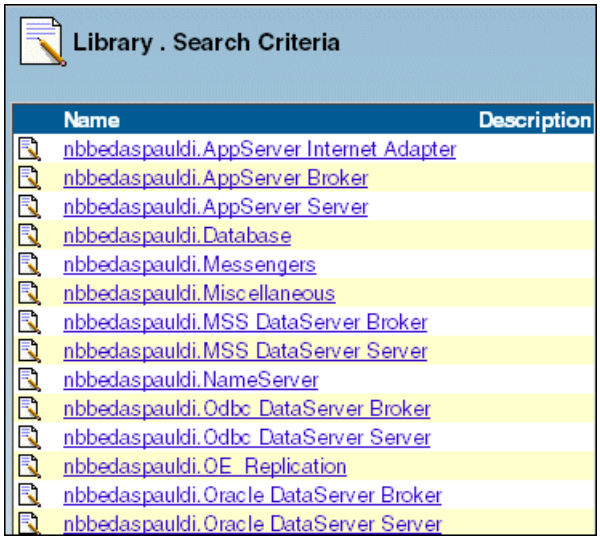
Data that you can capture and view using the DataServer resource log file monitors and viewers can help you:

- 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.

  The following figure shows an excerpt of the **Search Criteria** subcategories, including the **DataServer Broker** and **DataServer Server** links to the predefined search criteria.

Figure 28: Search criteria



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 Customizing a DataServer broker log file monitor on page 127 for details.
- At the OpenEdge Management Component Library level under the **DataServer** subcategory. The search text and type are shareable at this level. See Working with rule sets on page 186 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 Customizing a DataServer broker log file monitor on page 127 for details.

The default values are as follows:

- The DataServer default log file monitor is disabled until the DataServer 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*.

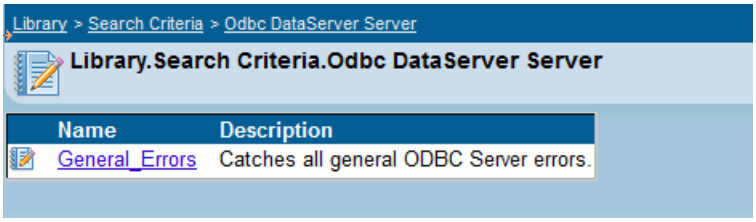
Reviewing predefined log file monitor search criteria

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:



Note: You can also create your own search criteria to address a particular error for which you want to monitor a DataServer. See the 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 Accessing OpenEdge Management resource information on page 35.
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:



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 on page 128 through Step 9 on page 129.
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

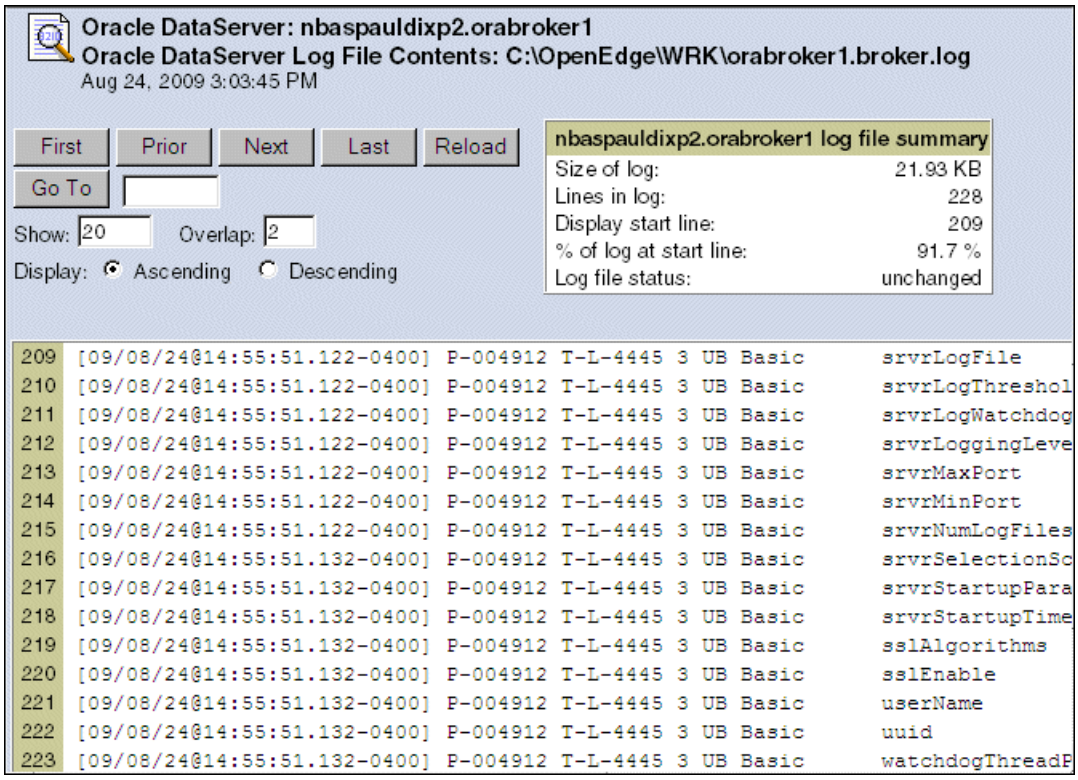
To view the contents of each DataServer log file, access the viewer associated with each individual log file.

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.

The following figure 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



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.

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

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.

7

Managing AppServer Internet Adapter Data

This chapter presents OpenEdge Management features and functionality related to the AppServer Internet Adapter.

For details, see the following topics:

- 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

AppServer Internet Adapter overview

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 on page 134
- Accessing and reviewing AppServer Internet Adapter log file data on page 136
- Using the AppServer Internet Adapter log file viewer on page 140

You must have appropriate OpenEdge Management role authorization to perform several of these tasks. See Role authorization and OpenEdge Management tasks on page 27 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*.

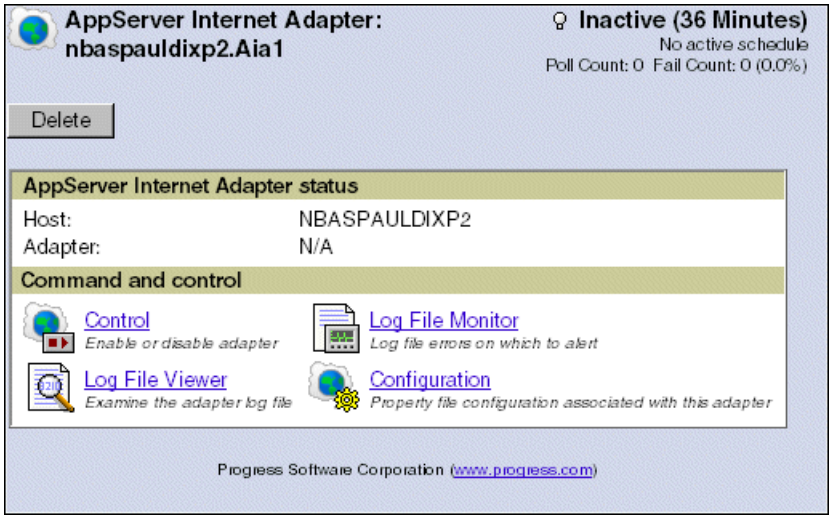
Working with AppServer Internet Adapter control settings

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.

The following figure shows the **Command and control** section of the **AppServer Internet Adapter** Details page.

Figure 30: Command and control section



The following table identifies where you can find information about other functionality related to the AppServer **Command and control** section.

Table 35: Additional AppServer Internet Adapter information

For details about . . .	See . . .
Log file monitoring plans and rules	Getting started with log files for AIA resources on page 136 and the AppServer Internet Adapter log file monitor default values on page 137

For details about . . .	See . . .
Log file monitor rule sets	Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters on page 171
Configuration	*OpenEdge Management and OpenEdge Explorer: Configuration*

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. The following figure shows the **AppServer Internet Adapter Control** page.

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 **nbasapauldixp2.Aia1LogFileMonitor** as the log file monitor name for an AIA instance named **Aia1**and the container named **nbaspauldixp2**. The associated log file viewer name for this AIA instance is **nbaspauldixp2.Aia1 AppServer Internet Adapter Log File Contents.**

You cannot change these names.

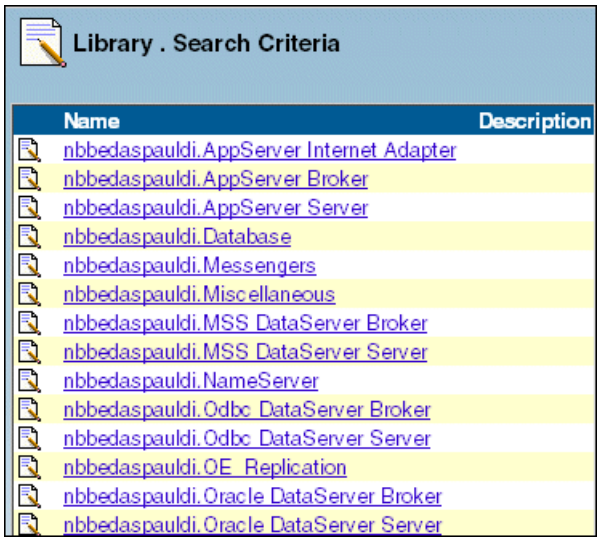
Characteristics of an AppServer Internet Adapter resource log file monitor

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.

The following figure shows an excerpt from the **Search Criteria** subcategories, including the **AppServer Internet Adapter** link to the predefined search criteria.

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 Customizing an AppServer Internet Adapter log file monitor on page 138 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 Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters on page 171 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 Customizing an AppServer Internet Adapter log file monitor on page 138 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:



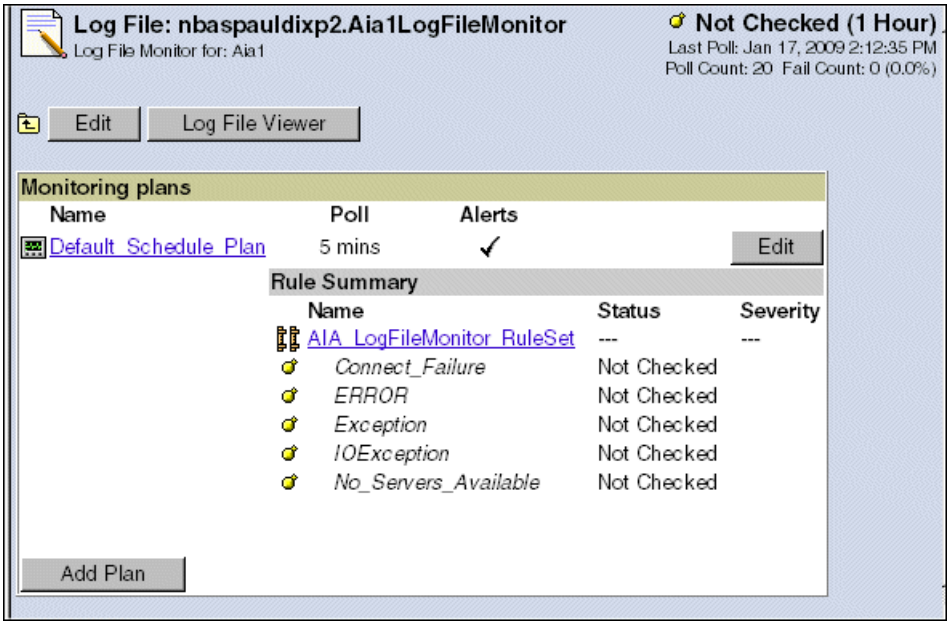
Note: You can also create your own search criteria to address a particular AIA error for which you want to monitor an AIA instance. See Customizing an AppServer Internet Adapter log file monitor on page 138 for details.

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 Accessing OpenEdge Management resource information on page 35.
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:



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 on page 139 through Step 9 on page 140.
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.

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

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.

8

Managing SonicMQ Adapter Data

This chapter presents OpenEdge Management features and functionality related to the SonicMQ Adapter.

For details, see the following topics:

- 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 Role authorization and OpenEdge Management tasks on page 27 for details.

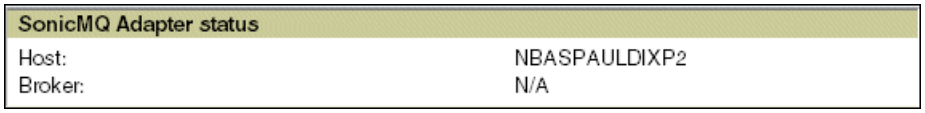
Configuring SonicMQ Adapter properties

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. The following figure shows the **SonicMQ Adapter Status** section.

Figure 33: SonicMQ Adapter Status section



The following table describes each of the SonicMQ Adapter broker details in the **SonicMQ Adapter Status** section of the **SonicMQ Adapter** Details page.

Table 36: SonicMQ Adapter Status details

Field	Description
Host	The host machine's name.
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 might not see these intermediary states.

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.

The following figure shows the **Command and control** section of the **SonicMQ Adapter** Details page.

Figure 34: Command and control section



The following table identifies where you can find information about other functionality related to the SonicMQ Adapter **Command and control** section.

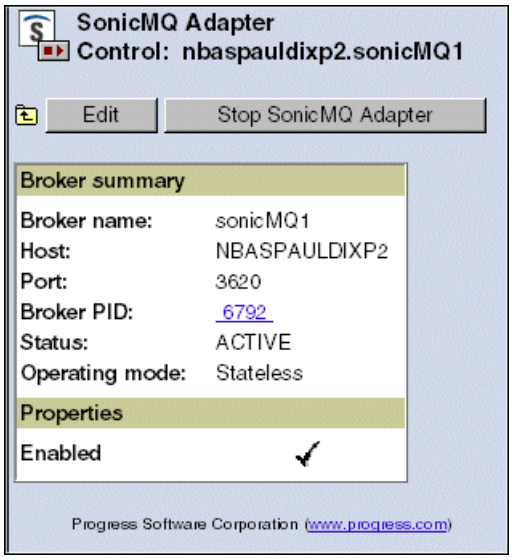
Table 37: Additional SonicMQ Adapter information

For details about . . .	See . . .
Broker and server log file monitors and viewers	Accessing and reviewing SonicMQ Adapter log file data on page 151
Log file monitoring plans and rules	Customizing a SonicMQ Adapter broker log file monitor on page 154
Log file monitor rule sets	Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters on page 171
Configuration	*OpenEdge Management and OpenEdge Explorer: Configuration*

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. The following figure shows the **SonicMQ Adapter Control** page.

Figure 35: 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 Viewing broker process details on page 148 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.)

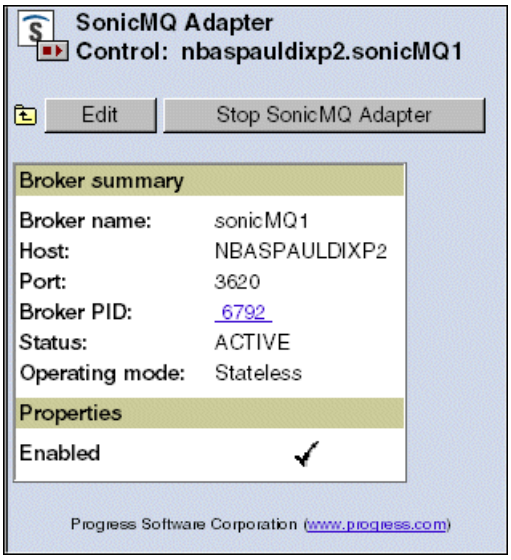
A check mark associated with a property indicates that the property is set. To deselect the option, click **Edit**. Clear the check mark, and click **Save**. Note that the **Enabled** option is the only item you can change on the **SonicMQ Adapter Control** page.

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 Accessing OpenEdge Management resource information on page 35 for the detailed steps.
2. Click **Control** in the **Command and control** section to display the **SonicMQ Adapter 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 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 Data collection details on page 50.
- 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.

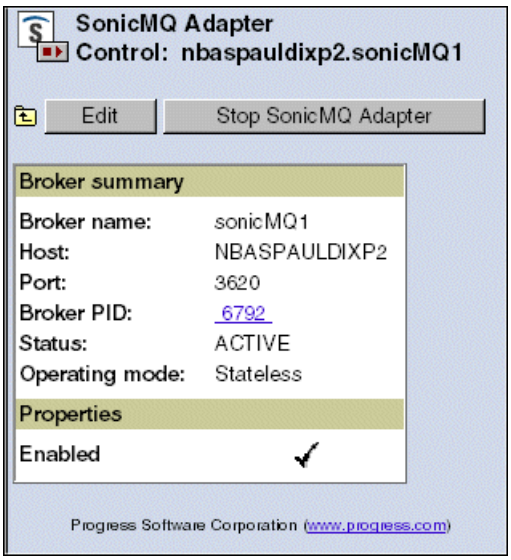
You can also change the SonicMQ Adapter's broker controls by starting or stopping the broker instance. To start or stop a SonicMQ Adapter broker instance, see Starting or Stopping OpenEdge resources on page 36.

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.

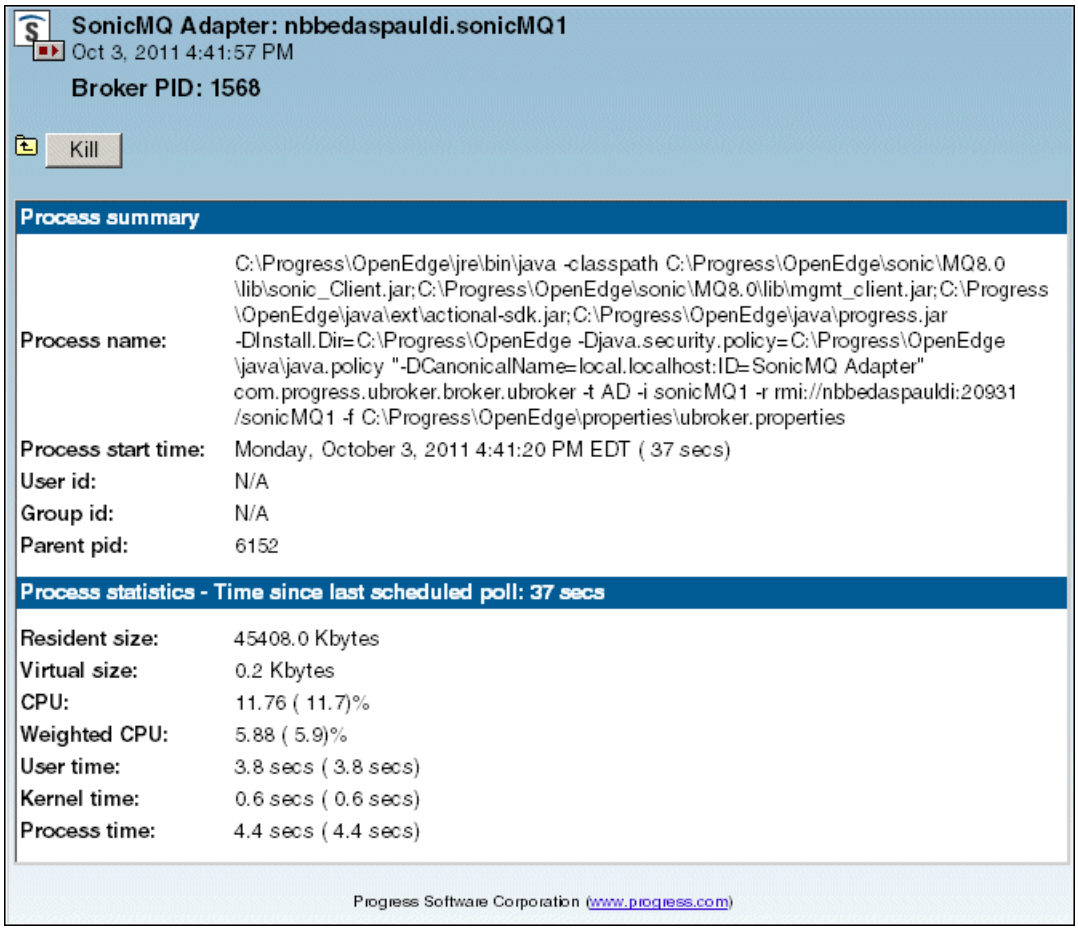
To access broker processing details:

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 Accessing OpenEdge Management resource information on page 35 for the detailed steps.
2. Click **Control** in the **Command and control** section to display the **SonicMQ Adapter 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:



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.

The following table identifies and describes the fields of information presented in the **Process statistics** section.

Table 38: Process statistics operational data

Field	Description
Resident size	The physical size of the process as defined by the host system.
Virtual size	The virtual size of the process as defined by the host system.
CPU	The percentage of time spent using the CPU in either the user or kernel mode since the last scheduled poll.

Field	Description
Weighted CPU	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. **Note:** This value appears only when there is more than one CPU process on the system where the process is running.
User time	The amount of CPU time spent in the user mode since the last scheduled poll.
Kernel time	The amount of CPU time spent in the kernel mode since the last scheduled poll.
Process time	The sum of the values that appear in the **User time** and **Kernel time** fields.

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 Viewing broker process details on page 148 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** *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.

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** and **nbaspauldixp2.sonicMQ1 SonicMQ Adapter Log File Contents**
- **Server-related log file names** — Displays **nbaspauldixp2.sonicMQ1ServerLogFileMonitor** and **nbaspauldixp2.sonicMQ1 SonicMQ Adapter Server Log File Contents**

You cannot change these names.

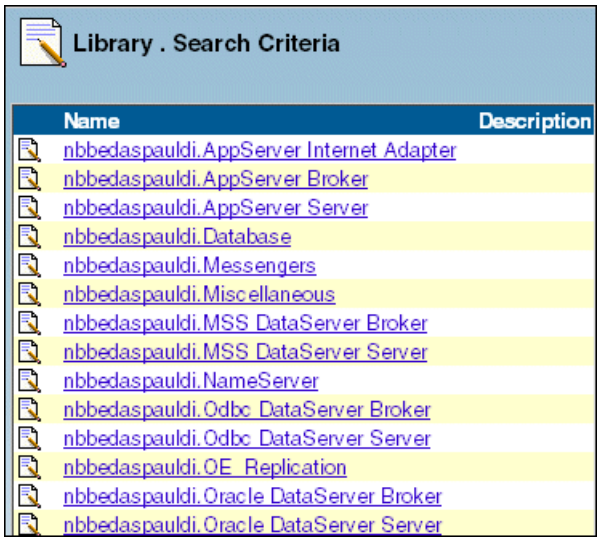
Characteristics of SonicMQ Adapter resource log file monitors

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.

  The following figure shows the **Search Criteria** subcategories, including the **SonicMQ Adapter Broker** and **SonicMQ Adapter Server** links to the predefined search criteria.

Figure 36: Search criteria



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 Customizing a SonicMQ Adapter broker log file monitor on page 154 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 Working with rule sets on page 186 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 Customizing a SonicMQ Adapter broker log file monitor on page 154 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 and OpenEdge Explorer: Configuration*.

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:

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, and click **SonicMQ Adapter Resource Defaults**.
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**.

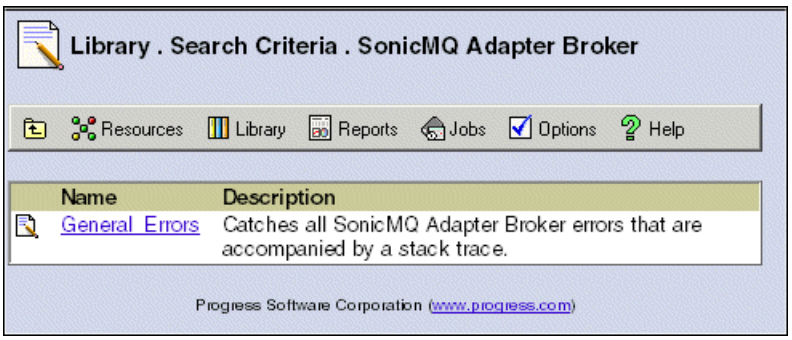
Reviewing predefined log file monitor search criteria

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:



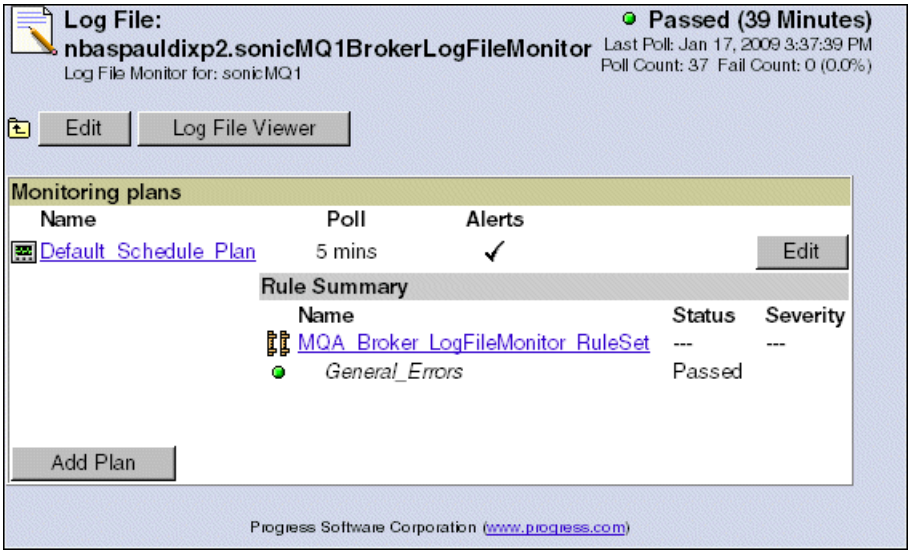
Note: You can also create your own search criteria to address a particular SonicMQ Adapter error for which you want to monitor a SonicMQ Adapter. See Customizing a SonicMQ Adapter broker log file monitor on page 154 for details.

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.

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 Accessing OpenEdge Management resource information on page 35.
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 **CreateLog 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 on page 155 through Step 9 on page 155.
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

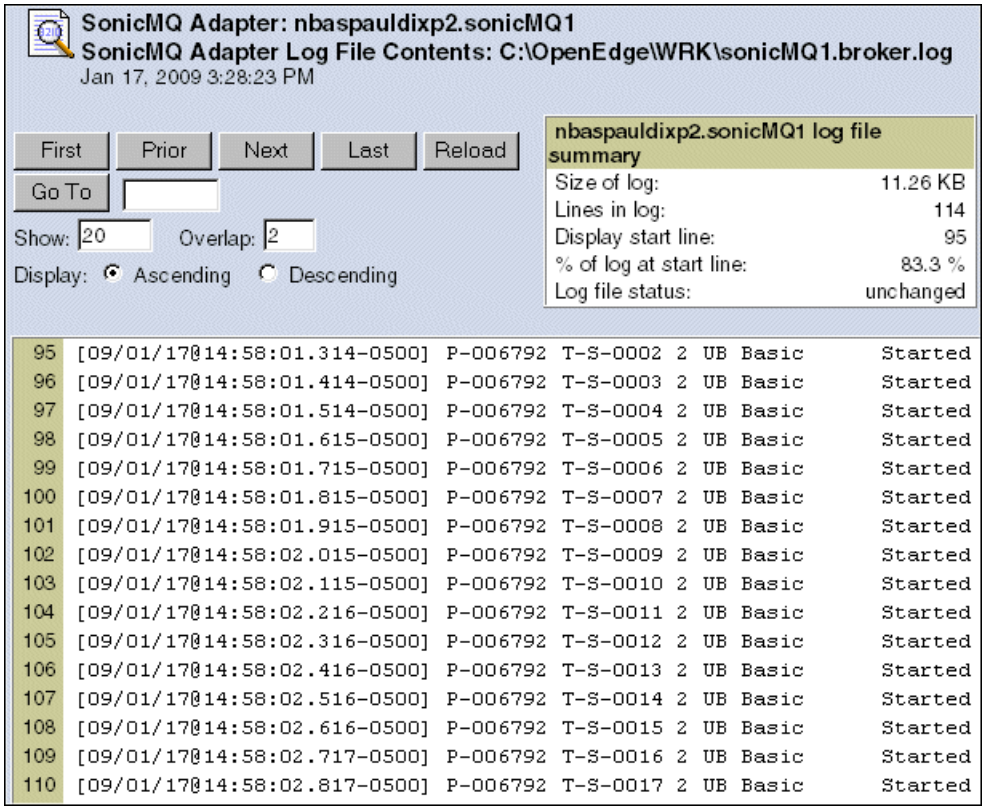
To view the contents of each SonicMQ Adapter log file, access the viewer associated with each individual log file.

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.

The following figure presents the SonicMQ Adapter broker log file viewer, which is showing the contents of an SonicMQ Adapter broker log file.

Figure 37: SonicMQ Adapter Broker log file viewer



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.

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

The following figure shows the **Operations views** section of the **SonicMQ Adapter Details** page.

Figure 38: Operations views section

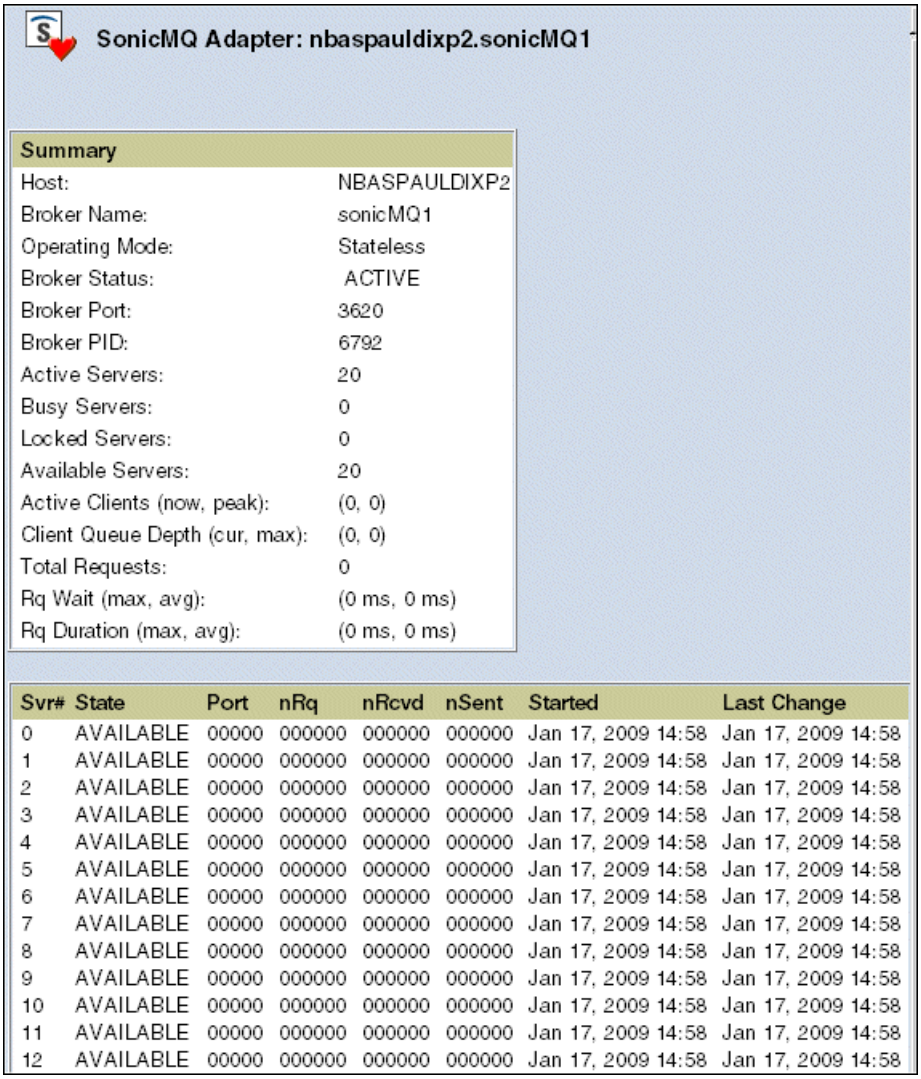


Accessing and reviewing SonicMQ Adapter status

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 Accessing OpenEdge Management resource information on page 35 for the detailed procedure.
2. Click **Status** in the **Operations views** section. A page comprising two summary sections appears, as shown:



SonicMQ Adapter: nbaspauldixp2.sonicMQ1

Summary	
Host:	NBASPAULDIXP2
Broker Name:	sonicMQ1
Operating Mode:	Stateless
Broker Status:	ACTIVE
Broker Port:	3620
Broker PID:	6792
Active Servers:	20
Busy Servers:	0
Locked Servers:	0
Available Servers:	20
Active Clients (now, peak):	(0, 0)
Client Queue Depth (cur, max):	(0, 0)
Total Requests:	0
Rq Wait (max, avg):	(0 ms, 0 ms)
Rq Duration (max, avg):	(0 ms, 0 ms)

Svr#	State	Port	nRq	nRcvd	nSent	Started	Last Change
0	AVAILABLE	00000	000000	000000	000000	Jan 17, 2009 14:58	Jan 17, 2009 14:58
1	AVAILABLE	00000	000000	000000	000000	Jan 17, 2009 14:58	Jan 17, 2009 14:58
2	AVAILABLE	00000	000000	000000	000000	Jan 17, 2009 14:58	Jan 17, 2009 14:58
3	AVAILABLE	00000	000000	000000	000000	Jan 17, 2009 14:58	Jan 17, 2009 14:58
4	AVAILABLE	00000	000000	000000	000000	Jan 17, 2009 14:58	Jan 17, 2009 14:58
5	AVAILABLE	00000	000000	000000	000000	Jan 17, 2009 14:58	Jan 17, 2009 14:58
6	AVAILABLE	00000	000000	000000	000000	Jan 17, 2009 14:58	Jan 17, 2009 14:58
7	AVAILABLE	00000	000000	000000	000000	Jan 17, 2009 14:58	Jan 17, 2009 14:58
8	AVAILABLE	00000	000000	000000	000000	Jan 17, 2009 14:58	Jan 17, 2009 14:58
9	AVAILABLE	00000	000000	000000	000000	Jan 17, 2009 14:58	Jan 17, 2009 14:58
10	AVAILABLE	00000	000000	000000	000000	Jan 17, 2009 14:58	Jan 17, 2009 14:58
11	AVAILABLE	00000	000000	000000	000000	Jan 17, 2009 14:58	Jan 17, 2009 14:58
12	AVAILABLE	00000	000000	000000	000000	Jan 17, 2009 14:58	Jan 17, 2009 14:58

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 the following table .

Table 39: SonicMQ Adapter data summary

Field	Description
Host	The machine on which the server is running.
Broker Name	The name of the broker whose status you are viewing.
Operating Mode	The operating mode shows as Stateless. You cannot modify this field.
Broker Status	The current state of the broker.
Broker Port	The TCP/IP port number that the broker listens to.
Broker PID	The process ID of the broker.
Active Servers	The number of running servers.
Busy Servers	The number of servers handling client requests.
Locked Servers	The number of servers handling a bound connection.
Available Servers	The number of servers available to handle broker requests.
Active Clients (now, peak)	The number of active clients at the present time and the peak number.
Client Queue Depth (cur, max)	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.
Total Requests	The total number of requests.
Req Wait (max, avg)	The request wait time.
Req Duration (max, avg)	The duration of the request.
Svr#	The particular server number.
State	The current state of the server process.
Port	The TCP/IP port number used by the server.
nRq	The number of messages sent to the server.
nRcvd	The number of messages received by the server.

Field	Description
nSent	The number of requests sent by the server.
Started	The time stamp indicating when the server process started.
Last Change	The time stamp indicating when the server process last changed execution state.

9

Managing WebSpeed Messenger Data

This chapter presents OpenEdge Management features and functionality related to WebSpeed Messengers.

For details, see the following topics:

- Messenger overview
- Working with Messenger control settings
- Accessing and reviewing Messenger log file data
- Using the Messenger log file viewer

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 Role authorization and OpenEdge Management tasks on page 27 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.

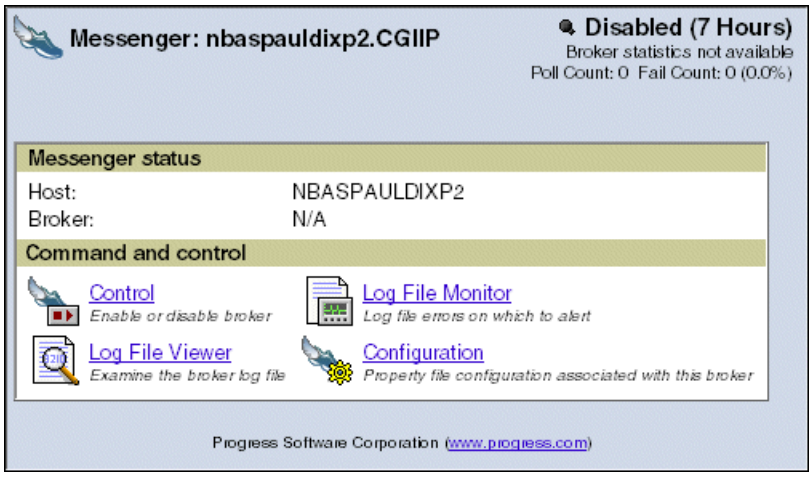
Working with Messenger control settings

The **Command and control** section of the **Messenger** instance'sDetails 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.

The following image shows the **Command and control** section of a **Messenger** instance's Details page.

Figure 39: Command and control section



The following image identifies where you can find information about other functionality related to the AppServer **Command and control** section.

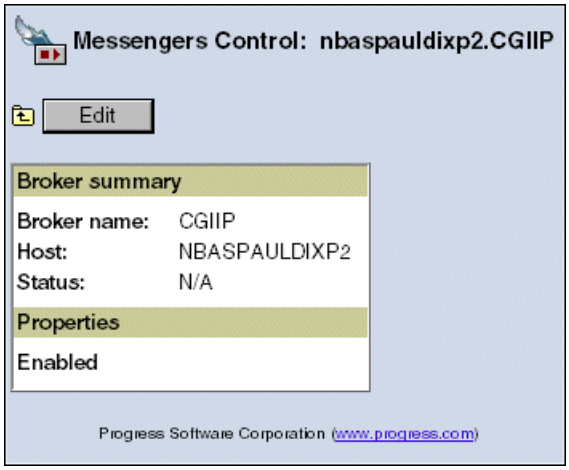
Table 40: Additional Messenger information

For details about . . .	See . . .
Log file monitoring plans and rules	Getting started with log files for Messenger resources on page 164 and Messenger log file monitor default values on page 165 section
Log file monitor rule sets	Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters on page 171
Configuration	*OpenEdge Management and OpenEdge Explorer: Configuration*

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. The following figure shows the **Messengers Control** page.

Figure 40: 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 **nbaspauldixp2**. The associated log file viewer name for this Messenger instance is **nbaspauldixp2.CGIIP Messengers Log File Contents.**

You cannot change these names.

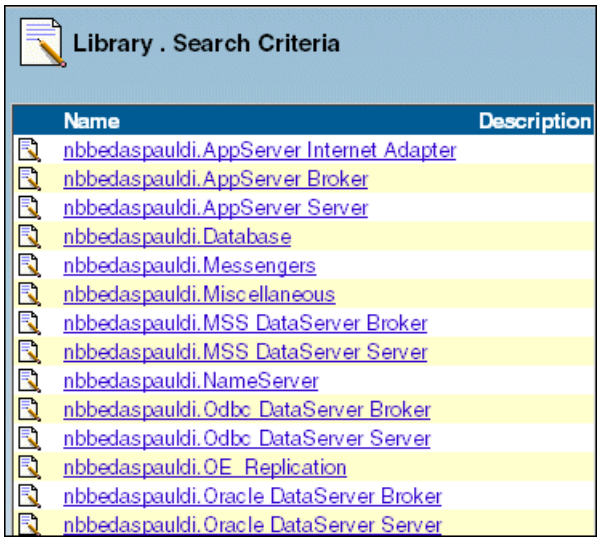
Characteristics of a Messenger resource log file monitor

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.

The following figure shows an excerpt from the **Search Criteria** subcategories, including the **Messengers** link to the predefined search criteria.

Figure 41: Library Search criteria



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 Customizing a Messenger log file monitor on page 167 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 Customizing a Messenger log file monitor on page 167 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

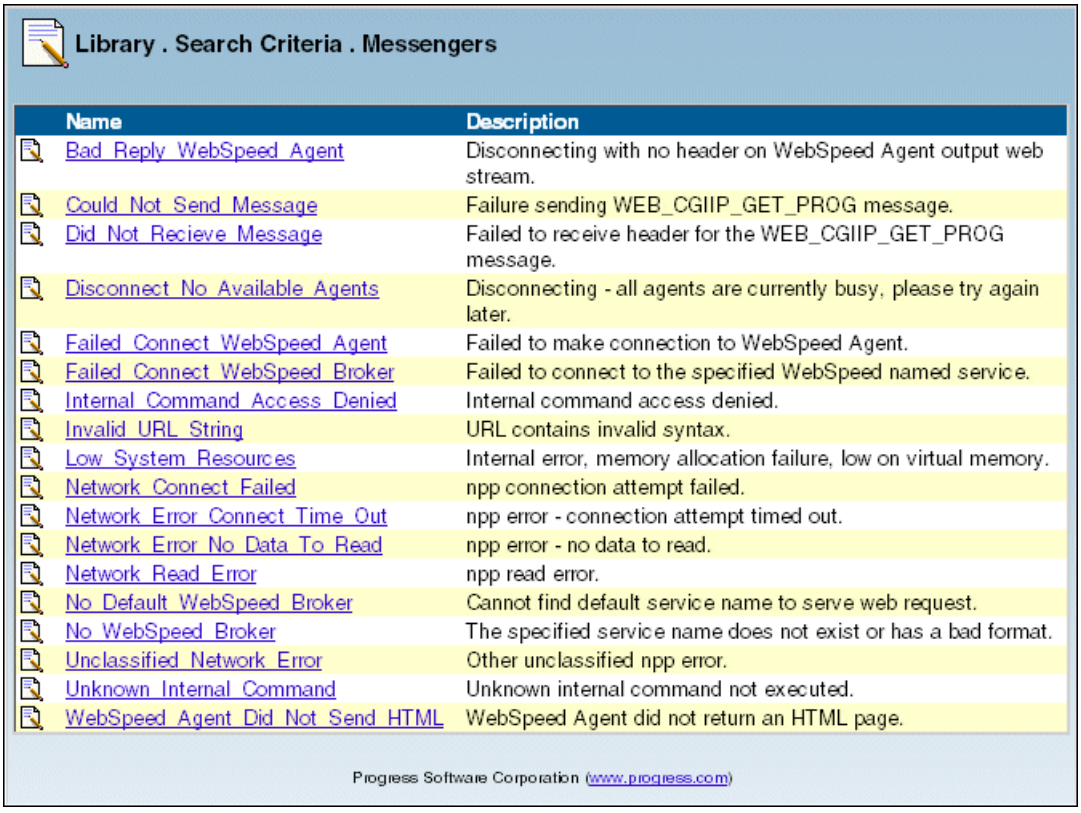
Each log file provides predefined search criteria that address common Messenger-related events. Use these searches as defined, or copy and customize them. Review the predefined search criteria before you customize a Messenger log file monitor.

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:



Note: You can also create your own search criteria to address a particular error for which you want to monitor a Messenger instance. See Customizing a Messenger log file monitor on page 167 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 Accessing OpenEdge Management resource information on page 35.
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.
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:
   a) Select **Messengers** 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 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 **CreateLog 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 on page 167 through Step 9 on page 167.
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'sDetails 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.

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

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.

10

Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters

You use OpenEdge Management's monitoring capabilities to monitor OpenEdge server, DataServer, Messenger, and Adapter resources (as you do other resource types).

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*.

For details, see the following topics:

- 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

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 on page 176 and Understanding and using resource monitor rules on page 181 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
  - OE Web Server 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 Default polling and trend values on page 173 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 Calculating Rule Threshold Settings Using the Configuration Advisor on page 191.

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 **OpenEdge Management Resource Monitoring Defaults** page.

To see OpenEdge resource-specific default values:

1. Click **Options** in OpenEdge Management console, and select **Resource Monitor Defaults**. The **OpenEdge Management Resource Monitoring Defaults** page appears.
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 Data collection details on page 50 for details about how to implement data collection with WebSpeed brokers. See Data collection details on page 50 for details about how to use data collection with AppServer brokers. See Calculating Rule Threshold Settings Using the Configuration Advisor on page 191 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

The following table 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

Field	Default value	Description
Schedule	**Default Schedule Plan**	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.
Poll	**5 minutes**	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.
Alerts	**3**	Indicates whether alerts are active and will be generated when the plan is active.

Field	Default value	Description
Trend	**3**	Indicates whether the statistical data monitored while the plan is active will be stored to the OpenEdge Management Trend Database. The **Trend Performance Data** field value is involved in setting data collection.
Rule Summary	Default rule set for the specific OpenEdge resource	There is a default rule set for each type of OpenEdge resource.

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.

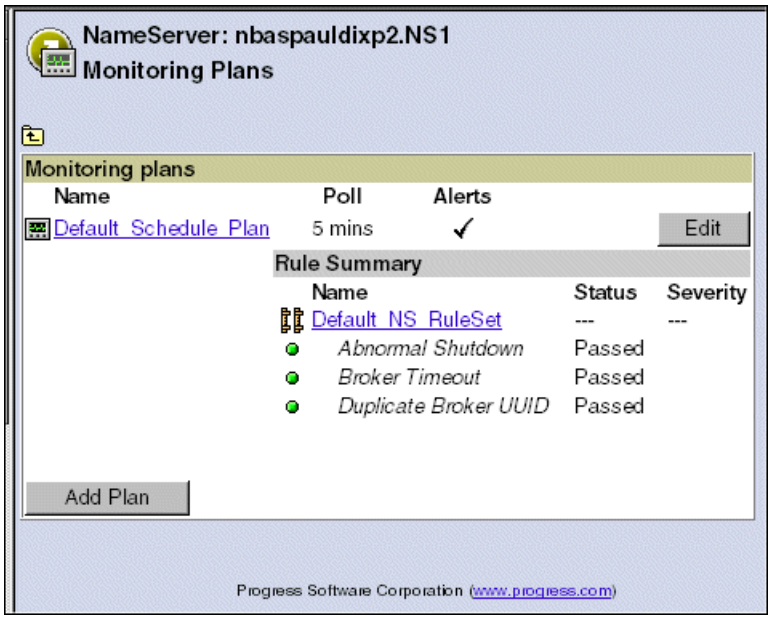
OpenEdge default monitoring plan examples

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

The following figure 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**.

Figure 42: NameServer instance default monitoring example



Maintaining monitoring plans

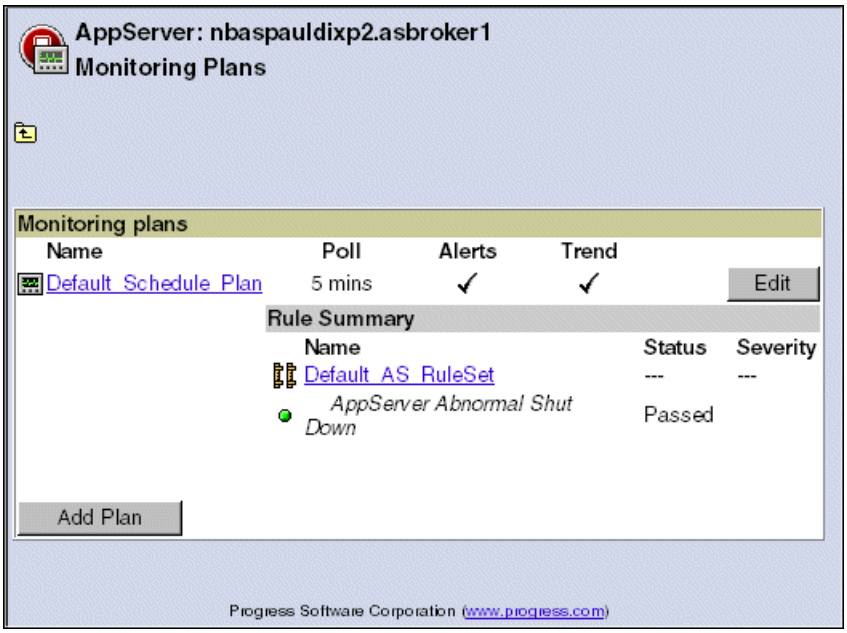
You use the same basic tasks to create resource monitoring plans for any OpenEdge Management resource.

Updating monitoring plans

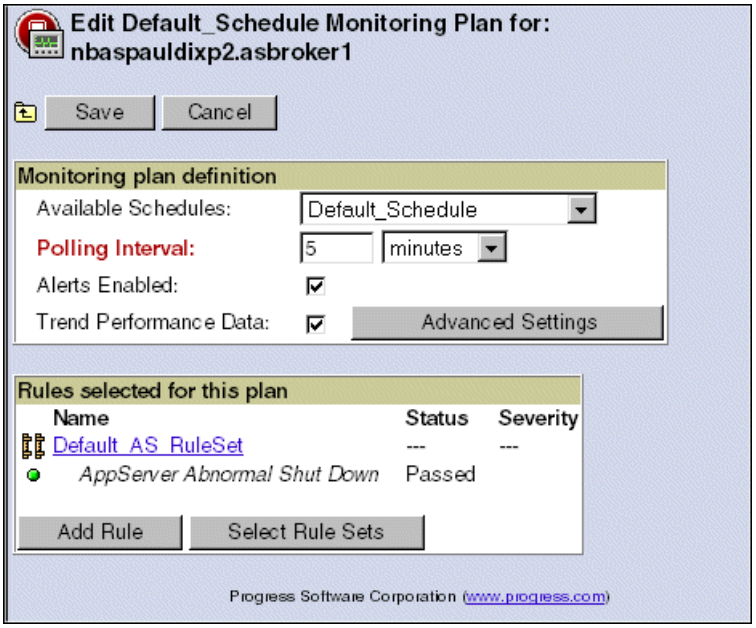
This section describes how to access and update a monitoring plan and associated rules using the AppServer broker resource as the example.

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 Accessing OpenEdge Management resource information on page 35. 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:



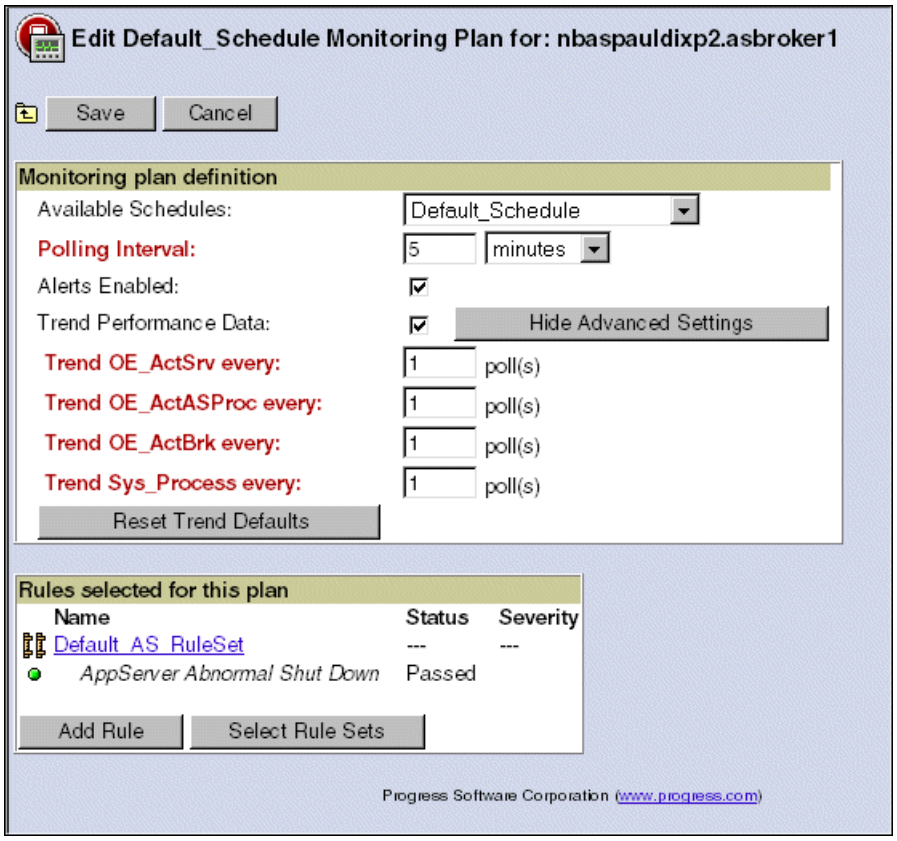
3. Select the specific schedule associated with the plan that you want to update. Click **Edit** associated with that plan. The following page appears when you choose to edit the **Default Schedule Plan**:



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 on page 178.

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 Properties on page 49. For AppServer broker-related details, see Properties on page 75.

d) Click **Advanced Settings** to see all trend value settings, as shown:



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:

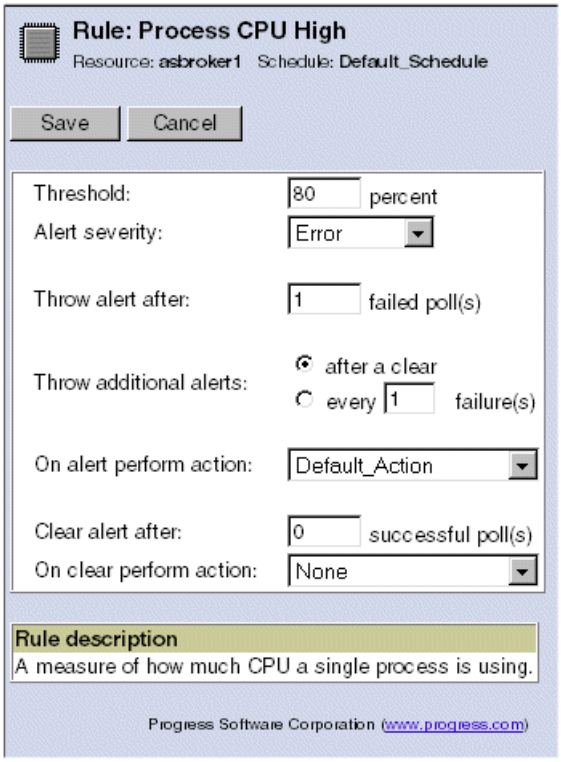


The **Available Rules** page contains a dynamic list that includes only those rules not yet applied to a given monitoring plan.

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 Understanding and using resource monitor rules on page 181.

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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:



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 Understanding and using resource monitor rules on page 181. 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 on page 179 and Step 7 on page 180 in the above step 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 for details Working with rule sets on page 186.
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 The following table 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

Status	Color	Description
Pass	Green	The resource monitor is currently working.
Fail	Red	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.
Not Running	Blue	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.
Not Checked	Yellow	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.
Disabled	Dark Gray	The resource monitor has been disabled and is not currently monitoring a resource.
Inactive	White	There is no active monitoring plan.
Offline	Light Gray	The resource is currently offline.

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 Updating monitoring plans on page 176, 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 **AddRule** on the monitoring page when it is displayed in edit mode. See the procedure in Maintaining monitoring plans on page 176 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.

The following table describes three examples.

Table 43: Examples of AppServer-related ABL procedure entries

This ABL procedure entry . . .	Runs a procedure that . . .
RUN myOrders.p ON SERVER hAppSrv	Is PROPATH-relative. This entry refers to a procedure that is located in a directory or procedure library specified on PROPATH.
RUN myApp/myAccounts.p ON Server hAppSrv	Is PROPATH-relative. This entry refers to a procedure that is located in the subdirectory called myApp that is relative to PROPATH.
RUN processOrder IN hProc	Shows the execution of an internal procedure.

To measure any of the example procedures noted in the above table 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.

Queued 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, OE Web Servers, 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:

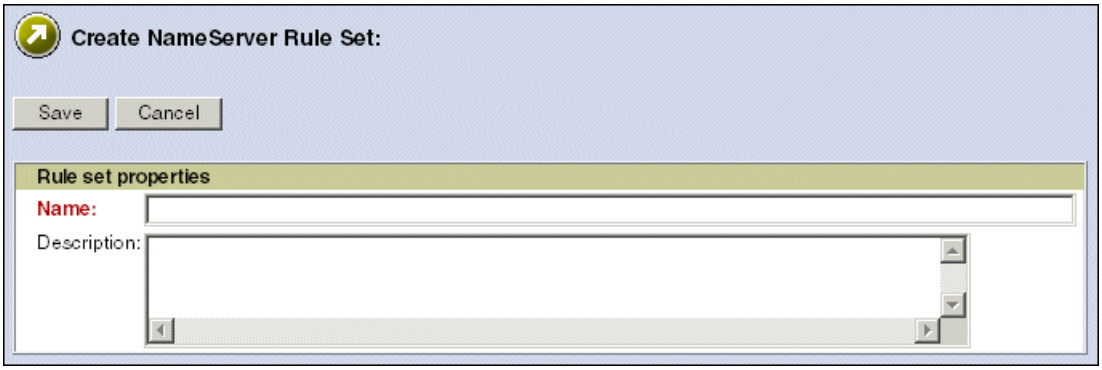
- Associate the rule set with a monitoring plan. The polled rules in the sets are evaluated when the monitoring plan is active and the resource is polled. (Asynchronous rules trigger immediately when these rules are violated.)
- Use an updated rule set. If you associate a rule set with a monitoring plan 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:

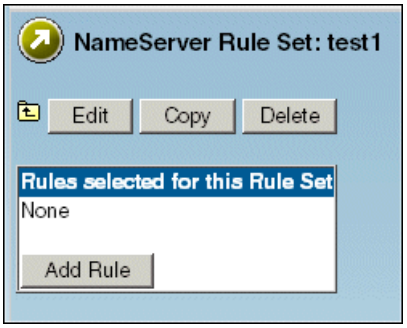
1. Choose one:

- 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.

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. The following figure shows the **Rule Sets** subcategories that appear in 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.

11

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.

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.

For details, see the following topics:

- Configuration Advisor overview
- Setting rules-related criteria
- Understanding the recommended threshold settings
- Determining the effectiveness of your selections

Configuration Advisor overview

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 Data collection details on page 50. For details about data collection and the AppServer broker, see Data collection details on page 50.

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.

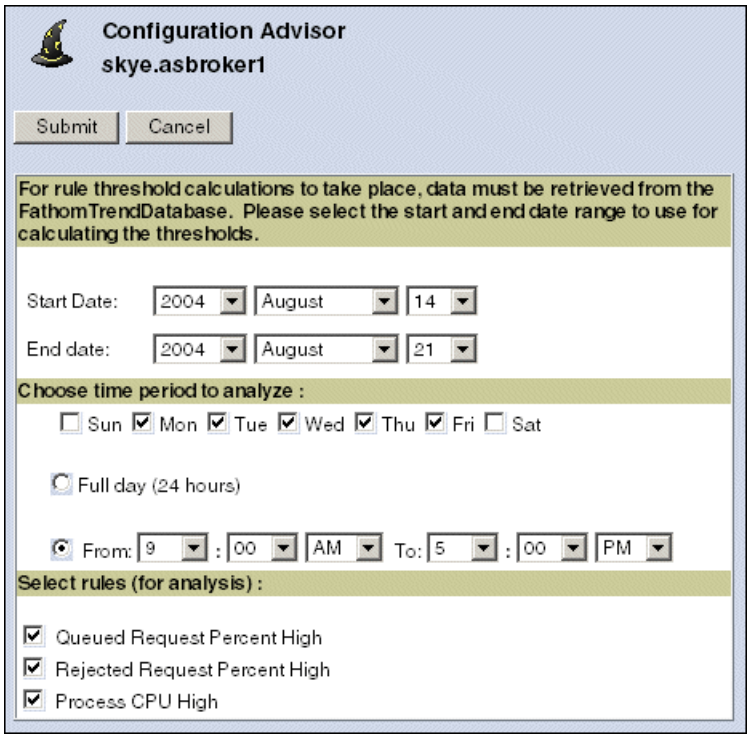
Data analysis and recommended values overview

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

The following figure shows the initial **Configuration Advisor** page. In this example, the resource is an AppServer broker, **asbroker1**.

Figure 43: Configuration Advisor page



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

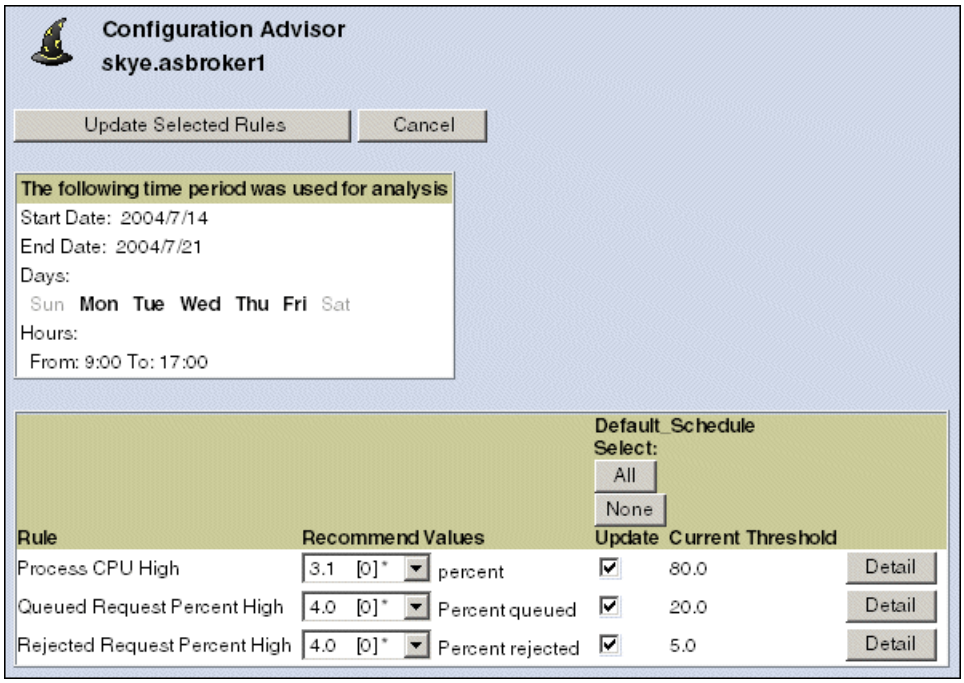
Based on the availability of the values and data, the Configuration Advisor generates a set of recommended values, or settings, for each rule processed. The range of values is adjusted as necessary, to ensure that the rules do not violate the minimum or maximum allowable values for the rule.

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.

The following figure shows the page that appears after you submit your initial **Configuration Advisor** page.

Figure 44: 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. The above figure 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

The following table highlights where to find additional information about using the Configuration Advisor.

Table 44: Configuration Advisor details

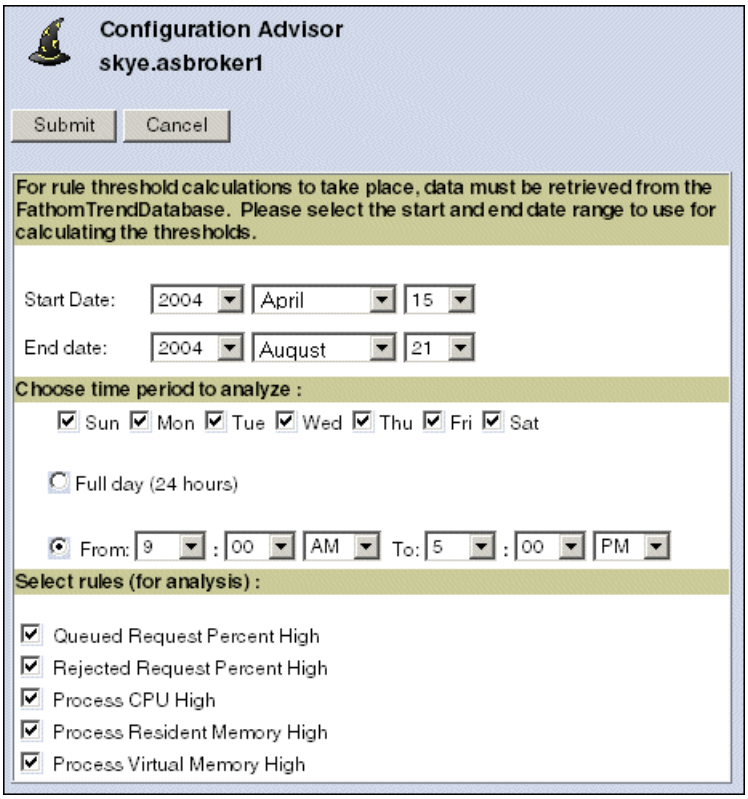
For information about . . .	See . . .
The procedure to set user-supplied criteria used in the data analysis process	Setting rules-related criteria on page 196
Understanding the Configuration Advisor's recommended settings, including evaluating and applying these settings	Understanding the recommended threshold settings on page 198
Reviewing your selections	Determining the effectiveness of your selections on page 203

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 Accessing OpenEdge Management resource information on page 35 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.

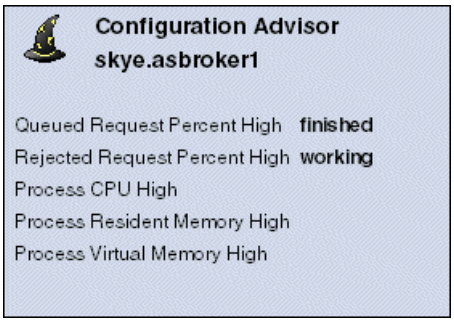
4. In the **Choose time period to analyze** section, identify the time frame that defines a representative period of time for which the rules are generally active, or being used. This time frame is the period against which OpenEdge Management calculates the baseline activity. (The default time period, as shown in Step 2 on page 196, 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 on page 196, 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:



   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.

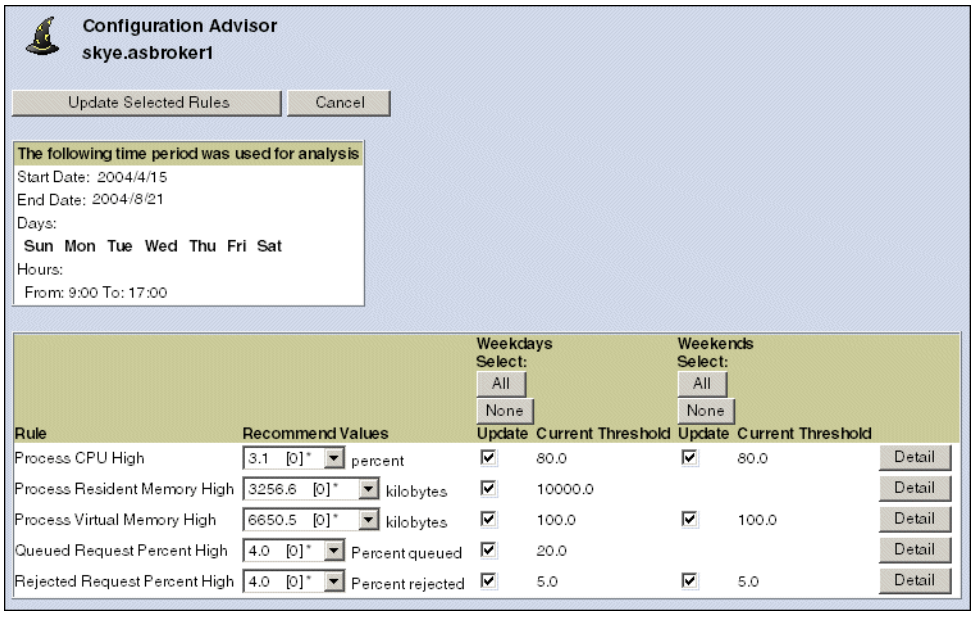
Note: Once you click Submit, you can elect to go to another page and perform some other action. You can return to the Configuration Advisor at a later time to check status and/or result details.

When all calculations have been completed and reported, the Configuration Advisor presents the calculated results. See Understanding the recommended threshold settings on page 198 for details.

Understanding the recommended threshold settings

The following figure shows the data calculation page that appears after the Configuration Advisor has applied the criteria you submitted to calculate the threshold settings.

Figure 45: Configuration Advisor recommended values



The Configuration Advisor page has multiple purposes. The following table identifies the key tasks you can perform from this page and the associated procedures.

Table 45: Tasks using the Configuration Advisor Calculations page

To . . .	See . . .
Review and evaluate the recommended threshold settings calculated for each rule processed	Evaluating recommended settings on page 199
Display and review the specific details about each individual rule's analysis	Evaluating recommended settings on page 199
Compare current threshold settings defined for each of the rules processed with the recommended threshold calculations	Comparing and selecting threshold settings on page 201
Update the threshold values for the rules and the specific schedules that you have selected	Submitting your threshold setting selections on page 202

Evaluating recommended settings

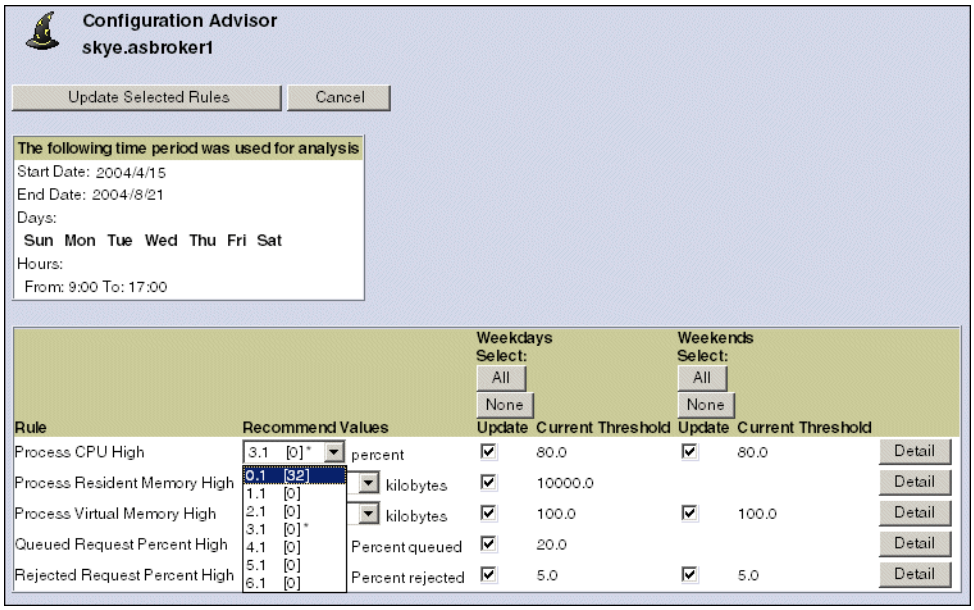
As Figure 45: Configuration Advisor recommended values on page 198 shows, each rule the Configuration Advisor has analyzed appears as an individual line item in the **Rule** section. Associated with each rule is a **Recommended Values** drop-down list which contains one of the following entries:

- 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 Setting rules-related criteria on page 196 for details.

Reviewing recommended values

The Configuration Advisor displays a range of possible values from which to select. The following figure 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 46: 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.

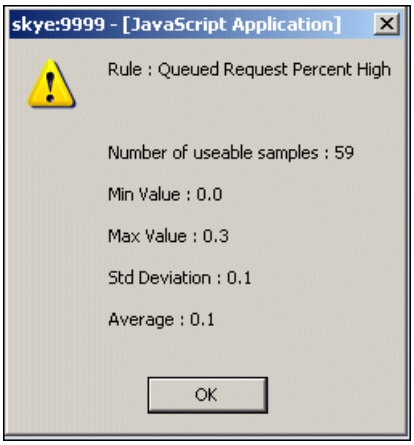
Using the Detail button

Each rule row has an associated **Detail** button.

view details about a rule's analysis, click **Detail** for a row. The **Detail** page appears.

The following figure shows a Detail page, which presents the data used to evaluate the **Queued Request Percent High** rule.

Figure 47: Detail page analysis content



The following table describes the contents of the **Detail** page.

Table 46: Detail page fields and descriptions

This field . . .	Describes . . .
Number of useable samples	The number of data samples extracted from the OpenEdge Management Trend Database
Min Value	The minimum value derived from the data set
Max Value	The maximum value derived from the data set
Std Deviation	The root mean squared deviation
Average	The average value derived from the data set

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.

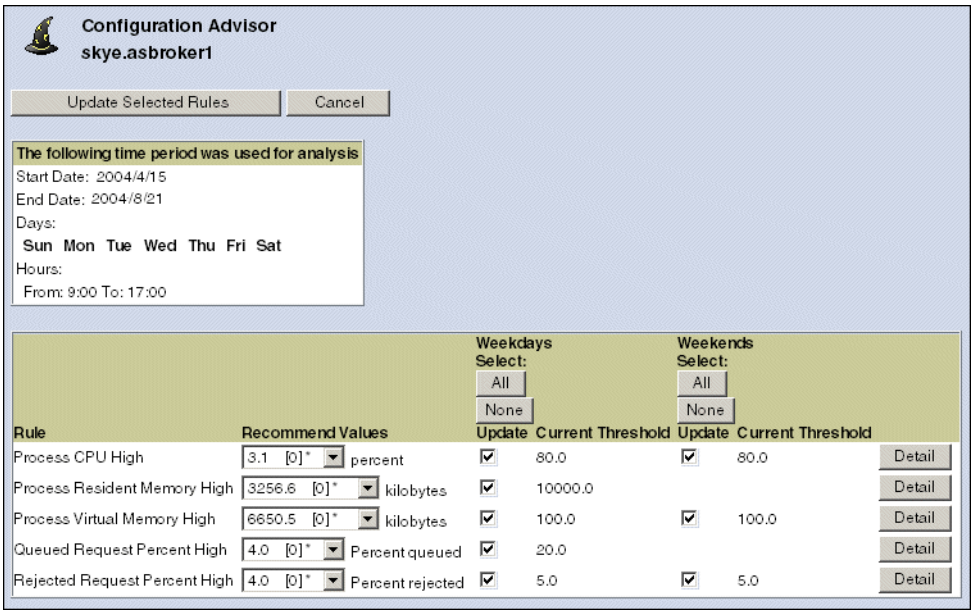
Comparing and selecting threshold settings

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:



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 Additional selection criteria on page 202 for details.
4. Repeat Step 1 on page 202 through Step 3 on page 202 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.

12

Analyzing OpenEdge Application Performance

This chapter describes how you can use OpenEdge Management to analyze OpenEdge server application performance.

For details, see the following topics:

- 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 on page 206

  This section provides a model for administrators to use.

- OpenEdge Management in the workplace on page 207

  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 on page 208

  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 on page 213

  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** optionfor 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 the following table. 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

Access and review . . .	As these topics relate to these questions . . .
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?

Access and review . . .	As these topics relate to these questions . . .
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 Initial investigation on page 208, 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

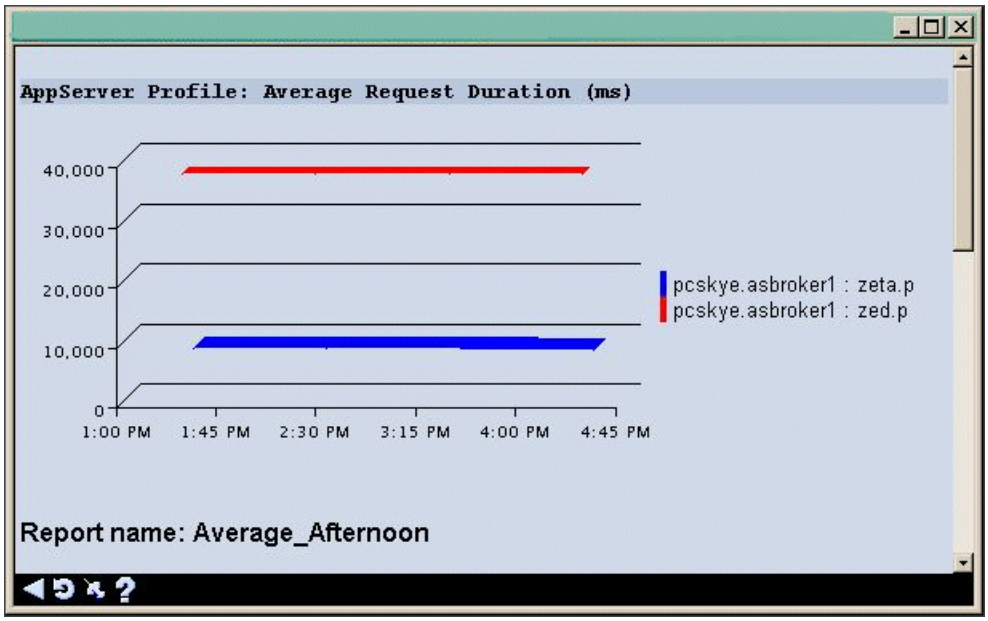
In this instance, the administrator has customized his AppServer Profile report. As shown in the graphical data in Figure 48: AppServer Profile Report for Average_Afternoon data on page 210, this AppServer Profile report presents information about the average time it takes for two different procedures 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.

The following figure shows typical AppServer workload-related data that is consistent with an average weekday afternoon at the XYZ Corporation.

Figure 48: AppServer Profile Report for Average_Afternoon data



Note: In the figures presented in this section, the colors in the graphs are intended only to distinguish one procedure from the other.

The AppServer Profile report that appears in the above figure 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.

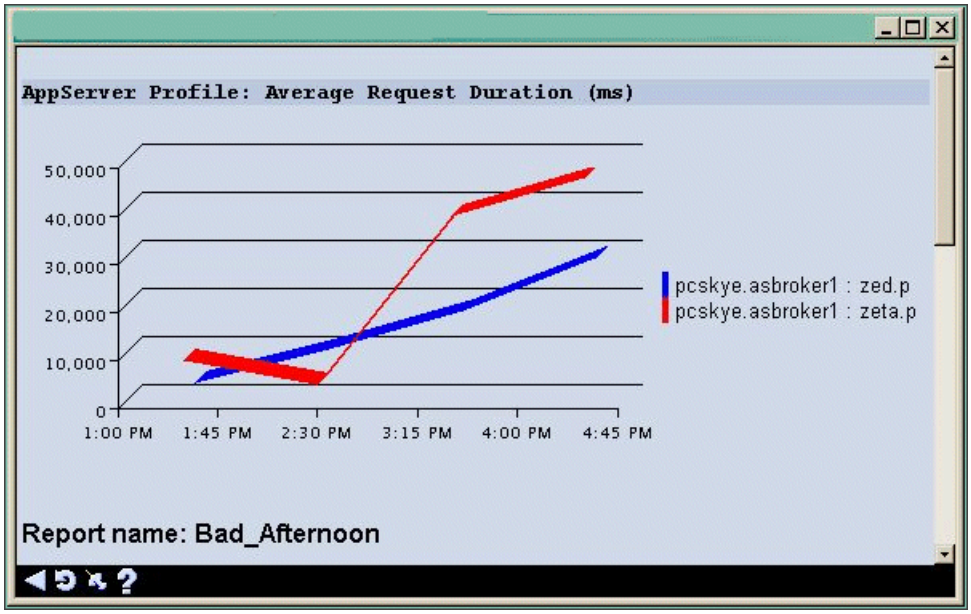
  By selecting the Average Procedure Duration High rule on the AppServer's monitoring plan and identifying a polling interval threshold for it, the administrator can monitor the AppServer's performance and behavior based on values that are significant to his performance expectations. For details about monitoring plans, see Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters on page 171.

- 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 50: AppServer Profile Report for Crisis_Report data on page 212. 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 49: AppServer Profile Report for Bad_Afternoon data



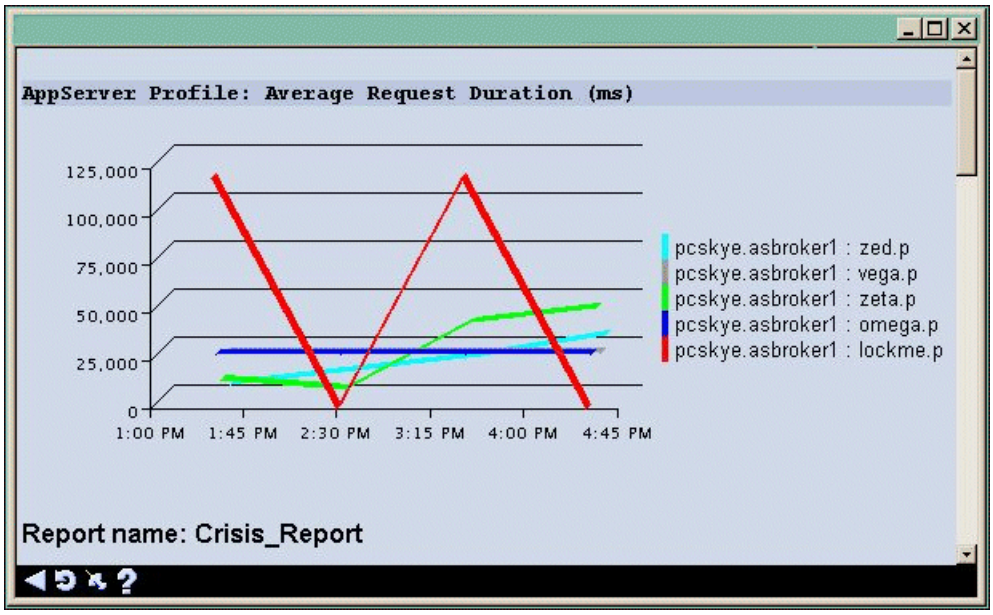
The same type of average request duration data that appears in the above figure tells a very different story about another workday afternoon at XYZ Corporation. By comparing the generated data in Figure 49: AppServer Profile Report for Bad_Afternoon data on page 211 with the generated data for the same procedures and associated brokers in the above figure, 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 48: AppServer Profile Report for Average_Afternoon data on page 210 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 48: AppServer Profile Report for Average_Afternoon data on page 210 and Figure 49: AppServer Profile Report for Bad_Afternoon data on page 211 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

The following figure shows the type of data the system administrator faces without diligence in routine review and investigation of OpenEdge Management report data.

Figure 50: AppServer Profile Report for Crisis_Report data



Assuming the same 40,000 threshold for all of the procedures listed in the above figure, 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 OpenEdge Management at XYZ Corporation on page 207 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.

The following table 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 checklis

Access and review . . .	To . . .
Alert and other data indicators that have been set up to monitor and display data on the collections page	Quickly examine issues that might be the reason for this dramatic change in performance. As previously noted in OpenEdge Management at XYZ Corporation on page 207, the administrator has several indicators set up, including viewlets related to the AppServer brokers.
Data details in log files such as the database log files, AppServer log files, customized log files and so forth	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.
Network- and server-related data details, using TCP resource monitors previously set up	Determine the status and response time, if any, for mail, FTP, and Web Servers that might be running on the network.

Access and review . . .	To . . .
Network-related data details, using Packet Internet Grouper (PING) (ICMP) resource monitors previously set up	Determine if network resources are available.
Server-related data details	Determine if AppServer server details and/or AppServer broker details are of help in problem determination.

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 Initial investigation on page 213 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 Managing AppServer Data on page 71.

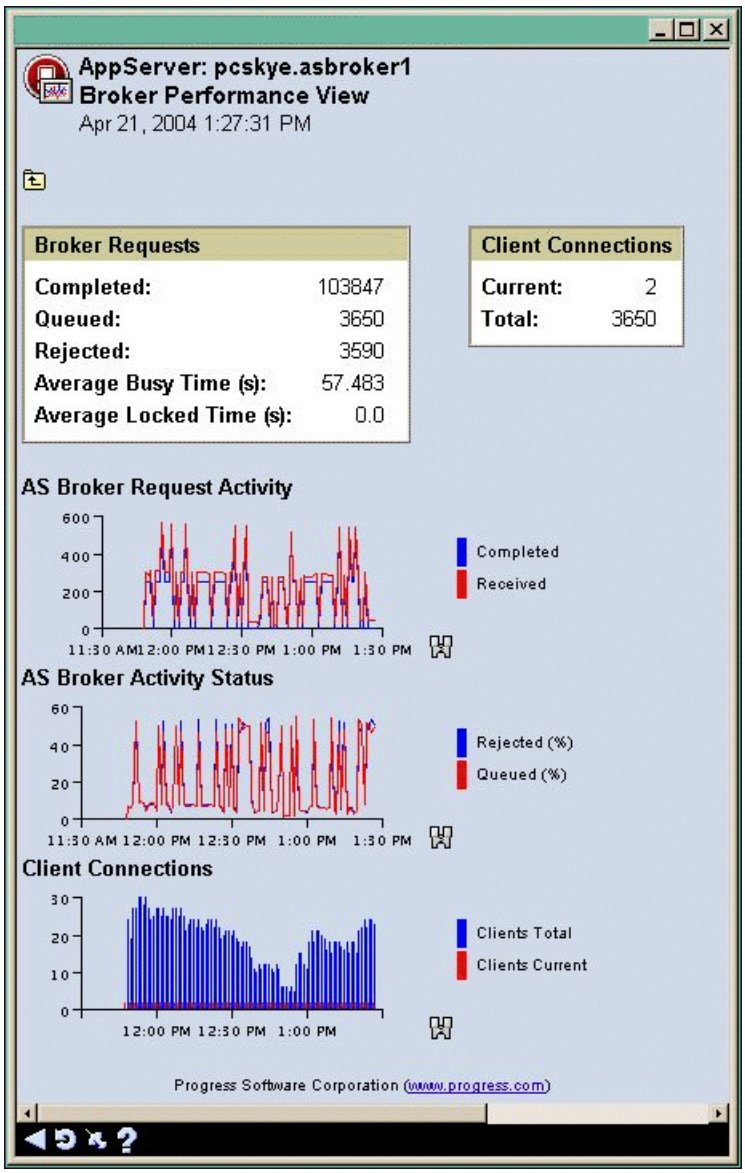
Scanning alert detail on the collection page and also on individual resources shown in the list frame, the administrator notices that there are no new alerts.

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**.

The following figure 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.

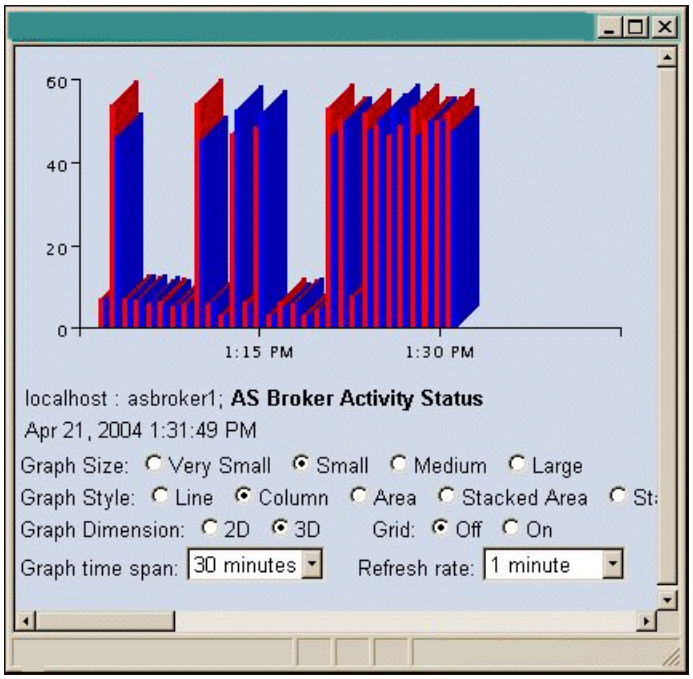
Figure 51: Broker Performance View for asbroker1



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 **the following figure**.

Figure 52: AS Broker Activity Status for asbroker1

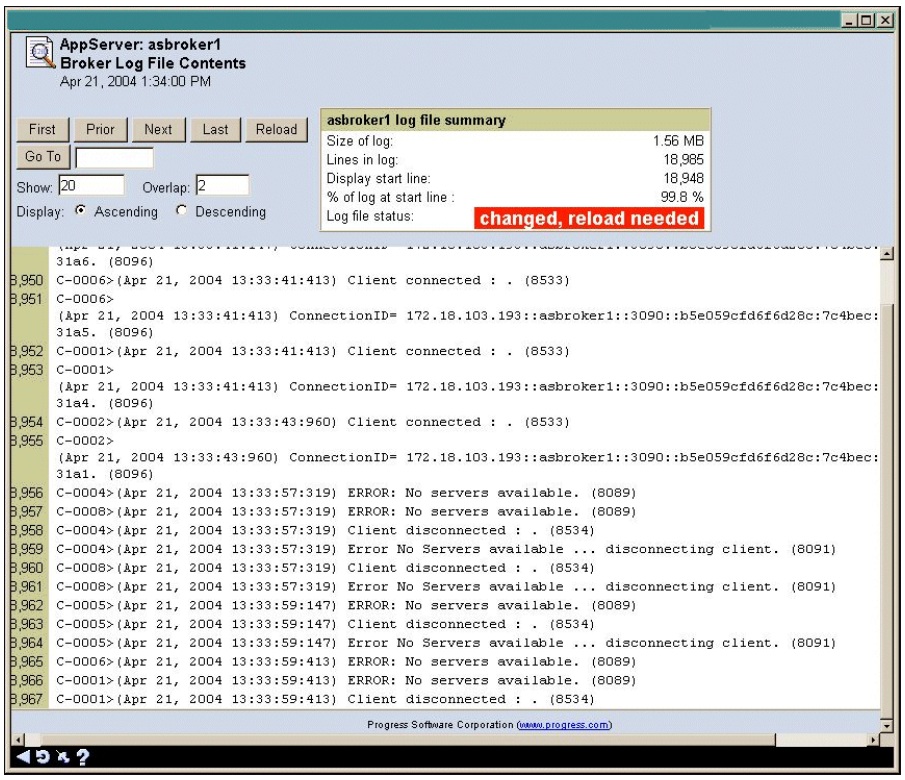


The pinup graph in the above figure focuses on a much smaller time frame for the data, and the data confirms the very poor performance noted on the main **Broker Performance View** page. In fact, the number of rejected requests really is as high as the number of queued requests. What happened at the 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 the following figure.

Note: For the information that the administrator references about accessing the AppServer log file, see Accessing and reviewing AppServer-related log file data on page 86

Figure 53: AppServer asbroker1 log file

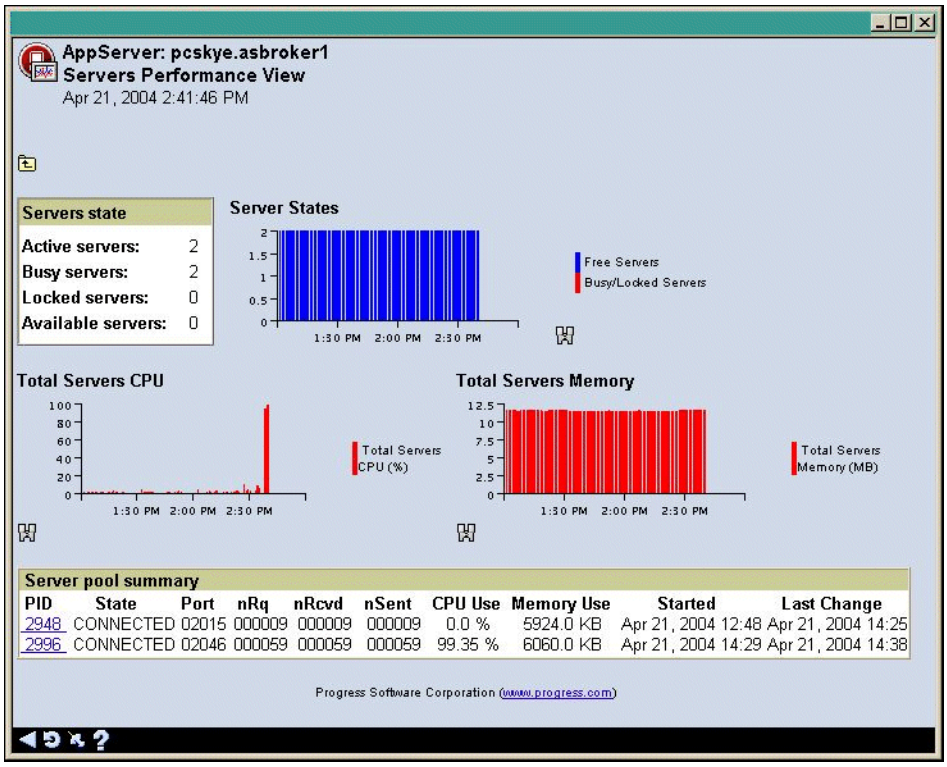


At approximately the same time that the number of rejected requests was starting to approach the total number of queued requests, as shown in Figure 51: Broker Performance View for asbroker1 on page 215, the error log reports that the servers are not available and that connected clients are being disconnected.

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.

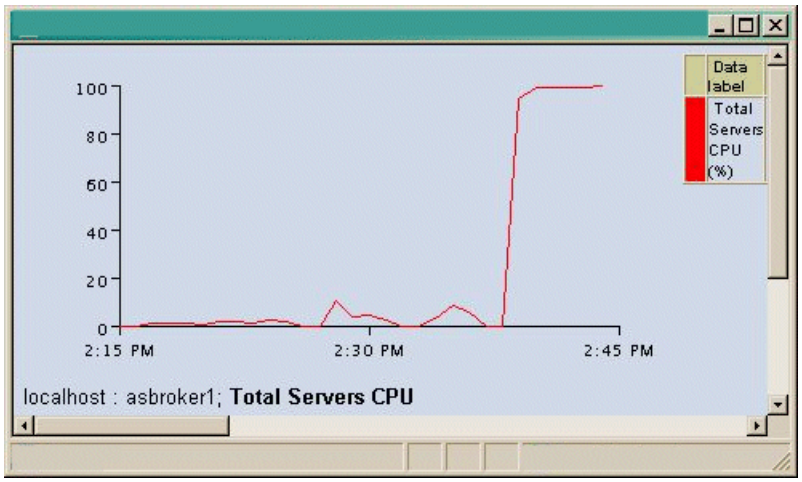
The following figure shows the suspicious data in the **CPU Use** column, indicating that no CPU consumption is occurring for the servers.

Figure 54: Servers Performance View page for asbroker1



Again, by clicking the binocular icon, the administrator can display this data in a pinup, as shown in the following figure.

Figure 55: Total Servers CPU for asbroker1



By clicking on **PID 2996** as shown in, 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
```

13

Managing OE Web Server Data

This chapter presents OpenEdge Management features and functionality related to the OE Web Server.

For details, see the following topics:

- 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 Role authorization and OpenEdge Management tasks on page 27 for details.

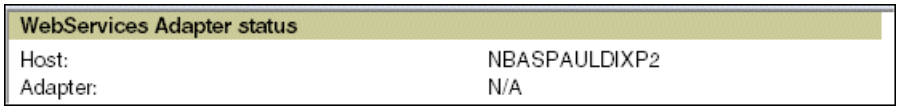
Configuring OE Web Server properties

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. The following image shows the **Status** section.

Figure 56: OE Web Server Status section



The following table 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

Field	Description
Container	The container's name.
Host	The host machine's name.
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 Web applications cannot be configured.
URL	URL of where oerm has been deployed. For example, http://localhost:8080/oerm

Modifying OE Web Server control settings

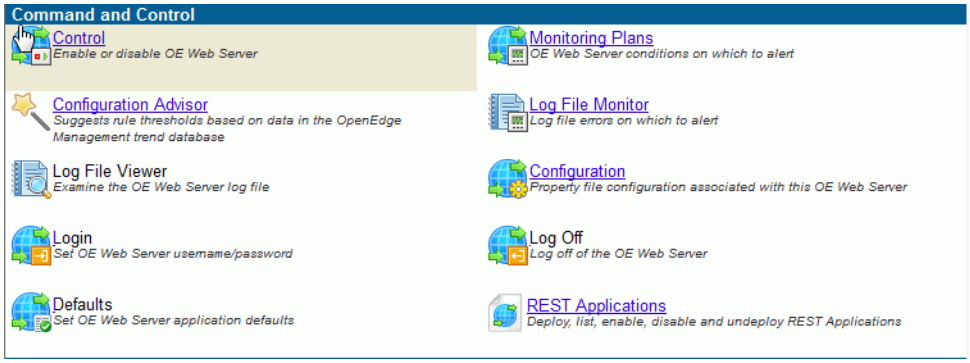
The **Command and control** section of the **OE Web Server Details** page for an adapter instance allows you to perform various tasks, such as:

- 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 Web Applications
- Log into or log off from the OE Web Server
- Configure the OE Web Server's properties

The following figure shows the **Command and control** section of the **OE Web Server Details** page.

Figure 57: Command and control section



The following table 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

For details about . . .	See . . .
Log file monitors and viewers	Accessing and reviewing OE Web Server log file data on page 224
Log file monitoring plans and rules	Customizing an OE Web Server log file monitor on page 226
Log file monitor rule sets	Monitoring Plans and Rules for Servers, DataServers, Messengers, and Adapters on page 171
Configuration, deployment, and general administration	*OpenEdge Management and OpenEdge Explorer: Configuration*

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.OE Web Server

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 Customizing an OE Web Server log file monitor on page 226 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 Customizing an OE Web Server log file monitor on page 226.

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 and OpenEdge Explorer: Configuration*.

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:

1. From the Resources drop-down on the management console menu, click **Resource Monitoring Defaults**. The **Resource Monitor Defaults** page appears.
2. Click AppServer OE Web Server Resource Defaults. The **OE Web Server Resource Defaults** page appears.
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 beside **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 Customizing an OE Web Server log file monitor on page 226 for details.

Customizing an OE Web Server log file monitor

This section describes how to customize an OE Web Server log file monitor.

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 Accessing OpenEdge Management resource information on page 35.
2. Click **Log File Monitor** on the **OE Web Server** Detailspage. The **Log File Monitor** summary page appears.
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 **CreateLog 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 on page 227 through Step 9 on page 227.
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.

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

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 Accessing OpenEdge Management resource information on page 35 section 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 Accessing OpenEdge Management resource information on page 35 section 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* .

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