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Preface

This Preface contains the following sections:

- **Purpose**
- **Audience**
- **Organization**
- **Using this manual**
- **Typographical conventions**
- **Examples of syntax descriptions**
- **OpenEdge messages**
Preface

**Purpose**

This combination guide and reference provides information to assist you in understanding and working with the OpenEdge® Management alert feature.

**Audience**

This manual is designed for database administrators and end users of OpenEdge Management. This includes IT managers, ASP hosting companies, and others who are responsible for the day-to-day monitoring and management of resources.

**Organization**

Chapter 1, “Introduction”

Introduces the alert feature, defines the alert types that can be generated, and identifies where you can find additional information about alerts in the OpenEdge Management documentation set.

Chapter 2, “Alerts Setup and Maintenance”

Provides detailed information about setting up, maintaining, and displaying alerts.

Chapter 3, “Alerts Reference”

Presents a comprehensive list of the OpenEdge-generated alerts and their associated polled or asynchronous property definitions.

Chapter A, “Third Party Acknowledgements”

**Using this manual**

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

For the latest documentation updates, see the OpenEdge Product Documentation category on PSDN (http://communities.progress.com/pcom/docs/DOC-16074).
References to ABL compiler and run-time features

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

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

References to ABL data types

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

- Like most other keywords, references to specific built-in data types appear in all uppercase, using a font that is appropriate to the context. No uppercase reference ever includes or implies any data type other than itself.
- Wherever integer appears, this is a reference to the INTEGER or INT64 data type.
- Wherever character appears, this is a reference to the CHARACTER, LONGCHAR, or CLOB data type.
- Wherever decimal appears, this is a reference to the DECIMAL data type.
- Wherever numeric appears, this is a reference to the INTEGER, INT64, or DECIMAL data type.

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

This manual uses the following typographical conventions:

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

### Syntax:

| **Fixed width**                 | A fixed-width font is used in syntax statements, code examples, system output, and filenames.                                                                                                               |
| **Fixed-width italics**         | Fixed-width italics indicate variables in syntax statements.                                                                                                                                               |
| **Fixed-width bold**            | Fixed-width bold indicates variables with special emphasis.                                                                                                                                               |
| **UPPERCASE fixed width**       | Uppercase words are ABL keywords. Although these are always shown in uppercase, you can type them in either uppercase or lowercase in a procedure.                                                            |

This icon (three arrows) introduces a multi-step procedure.

This icon (one arrow) introduces a single-step procedure.

| **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.                                                          |
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.
Introduction

This chapter introduces OpenEdge® Management alert features and identifies where you can find additional information about alerts in the documentation set.

Information is outlined in the following sections:

- Alert definition
- How OpenEdge Management alerts relate to rules and actions
- Alert types
- For additional alert information
Alert definition

An alert is a notification that an event involving an OpenEdge Management resource has occurred. Alerts indicate that:

- A typical or routine event has occurred. For example, you can set up an alert to inform you that a database has started or stopped.

- A defined threshold has been met or exceeded. For example, you can set up an alert to be generated if the percentage of OpenEdge® AppServer client requests rejected during a polling interval exceeds the defined threshold. The alert identifies a performance issue you might want to address.

- A situation has occurred with an internal operation. In this situation, an alert automatically fires. You cannot set up internal alerts.

When you configure resource monitoring, you define rules to ensure that a resource performs according to criteria you set. These rules cause OpenEdge Management to generate alerts if a specific condition occurs. Use alerts to ensure that:

- You are automatically notified if a rule is broken; all alert details appear and are accessible through the management console.

- OpenEdge Management triggers optional, predefined corrective actions. You can customize and select actions, such as sending an e-mail to an employee, sending a voice message to a PDA (Personal Data Assistant), or initiating a job action or log file action in response to an event.

The prompt display of an alert and its associated details in the management console and the automatic and timely initiation of actions allow you to quickly recognize and correct resource-related violations.
How OpenEdge Management alerts relate to rules and actions

Alerts are triggered in response to rules that you associate with a resource or job. Each rule has its own unique alert and action definition. The content of this book focuses on alerts associated with resources. For details about setting up alerts for jobs and job instances, see the relevant section of OpenEdge Management: Resource Monitoring.

A cause and effect relationship

You can set up a simple, automated chain of events to ensure that you are notified of any resource rule violations. This sequence executes as follows:

1. Some condition causes a rule for an active resource to be violated.
2. The rule violation causes an alert to be triggered.
3. The alert causes a specific predefined action to occur.

Note: You define the action to be triggered by the alert. An alert can be triggered many times if a given condition exists, but the action that is associated with the alert will be run only when the alert is initially triggered. Once the alert is cleared, the alert and its related action can fire again.

Using monitoring plans to set up rules-related criteria

The values defined for each set of rule, alert, and action elements comprise an OpenEdge Management monitoring plan. A resource monitoring plan uses:

- A rule definition and its associated threshold values
- An action that is initiated when the rule is violated
- A schedule to identify when the rule is applied
- A polling interval that determines how often the rule is evaluated

Once a polling interval (that is, the time frequency with which a resource is monitored) is set, OpenEdge Management recognizes the values you define for the monitoring plan attributes and executes them.

See the “Example: Reviewing polled alert fields” section on page 21 and the “Example: Reviewing asynchronous alert fields” section on page 23 for detailed information about setting up and maintaining alert-related details on monitoring plans.
Alert types

There are three types of alerts:

- Polled
- Asynchronous
- Internal

A rule’s definition determines what type of alert is associated with the rule.

Polled alerts

A polled alert is generated when the scheduled evaluation of a monitored resource detects an error or other condition in the resource. Polled alerts generally require threshold values to be defined so that a resource’s performance can be tracked in response to these parameters. For example, threshold values can include defining criteria such as a performance level that is lower or higher than a given number, or identifying the age of a file being older than a particular time (that is, minutes, hours, days, and so forth). Threshold values give you the flexibility to refine rule conditions based on the particular performance values you choose for a resource.

Factors associated with assessing threshold values

OpenEdge Management can trigger an alert when a monitored resource performs outside the currently defined value for a threshold rule. However, the defined polling interval could be set such that \( x \) number of polling cycles (as defined in the Throw alert after polled field in the Rule definition section of a monitoring plan) must be complete before the alert is triggered.

For example, a CPU resource can be polled hourly to see if the CPU usage exceeds 90%. If the percentage does exceed 90%, an alert is generated. However, the alert will not trigger until the number of polling cycles as defined in the Throw alert after polled field is also exceeded.

Alerts that gather data through this polling process allow you to assess data polled over time to determine if your thresholds are too high or too low. You can adjust these threshold values, and the frequency with which the polling cycles are set to occur, at any time to refine your data collection.

The interpretation of a threshold value can vary from resource type to resource type. Differences in these interpretations can also affect what an alert display means for these various resource types. For an explanation of these resource-specific calculations, see the appropriate resource-specific rule details in the system, network, or file resource rule calculations in OpenEdge Management: Resource Monitoring. For details about database rule details, see OpenEdge Management: Database Management. For details about OpenEdge Management rules related to the OpenEdge server products, see OpenEdge Management: Servers, DataServers, Messengers, and Adapters.
Example: Reviewing polled alert fields

Figure 1 shows the Create Monitoring Plan page for a disk resource in OpenEdge Management. The Rule definition section contains the Alert if disk activity exceeds field, which is an example of a rule for which a polled alert is generated. The value defined for this threshold, along with the values defined for the associated action and alert fields in this same section, enable the triggering of a polled alert.

![Figure 1: Sample polled alert-related data](image)

The Monitoring plan definition section contains the Polling Interval field. Based on the value you define for this field, the resource is checked (polled) according to the time interval specified. The default value of 900 seconds as shown in Figure 1 establishes that this disk resource must be checked every 15 minutes and a count kept of the number of passed or failed polls. This count is used to assess the alert properties values defined in the Rule definition to determine when to throw or clear an alert. Note that the Alerts Enabled field is selected in Figure 1. Alerts fire when the resource is active and a rule is violated.

The Rule definition section shows the fields related to rules, alerts, and actions for a disk resource monitor. Note that the rule definition is actually a combination of the threshold value and the specific values related to actions and alerts that identify the activities performed if this threshold is exceeded.
As shown in the Rules definition section in Figure 1, polled alerts require you to either accept default values or set values in a combination of fields to establish the following criteria:

- The specific rule’s threshold which, when violated, causes an alert to trigger. In Figure 1, the rule threshold is set at 90.0% in the Alert if disk activity exceeds field.

- The severity of the alert as defined in the Alert severity field: Informational, Warning, Error, or Severe. In Figure 1, the severity chosen is Error.

- The number of polls in which the condition must occur before an alert is generated. In Figure 1, the Throw alert after field indicates that the alert will be generated after one failed poll.

- When to throw additional alerts: after a clear, or after a certain number of failures.

- The action, if one is specified, to perform in OpenEdge Management when the alert is generated.

- The number of polls in which the condition must occur without the detection of any rule violations before the alert is automatically cleared. In Figure 1, the value of 0 in the Clear alert after field indicates that the alert will not be automatically cleared. (If you choose not to clear an alert automatically, you must clear it manually.) See the “Clearing alerts through the management console” section on page 46 for more details about manually clearing alerts.

- The action, if one is specified, to perform in OpenEdge Management when the alert is cleared.

For more detailed information about defining alerts, see the “Configuring rules for individual resources” section on page 29.

### Asynchronous alerts

An asynchronous alert is generated by a resource the moment a specific condition is detected, regardless of the polling interval set for that resource. Many asynchronous alerts identify violations related to mission-critical and time-sensitive activities. Others, such as AS_BrokerNormalShutdown or DB_AgentStartup, function as confirmations of normal, or expected, operational status.

Some common mission-critical conditions for which you can define an asynchronous alert include:

- Database abnormal shutdown
- OpenEdge Management Trend Database Unavailable
- AppServer added

Other events for which you can define asynchronous alerts are more time-dependent. For example, if a running job has not completed in a specified period of time, you can be notified by an asynchronous alert. This situation could indicate that there is either a runaway or a hung job. In these types of instances, the firing of an asynchronous alert would inform you immediately of the situation so that you could take appropriate action.
Example: Reviewing asynchronous alert fields

Figure 2 shows a sample rule definition section of a resource monitoring plan. This sample shows both the alert severity and the action currently associated with a database agent abnormal shutdown condition.

![Rule: Agent Abnormal Shutdown](image)

**Figure 2**: Sample asynchronous alert-related data

All asynchronous rules also have an *Always throw new alert* field. If you retain the default check mark for this option, a new asynchronous alert of this type fires each time this rule is violated. Given the sample data shown in Figure 2, a unique alert will fire each time a database agent shuts down in an abnormal manner.

You can review each of these alert instances on the Alert Detail Summary page. If you clear the value in the *Always throw new alert* field, the alert fires once, so that an alert message does not display in the user interface each time the alert is triggered. However, even if you suppress this alert display, the Occurrence count field value increases on the Alert Detail Summary page on a subsequent occurrence.

Internal alerts

OpenEdge Management internal alerts automatically inform you of events that occur internally to OpenEdge Management and for which you cannot set up specific alert definitions. For example, there is no option to define a rule, associated alert, and action for an internal event such as a CPU resource being unable to trend data to the OpenEdge Management Trend Database. In this instance, OpenEdge Management automatically triggers an alert.

Although OpenEdge Management automatically generates alerts for internal events, the alerts associated with internal situations appear on the management console and are processed in a manner similar to polled and asynchronous alerts. For more information about reviewing and processing alert data, see Chapter 2, “Alerts Setup and Maintenance” and the internal alert details in the “OpenEdge Management internal alerts” section on page 64.
For additional alert information

Table 1 identifies where you can find additional information about alerts and alert-related topics.

Table 1: Accessing more information about alerts

<table>
<thead>
<tr>
<th>For details about . . .</th>
<th>See . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting up, maintaining, and displaying alerts</td>
<td>Chapter 2, “Alerts Setup and Maintenance,” in this guide</td>
</tr>
<tr>
<td>Each generated alert and its associated polled or asynchronous property definition</td>
<td>Chapter 3, “Alerts Reference,” in this guide</td>
</tr>
<tr>
<td>All the basic elements of resource monitoring</td>
<td>OpenEdge Management: Resource Monitoring</td>
</tr>
<tr>
<td>Trending alert data to the OpenEdge Management Trend Database according to a database’s schema definition</td>
<td>OpenEdge Management: Trend Database Guide and Reference</td>
</tr>
<tr>
<td>Creating and running OpenEdge Management-based reports that contain alert data</td>
<td>OpenEdge Management: Reporting</td>
</tr>
</tbody>
</table>
Alerts Setup and Maintenance

A key benefit of OpenEdge Management is the ability to generate alerts for certain conditions that occur on actively monitored resources. Within OpenEdge Management, you can then establish actions that occur in response to the triggering of an alert.

This chapter contains these sections:

- Reviewing initial monitoring plan settings
- Configuring rules for individual resources
- Viewing alert information
- Clearing alerts through the management console
- Disabling alerts
- Accessing alert information from the command line
- OpenEdge Management internal alerts
Chapter 2: Alerts Setup and Maintenance

Reviewing initial monitoring plan settings

OpenEdge Management provides default options and values for various monitoring plan settings at the global, resource type, and individual resource monitor levels. You can change or override these options and values at any time. This section briefly reviews these initial monitoring plan settings, focusing specifically on the alert-specific options and default capabilities.

Figure 3 illustrates the alert default hierarchy and related options. See the “Understanding alert options and default values” section on page 27 for details about these options.

<table>
<thead>
<tr>
<th>OpenEdge Resource Monitoring Configuration Page and OpenEdge General Configuration Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>These pages are accessible from Option → Configuration, and they support</td>
</tr>
<tr>
<td>· Turning polling on or off for all resources</td>
</tr>
<tr>
<td>· Turning alerts on or off for all resources</td>
</tr>
<tr>
<td>· Setting a default action to be run in response to all internal alerts</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resource Monitor Defaults Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Resource Monitor Defaults page for each resource type—database, file, network, OpenEdge, and system—has default values that include</td>
</tr>
<tr>
<td>· Default polling attributes appropriate to each resource type</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resource Monitoring Plan Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Rule Definition section for monitoring plans supports</td>
</tr>
<tr>
<td>· Overriding or accepting default values that can be associated with an individual rule, alert, and polling interval</td>
</tr>
</tbody>
</table>

Figure 3: Alerts default and override hierarchy
Understanding alert options and default values

Figure 3 highlights some of the default values and the override hierarchy available when you set up resource monitoring plans. The primary purpose of the diagram is to focus on the alert-related options available at the global, resource type, and individual resource monitor levels.

General and Resource Monitoring options

The top block in Figure 3 identifies the options and defaults you can set globally on the OpenEdge Management General Configuration page and the OpenEdge Management Resource Monitoring Configuration page. You access these pages by choosing Options → Configuration.

Establishing alert-related options at this level can help to promote consistency within your alert data through the use of default values. However, you can override these default global settings at the resource type or individual resource monitor levels.

After you have defined your initial configuration settings, you can refine particular global settings by:

- Changing the alert-related selections.
- Turning global settings on or off. For example, you can elect to suspend OpenEdge Management’s alerts generation feature, or enable or disable resource polling for all active resource monitors.

Resource Monitor Defaults pages

The middle block in Figure 3 focuses on alert-related options available on the Resource Monitor Defaults pages. Among the various defaults values that you can set from each resource-specific default page, you can display and change default polling attributes associated with each resource type.

A polling interval determines how often a rule is evaluated. Therefore, you can determine a uniform polling interval that OpenEdge Management uses as a part of the criteria for determining when a rule violation will cause an alert to be triggered.

Resource type default values can also be overridden at the individual resource monitor level.

Resource Monitoring Plan pages

The bottom block in Figure 3 identifies the lowest level in this hierarchy. This individual resource monitor level inherits values set at the higher global or resource type levels.

When you override values on a Resource Monitoring Plan page for an individual resource monitor, your changes affect only the specific resource monitor.
For additional reference information

Table 2 identifies where you can find additional details about monitoring plans and alerts.

**Table 2: Additional monitoring plan and alerts information**

<table>
<thead>
<tr>
<th>For details about . . .</th>
<th>See . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selecting an action to be applied to all internal alerts</td>
<td>The “OpenEdge Management internal alerts” section on page 64</td>
</tr>
<tr>
<td>Accessing and changing values associated with resource monitor types</td>
<td>The appropriate sections in <em>OpenEdge Management: Resource Monitoring</em></td>
</tr>
<tr>
<td>Accepting or overriding values at the individual resource level</td>
<td>The &quot;Configuring rules for individual resources” section on page 29</td>
</tr>
</tbody>
</table>
Configuring rules for individual resources

This section describes the steps involved in configuring a rule in OpenEdge Management, including:

- Setting threshold values
- Setting properties, including a severity level, for generated alerts
- Defining actions for alerts

As described in the “Reviewing initial monitoring plan settings” section on page 26, default polling attributes automatically appear at the individual resource level. You can change or override them to address your needs. The following sections explain what each of these activities involves.

Setting threshold values

Threshold values identify the rule component criteria of the polling attributes associated with a resource. These values typically identify the highest or lowest acceptable resource performance-related value for a specific resource. The type of threshold value varies according to the resource type. The OpenEdge Management System resource type threshold values are often characterized by the highest or lowest value definitions. The OpenEdge Management Network resource type threshold values relate to values defined for response times being greater than a specified value, or no response within a defined period of time.

During the monitoring process, when OpenEdge Management finds a value that is outside the defined threshold value, the rule is considered violated. This rule violation causes the alert to be generated and the action to trigger. See the “How OpenEdge Management alerts relate to rules and actions” section on page 19 for more information.

Knowing how threshold values are interpreted can help you to interpret more accurately the context of a specific alert. For an explanation of these resource-specific calculations, see the appropriate resource-specific rule details in the system, network, or file resource rule calculations in OpenEdge Management: Resource Monitoring. For information about database rule details, see OpenEdge Management: Database Management. For details about OpenEdge server-related rules, see OpenEdge Management: Servers, DataServers, Messengers, and Adapters.

You can use threshold values supplied through these means:

- Default values
- Values you type directly into the threshold fields in the Rule definition section
- Values determined by the Configuration Advisor (AppServer, database, WebSpeed® Transaction Server, CPU, disk, and FileSystem in OpenEdge Management only)
Configuration Advisor

The OpenEdge Management Configuration Advisor collects data about typical operating activities for specific resource rules for a time period that you set. Based on an analysis of this data, the Configuration Advisor suggests a range of threshold values from which you can select and then apply to a rule.

The Configuration Advisor works with these specific resource types: AppServer, database, WebSpeed Transaction Server, CPU, disk, and FileSystem.

See OpenEdge Management: Database Management for details about how the Configuration Advisor determines database resource-related recommended rule threshold settings. See OpenEdge Management: Servers, DataServers, Messengers, and Adapters for details about how the Configuration Advisor calculates WebSpeed Transaction Server broker- and AppServer broker-related recommended rule threshold settings. See OpenEdge Management: Resource Monitoring for details about how the Configuration Advisor can be used to suggest rule thresholds for CPU, disk, and file system resources based on data in the OpenEdge Management Trend Database.

Setting properties for generated alerts

The alert-related properties are:

- **Alert severity**
- **Throw alert after**
- **Clear alert after**

The Alert severity property is set for all polled and asynchronous alerts. The Throw alert after property and the Clear alert after property provide a mechanism to reduce unnecessary noise in your polled alerts.

Assigning an alert’s severity

You can assign one of four severity levels to an alert. This allows you to choose which alerts are assigned highest priority based on the specific needs of your organization. The four levels of severity, in increasing severity, are:

- **Information**
- **Warning**
- **Error**
- **Severe**
To assign a severity to an alert, choose the desired severity from the **Alert severity** drop-down menu located in the **Rule definition** section of a monitoring plan page. **Figure 4** shows the **Alert severity** field with the four severity levels displayed.

![Figure 4: Alert severity field and its four severity level options](image)

**Specifying when to throw an alert**

*Noise* is the normal variability that can occur while a resource is being monitored. For example, a CPU might run at 75% utilization with infrequent spikes of 100% utilization. The infrequent spikes are noise. You probably do not need to be alerted to those spikes because they do not reflect the true overall performance of the CPU. To avoid unnecessary alerts like these, you can set the **Throw alert after** and **Clear alert after** properties appropriately.

For example, you determine how many times a condition must occur before an alert is generated. Setting a low number, such as 1, means you are more susceptible to noise. Setting this value to a higher number, such as 3, reduces the likelihood of noise alerts, but also means an event must occur three times in a row before an alert is generated. The higher the setting of the **Throw alert after** property, the longer it takes to generate an alert. For example, with a **Throw alert after** property set to 3, three sample periods occur before the alert is generated.
Alert properties

Alert properties are located on the Rule definition section of a resource’s Monitoring Plan page. Review and update the values associated with these alert properties as you edit monitoring plans for a resource.

The following procedure reviews the steps to edit a monitoring plan, noting the location and use of the alert properties.

To edit a resource monitoring plan:

1. In the Resources list, scroll down to or search for the resource type using a keyword or tag name in the search field.
2. Click the Edit icon to navigate to the details page of the resource, whose monitoring plan you want to edit.
3. Click Monitoring Plans in the Command and Control section to access monitoring plans for OpenEdge resources. Monitoring Plans appear directly on the resource details page for File, System, and Network resources.
4. Click a schedule assigned to the monitoring plan. If you have not added any plans, click Default_Schedule_Plan. The Schedule Monitoring Plan page appears.
5. Click Edit. The Edit Schedule Monitoring Plan page appears.

The following table guides you in reviewing and updating values associated with the alert properties:

<table>
<thead>
<tr>
<th>To change this alert property . . .</th>
<th>Perform this action . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alert Severity</td>
<td>Select the dropdown list option to display the four severity options: Information, Warning, Error, and Severe.</td>
</tr>
<tr>
<td>Throw alert after</td>
<td>Type the number of failed polls after which an alert should fire. (For most resources, the default value is 1. However, the default value for network resource monitors is 2.) To minimize noise, consider setting this property to a low number for critical resources and to a higher number for less critical resources. Note: This property is not applicable to all resource monitors and does not appear on every resource property page.</td>
</tr>
<tr>
<td>Throw additional alerts</td>
<td>Choose when OpenEdge Management will throw additional alerts. Possible values are after a clear or after a specific number of failures.</td>
</tr>
<tr>
<td>On alert perform action</td>
<td>Select the action that OpenEdge Management will take when an alert is generated. The default is Default Action.</td>
</tr>
</tbody>
</table>
Configuring rules for individual resources

To change this alert property . . . | Perform this action . . .
--- | ---
Clear alert after | Enter one of the following possible values to indicate when you want an alert to be cleared once the condition that prompted the alert has been resolved:
- 0 — The alert is not cleared automatically. You must manually clear all alerts.
- 1 — The alert is automatically cleared the first time the resource successfully passes a poll.
You can alternatively type a value greater than 1 to indicate that the alert will not be cleared until the resources passes this specified number of consecutive polls. This can prevent anti-noise from clearing an alert prematurely.

On clear perform action | Select a user-defined action or a compound action. For example, OpenEdge Management might run a job that was defined as an action. The default is None.

6. Click **Save**. Any changes made to the alert properties appear on the updated **Resource Monitoring plan** page for the Memory resource.

**Defining actions for alerts**

You can associate actions with each alert. Possible actions include:

- **Default Action** — Define a default action.
  
  You can modify the default action, or you can create a new action by copying and editing the existing default action.

- **Email Action** — Within the email action are options to do the following:
  - **Default Clear** — Clear the action.
  - **Default Mail** — Send an e-mail notification. This action can be used to send e-mail to one or more operators.
  - **Default Pager** — Send a message to electronic devices that support a text message display, such as a computer, a PDA, a pager, or a cell phone.
  - **Default Task Action** — The running of a defined job. You can use this action to perform a recovery procedure that remedies the alert condition.

For example, you can configure an e-mail action to send a message to the operator responsible for the resource on which an error occurred. You can also configure an alert to send e-mail to the responsible operator and execute a particular command at the same time. For detailed steps on creating actions and associating alerts with them, see the appropriate sections in **OpenEdge Management: Resource Monitoring**.
Viewing alert information

Details related to all outstanding alerts regardless of their type—polled, asynchronous, or internal—are visible through the OpenEdge Management console. You can review alert data through various access points, such as:

- Reviewing alert totals information displayed next to the **Alerts** category on the main menu bar
- Selecting **Alerts** on the main menu bar to display alert information in the list frame
- Selecting **Alerts** on the main menu bar to display alert information in the detail frame
- Reviewing summary alert information that can be displayed on views defined for collections pages
- Reviewing alerts associated with a specific resource in the **Alerts** section of the **Resources** view.
- Reviewing alerts specific to a resource by selecting the resource’s Details page
- Reviewing alerts associated with a particular resource on the resource’s monitoring summary page
- Reviewing alert details that can be sent by e-mails to electronic mail boxes, PDAs, or other types of electronic devices that support text message displays
- Generating and reviewing alert data using the OpenEdge Management reporting feature
- Reviewing alert-related data in the AdminServer log file
- Reviewing data stored in the OpenEdge Management Trend Database

Viewing alerts

Click either **Alerts** or **Resources** from among the console’s menu bar categories to display specific resource alert details in the list and the grid frame. Note that regardless of which of these two options you use, alerts appear in association with a specific resource as identified by the resource naming convention, *container name:resource name*.

Selecting the Alerts category

**Figure 5** shows a sample of the contents you might see in an OpenEdge Management list frame when you click **Alerts** on the menu bar. Icons related to an alert’s severity level appear to the left of each resource name and a brief alert message appears to the right.
Figure 5: Outstanding alerts displayed in the Alerts list frame

The list frame supports ToolTips. ToolTips display summarized details about an alert. (Each alert’s complete contents can be displayed on the Alert details Summary page by clicking the resource name in the list frame). When you place your cursor over an alert icon displayed in the Alerts list frame, summarized alert message details appear after a few moments. Figure 6 shows the contents of an alert icon in the Alerts view of the list frame.

Figure 6: ToolTip details displayed on the Alerts list frame

The first alert in the list frame also simultaneously displays its alert detailed information in the detail frame. See the “In the details frame” section on page 37 for more information.

You can sort alerts by Resource Name, Alert Name, Last Date, or Severity. Use the drop-down menu in the Sort by field to change the sort criteria.
Chapter 2: Alerts Setup and Maintenance

Selecting the Resources category

Figure 7 shows the Alerts column when you click Resources on the menu bar. Icons related to an alert’s severity level appear on this column along with the number of Open alerts and the number of Unseen alerts on a resource.

The figure also shows the Alerts section of the Resource view when you click a resource. This section displays the type of open alerts on the selected resource. Placing your cursor over the alert type in the Alerts section displays a ToolTip information that contains the reason for generation of that alert.

Figure 7: ToolTip details displayed on the Resources list frame

If you stop and restart OpenEdge Management, the outstanding alerts list clears. This same alert information cannot be reloaded. However, if the conditions that originally triggered the alerts still exist when OpenEdge Management restarts, new alerts are generated.

Note: Resource changes can happen very quickly, and the information contained in the Alerts list and the Alerts Detail Summary page represents the operational status of your system at the moment the information was collected. Click Refresh as you view alert details to ensure that you are reviewing the most current information.

For detailed information about each alert, see Chapter 3, "Alerts Reference."
In the details frame

Information about each outstanding, individual, open alert appears in the details frame in the Alert details Summary page, as shown in Figure 8.

![Alert details Summary page](image)

To display an Alert details Summary page, click the type of open alert in the Alerts section of the Resources view or the Resource's Details page.

The Alert details Summary page comprises:

- Navigational and task buttons
- Alert details for the individual alert
- General alert data for all outstanding alerts

The remaining information in this section describes each of these elements. For information about clearing an individual alert, see the “Clearing individual alerts” section on page 46.
Navigating the Alert details Summary page

Table 3 describes the buttons on the Alert details Summary page that allow you to navigate the alerts.

Table 3: Alert details Summary page buttons

<table>
<thead>
<tr>
<th>Click . . .</th>
<th>To . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous</td>
<td>Display the previous alert on the Alert details Summary page.</td>
</tr>
<tr>
<td>Next</td>
<td>Display the next alert on the Alert details Summary page.</td>
</tr>
<tr>
<td>Clear</td>
<td>Clear the current alert.</td>
</tr>
<tr>
<td>Mark Seen/Unseen</td>
<td>Mark the current alert as seen or unseen. Quick reference information about Unseen alerts displays as a total number next to the Alerts category on the menu bar. Seen and Unseen alert status also appears for individual alerts in the Resource list frame view when you use ToolTips. See the “Viewing alerts” section on page 34 and the “Selecting the Resources category” section on page 36 for more information.</td>
</tr>
<tr>
<td>Bulk Clear</td>
<td>Display a page from which you can clear all alerts that meet defined criteria.</td>
</tr>
<tr>
<td></td>
<td>See the “Clearing alerts in bulk” section on page 47 for details about the Bulk Clear process.</td>
</tr>
</tbody>
</table>
If you intend to clear an alert, you can optionally enter some relevant text about the alert in the space provided. The **Confirm clearing of alerts** option is selected by default. When you click **Clear** to remove an alert, you are automatically asked to confirm that you want to clear the alert. If you do not want to confirm clearing an alert, remove the check mark from the **Confirm clearing of alerts** check box. See the “Clearing alerts through the management console” section on page 46 for more information.

**General Alert Statistic and Legend**

The **Alert Statistics**, **Resource Statistics**, and **Legend** sections provide data relevant to all outstanding alerts. The following list briefly describes each of these sections:

- **Alert Statistics** — Displays a running tally of the number of open and unseen alerts. The **Last** field displays the date and time that the last alert occurred.

- **Resource Statistics** — Displays a running tally of the number of monitored resources across all containers, the total number of alerts currently registered, and the percentage of the alerts per total number of resources.

- **Legend** — Displays static reference details that identify the specific icon with its associated severity level. Depending on the page you are viewing, either the icon or its associated text is used to identify severity.

**Views defined for collection pages**

You can display outstanding alert details in views defined for a collections page in OpenEdge Management.

**Resources with alerts viewlet**

Collections allow you to define the contents of the **Resources with alerts** standard viewlet. The viewlet displays a list of resources in a collection that currently has one or more outstanding alerts. **Figure 9** shows an example of the OpenEdge Management **Resource with alerts** viewlet.

**Figure 9: Resource with alerts viewlet**

For each resource defined as a collection member in a specific collection view, this viewlet displays an alert icon to indicate the alert’s severity. (If multiple alerts exist for a single resource, the worst severity is shown.)

The **Customize Viewlet** icon appears in the upper-right corner of the viewlet. Click the icon to modify the criteria associated with this viewlet. For details about how to change this criteria, see the “Customizing alert details” section on page 41.
Collection members viewlet

Figure 10 shows an OpenEdge Management Collection members viewlet that is also a standard viewlet whose contents you can define.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>abcsrcdir1:CPU</td>
<td>Default CPU resource</td>
</tr>
<tr>
<td>abcsrcdir1:Disk-0:C</td>
<td>Default disk resource</td>
</tr>
<tr>
<td>abcsrcdir1:FileSystem</td>
<td>Default file system resource</td>
</tr>
<tr>
<td>abcsrcdir1:Memory</td>
<td>Default memory resource</td>
</tr>
</tbody>
</table>

Figure 10:  Collection members viewlet sample

For each resource defined as a collection member in a specific collection view, the viewlet can display an alert icon to indicate an alert exists and to identify the alert’s severity. (If multiple alerts exist for a single resource, the worst severity is shown.) To display more specific details about a resource, select the individual resource link and view the resource’s monitoring plan.

Alert severity legend viewlet

You can display the Alert severity legend on any OpenEdge Management collection view. This legend identifies the severity level identified by each alert icon.

Figure 11 shows a sample customized view of an OpenEdge Management My Collections page that includes standard viewlets for Resources with alerts, Collection members, and Alert severity.

Figure 11:  A customized view of the My Collections page

For more information about defining the content and layout of customized views, see the appropriate sections in OpenEdge Management: Resource Monitoring.
Customizing alert details

Collections support different options that allow you to tailor the alert details that appear on an OpenEdge Management collections page. From the options available on the Customize Viewlet page, you can modify what appears in the Resource with alerts viewlet that appears on a main collections page.

To customize alert and resource details on an OpenEdge Management collections page:

1. Click the Customize Viewlet icon that appears in the upper-right corner of the Resources with alerts standard viewlet. The Customize Viewlet page appears:

2. Select one of the following options in the Resources with alerts to show section:
   - **All resources in project** — Includes all resources in OpenEdge Management whether a resource is in a collection or not
   - **All resources in collection** — Limits resource inclusion to those resources defined for a specific collection
   - **All resources in collection and its descendants** — Identifies resources in a collection and resources defined in sub-collections associated with the collection

3. Select a maximum of three options in the Fields to display section. By default, all three options are selected. To deselect any option, click the checkmark.

4. Click Save.

   Any changes you make to Resources with alerts to show and Fields to display settings appear in the Resources with alerts viewlet the next time you view the collections page.
Chapter 2: Alerts Setup and Maintenance

The Resource Monitoring Summary page

Figure 12 shows an example of how alerts associated with an individual resource appear on the Resource Monitoring Summary page.

![Alert icon]

To view additional details about alerts noted in the Alerts box, do one of the following:

- Place your cursor over the alert icon. Momentarily, summarized alert information appears. This information is available through the ToolTips option.
- Click the individual alert link. Complete alert data appears on the Alert details Summary page.

E-mail notifications

If you elect to define an action for an alert, you can choose to send e-mail notifications to one or more recipients you set up during the initial OpenEdge Management configuration. The content of the e-mail message is similar to the data that appears on the Alert details Summary page.

OpenEdge Management supplies these default e-mail actions, each of which you can customize:

- Default_Clear_Action
- Default_Mail_Action
- Default_Pager_Action
- Default_Task_Action
To access the OpenEdge Management default e-mail actions:

1. Click **Library** from the menu bar.

2. In the **Sort by** option, select **Type** and click **Actions** in the list frame.

3. Click **Email Action** from the actions listed in the detail frame. The **Email Action** page appears in the detail frame:

![Library Actions](image)

The e-mail that the recipient receives in an electronic mail box, PDA, or other electronic device also contains links to OpenEdge Management, a link to the resource involved, and a link to alert details as they display on the **Alert details Summary** page. From the **Alert details Summary** page, you can review and process the information, as needed.

See *OpenEdge Management: Resource Monitoring* for details about initiating e-mail notifications and changing the content and format of e-mail messages.

**OpenEdge Management reports**

From the **Reports** menu on the menu bar, you can create and display report information related to alerts and alert information trended to the OpenEdge Management Trend Database. The **Realtime Reports** and **Report Templates** categories provide access to various report detail and summary reports you can generate. Figure 13 shows a typical display of what you see in the list frame when you click **Reports** in the menu bar.

![Reports](image)

Figure 13: Expanded Reports categories
For example, the **Open Alert Detail** and **Open Alert Summary** report options under **Realtime Reports** help you examine all outstanding alerts at a glance. Under the **Report Templates** category, you can use predefined templates such as **alertGeneral** and **alertIndividual** to analyze alerts. For information about accessing and running these reports, see **OpenEdge Management: Reporting**.

### The OpenEdge Management log file

All alert types are logged in the OpenEdge Management log file. (Since OpenEdge Management runs as a managed process within the AdminServer, the OpenEdge Management log file is the AdminServer log file.) An entry is added to the log file whenever an alert is either generated or cleared.

**Note:** Alerts are logged in the OpenEdge Management log file only if they are generated. If polling or alerting options are turned off, alerts are not generated.

To access the OpenEdge Management log file:

1. Click **Reports** on the menu bar. The **OpenEdge Management Reports** categories appear in the list frame.

2. Select **Diagnostic Reports** from the categories listed. The detail page for the **Diagnostic Reports** category appears in the detail frame.

3. Select the **AdminServer Log File** link to display the AdminServer log file, as shown:
The OpenEdge Management Trend Database

Like data from several other sources in OpenEdge Management, all alert data that is generated is stored in the OpenEdge Management Trend Database. However, alerts are trended only if the following conditions exist:

- The polling and alerting options are turned on so that OpenEdge Management can generate alerts.
- The trending option is turned on so that OpenEdge Management can trend the alert-generated data.

For details about alert data stored in the Configuration Data tables associated with the OpenEdge Management Trend Database, see *OpenEdge Management: Trend Database Guide and Reference*. 
Clearing alerts through the management console

You can manually clear alerts through the management console or the command-line interface. This section describes how to clear alerts manually through the management console. For details about clearing alerts using the command-line interface, see the “Accessing alert information from the command line” section on page 52.

You can also set the **Clear alert after** property of an alert so that the alert is automatically cleared when the condition that caused the alert no longer exists. See the “Configuring rules for individual resources” section on page 29 for more information.

Clearing individual alerts

OpenEdge Management supports clearing individual alerts.

---

**To clear an alert through the management console:**

1. In the **Alerts** list displayed in the list frame, click the alert you want to clear. The individual alert page appears on the **Alert details Summary** page in the detail frame:

2. Enter a comment, if you want, about the alert you are clearing.

3. Determine if you want to use the **Confirm clearing of alerts** option, which is selected by default. If you retain this default option, a confirmation window appears asking if you want to clear all selected alerts.

   Otherwise, deselect the **Confirm clearing of alerts** option.
4. Click **Clear**. If you retained the **Confirm clearing of alerts** option in **Step 3**, click **OK** to confirm that you want to clear this alert. Otherwise, OpenEdge Management automatically clears the alert and it is removed from the list and detail frames.

**Note:** **Mark Seen** allows you to track who viewed each alert. The **Seen by** field lists the name of the user who first views the alert. When chosen, the **Mark Seen** button label becomes **Mark Unseen**, which allows you to change the seen status of the alert.

### Clearing alerts in bulk

OpenEdge Management provides an option to clear alerts in bulk from the **Clear Alerts** page, as shown in **Figure 14**.

![Clear Alerts](image)

**Figure 14:** Clear Alerts page

The **Clear Alerts** page appears when you select **Bulk Clear** on the **Alert details Summary** page. It consists of the **Alert selection criteria** section and the **Comment for cleared alert(s)** section that is identical to the **Comments** section on the **Alert details Summary** page.
To clear alerts in bulk, you must set up one of four options that OpenEdge Management uses to remove qualifying alerts. Table 4 describes these options.

Table 4: Bulk Clear criteria options

<table>
<thead>
<tr>
<th>To clear alerts . . .</th>
<th>Select . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>By resource</td>
<td>A resource name from the associated dropdown list (the default selection)</td>
</tr>
<tr>
<td>By container</td>
<td>A container name from the associated dropdown list</td>
</tr>
<tr>
<td>By alert type</td>
<td>An alert type available in the associated dropdown list</td>
</tr>
<tr>
<td>Prior to some date and time</td>
<td>A date using dd/mm/yyyy format and specific time of day</td>
</tr>
</tbody>
</table>

The **Confirm clearing of alerts** option displays as a default on the **Clear Alerts** page. If you retain this option, OpenEdge Management prompts you to confirm the removal of all existing alerts that meet the criteria option that you selected, as shown in Figure 15.

![Figure 15: Confirm Clearing Alerts page](image)

Deselect any alerts that you do not want to clear at this time. Click **OK** to remove all alerts simultaneously.

After all alerts have been cleared, a confirming message displays, as shown in Figure 16.

![Figure 16: No open alerts message](image)

The unseen alert count as noted in the menu bar next to the **Alerts** category will display a total of zero unseen alerts at this time.
Disabling alerts

Sometimes you might want to disable alerts, such as when you know your database is going to be unavailable due to a dump and load or another procedure.

There are three ways to disable alerts to prevent OpenEdge Management from generating them:

- Disable alerts in a monitoring plan. This method allows polling of your resources to continue.
- Disable an individual resource. This method does not allow your resource to be polled.
- Disable all alerts (that is, polled, asynchronous, and internal alerts) on the OpenEdge Management Resource Monitoring Configuration page.

Disabling alerts in a monitoring plan

The steps you perform to disable alerts in a monitoring plan apply to all resource types being monitored.

To disable all alerts in a monitoring plan for a resource:

1. Click Resources on the management console menu bar.
2. From the list of resources, click the Edit icon to go to the details page for the resource, whose alerts you want to disable.
3. Click Monitoring Plans in the Command and Control section to access monitoring plans for OpenEdge resources. Monitoring Plans appear directly on the resource details page for all System resources.
4. Click Edit associated with the Default_Schedule_Plan field. The Edit Default_Schedule Monitoring Plan page for the selected resource appears.
5. Clear the Alerts Enabled check box to disable alerts. Alerts will not be generated, but monitoring activities continue and the resource’s status continues to be updated.
6. Click Save.
Disabling an individual resource monitor

Disabling an individual resource monitor prevents any monitoring activities from occurring for that resource. When a resource is disabled using this procedure, all resource polling, alert generation, and information trending cease. Resource monitors that are currently disabled are easily identified in the management console. A gray Resource Status icon precedes the resource’s name when the resource appears in the list frame.

The method used to disable resources depends on whether the resource is a system, network, or file resource, or a database or an OpenEdge server resource.

To disable a system, network, or file resource monitor:

1. Click Resources on the management console menu bar.
2. From the list of resources, click the Edit icon to go to the details page for the resource whose monitoring you want to disable.
3. Click Edit at the top of the resource details page. The Properties section appears in the Edit Resource page.
4. Clear the Enabled check box.
5. Click Save. When you refresh the list frame, the color of the status icon for the disabled resource in the Status column changes to gray.

To disable other OpenEdge resource monitors:

1. Click Resources on the management console menu bar.
2. From the list of resources, click the Edit icon to go to the details page for the resource whose monitoring you want to disable.
3. Click Control or Broker Control (depending on the resource) in the Command and Control section. The Resource Control page appears.
4. Click Edit. Clear the Enabled check box to disable the database resource.
5. Click Save. When you refresh the list frame, the color of the status icon for the disabled resource in the Status column changes to gray.

Disabling alerts for all resources

You can disable the appearance of all types of alerts—polled, asynchronous, and internal—from the OpenEdge Management console.

To disable alerts:

1. Choose one:
   - Click Options on the menu bar. Then click Resource monitoring in the list frame.
• Choose Options → Configuration → Resource monitoring.

The OpenEdge Management Resource Monitoring Configuration page appears in the detail frame:

2. Clear the Generate alerts check box.

3. Click Submit.
Accessing alert information from the command line

You can use the OpenEdge Proenv utility to perform the following actions from the command line:

- Start, query, and stop OpenEdge Management.
- Clear an alert.
- Use other alert commands (firealert and alertlist).
- Access command-line help.

You can also use the command line to manage the OpenEdge Management configuration database. For details on the commands you can enter, see the appropriate section of OpenEdge Management and OpenEdge Explorer: Getting Started.

Using the Proenv utility

You can use the OpenEdge Proenv utility to perform certain OpenEdge Management actions from the command line.

You access the Proenv utility by choosing Start→Programs (or All Programs)→Progress→OpenEdge→Proenv. The environment window sets the shell environment variables needed for executing both OpenEdge Management and OpenEdge commands, as shown in Figure 17.

Figure 17: Proenv window
Starting, querying, and stopping OpenEdge Management

Use the following syntax to start, query, or stop OpenEdge Management from the command line:

Syntax

```
fathom [-start|-query|-stop] [options]
```

Table 5 describes the options you can use when starting or stopping OpenEdge Management.

Table 5: Options for starting and stopping OpenEdge Management

<table>
<thead>
<tr>
<th>Option syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-host &lt;host&gt;</td>
<td>Host where the AdminServer process resides.</td>
</tr>
<tr>
<td>-port &lt;port&gt;</td>
<td>Port where the AdminServer runs. Default is 20931.</td>
</tr>
<tr>
<td>-timeout &lt;time&gt;</td>
<td>Time, in seconds, for OpenEdge Management to wait for a response. Default is 240 seconds.</td>
</tr>
<tr>
<td>-user &lt;user-name&gt;</td>
<td>Username on machine where the AdminServer resides. Default is current user.</td>
</tr>
<tr>
<td>-password &lt;user-password&gt;</td>
<td>Password associated with the specified username. Not needed for a local connection.</td>
</tr>
</tbody>
</table>

Note: Use of the -password parameter might allow others to see your password in readable, clear text.

Examples

You want to connect to your AdminServer but you do not want to wait more than five minutes for the connection to be made. Enter the following syntax to start OpenEdge Management from the command line:

Syntax

```
fathom -start -timeout 300
```

Enter the following syntax to stop OpenEdge Management from the command line and specify that the command-line interface tool wait five minutes before reporting an error:

Syntax

```
fathom -stop -timeout 300
```

To learn the execution status of OpenEdge Management with an AdminServer port number of 1905, enter the following syntax:

Syntax

```
fathom -query -port 1905
```
Clearing an alert

To clear an alert from the command line, use the following syntax:

Syntax

```
fathom [-httpport <port-number>] -clear [option] [-comment '<comment text>']
```

**Note:** You specify `-httpport` only if OpenEdge Management is running on a port other than the default of 9090.

Table 6 lists options to use with the `fathom -clear` command.

<table>
<thead>
<tr>
<th>Option syntax</th>
<th>Purpose</th>
<th>How to use</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>-httpport &lt;port-number&gt;</code></td>
<td>Identifies the port number if it is not the default port of 9090</td>
<td>Provide the <code>-httpport</code> option followed by the port number.</td>
</tr>
<tr>
<td><code>-comment '&lt;comment-text&gt;'</code></td>
<td>Provides a comment when clearing an alert</td>
<td>Provide the <code>-comment</code> option followed by the comment text. The text must be enclosed in single quotation marks.</td>
</tr>
</tbody>
</table>
## Table 6: Clear alert command options (2 of 3)

<table>
<thead>
<tr>
<th>Option syntax</th>
<th>Purpose</th>
<th>How to use</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>-alert &lt;alert-name&gt;</code> <code>&lt;container&gt;</code></td>
<td>Clears all instances of a particular alert for one specific resource, or for all resources within a specific container.</td>
<td>Provide the <code>-alert</code> command followed by the alert name. Then provide either the resource name or the resource type. Options are defined as follows:</td>
</tr>
<tr>
<td><code>-alert &lt;alert-name&gt;</code> <code>&lt;resource&gt;</code></td>
<td>Clears an alert by its number (regardless of the resource or its type).</td>
<td>Provide the <code>-alertid</code> option followed by its number.</td>
</tr>
</tbody>
</table>

- `-alert` — The name of the alert as defined in OpenEdge Management.
- `-alertid` — The alert id number.
- `-container` — The name of a container as defined in OpenEdge Management.
- `-resource` — The name or the reference key of the resource as defined in OpenEdge Management. See the "Using the alertlist command with additional options" section on page 60 for details about the reference key.
- `-restype` — The resource type. The type of resource is limited to one of the following: database, file, network, openedge, or system.
### Table 6: Clear alert command options

<table>
<thead>
<tr>
<th>Option syntax</th>
<th>Purpose</th>
<th>How to use</th>
</tr>
</thead>
<tbody>
<tr>
<td>-all [-restype &lt;resource type&gt;]</td>
<td>Clears:</td>
<td>Provide the -all command without an option to clear all alerts, or with one of these options to clear particular alerts:</td>
</tr>
<tr>
<td>[-resource &lt;resource&gt;]</td>
<td>• All alerts</td>
<td>• -restype — The resource type. The type of resource is limited to one of the following: database, file, network, openedge, or system.</td>
</tr>
<tr>
<td>[-alert &lt;alert name&gt;]</td>
<td>• All alerts for a particular resource type</td>
<td>• -resource — The name or the reference key of the resource as defined in OpenEdge Management. See the “Using the alertlist command with additional options” section on page 60 for details about the reference key.</td>
</tr>
<tr>
<td>[-container &lt;container&gt;]</td>
<td>• All alerts for a particular resource</td>
<td>• -alert — The name of the alert as defined in OpenEdge Management.</td>
</tr>
<tr>
<td>[-severity &lt;severity&gt;]</td>
<td>• All instances of a particular alert for all resources</td>
<td>• -container — The name of a container as defined in OpenEdge Management.</td>
</tr>
<tr>
<td>[-severity &lt;severity&gt;]</td>
<td>• All alerts for a specific container</td>
<td>• -severity — The alert severity: Severe, Error, Warning, or Informational.</td>
</tr>
<tr>
<td>[-severity &lt;severity&gt;]</td>
<td>• All alerts for a specific severity</td>
<td></td>
</tr>
</tbody>
</table>

### Example

OpenEdge Management polls your Sports2000 database and sends an alert for Record Waits High (the alert sent when waits for records are above a defined threshold). To clear this alert from the command line, enter the following:

```
fathom -httpport 8080 -clear -alert RecordWaitsHigh -comment 'Cleared by Admin'
```

### Note:

You specify -httpport only if OpenEdge Management is running on a port other than the default of 9090.
Other alert commands

OpenEdge Management supports the following alert commands:

- `-firealert`
- `-alertlist`

Using the `-firealert` command

Use the following syntax to fire an alert:

```
fathom -firealert [alertmessage]
```

OpenEdge Management also supports generation of application-specific alerts. In your application, you can send alerts to OpenEdge Management using the `-firealert` options shown in Figure 18.

![Figure 18: -firealert command options](image)

**Example**

You want to fire an alert regarding the CPU. Enter the following on the command line:

```
fathom -firealert JOBFAILED -resource CPU -msg 'JOB XYZ FAILED'
```

The alert fires, as shown in Figure 19.

![Figure 19: Firing an alert](image)
You can then look at the alert details for the CPU. Enter the following on the command line:

```
fathom -alertlist -detail -resource CPU
```

The alert details appear, as shown in Figure 20.

![Figure 20: Firealert command example](image)

### Using the -alertlist command with group selection options

You can display an alert list by specifying one of the -alertlist command group selection options on the command line. Table 7 identifies and describes each group selection option.

<table>
<thead>
<tr>
<th>Option syntax</th>
<th>Purpose</th>
<th>How to use</th>
</tr>
</thead>
<tbody>
<tr>
<td>-alert</td>
<td>To view a list of all instances of a particular alert</td>
<td>Provide the name of the alert you want to see.</td>
</tr>
<tr>
<td>-resource</td>
<td>To view a list of alerts for a particular resource</td>
<td>Provide the name of the resource whose alerts you want to see listed.</td>
</tr>
<tr>
<td>-container</td>
<td>To view alerts associated with a specific container</td>
<td>Provide the name of the container whose alerts you want to see listed.</td>
</tr>
<tr>
<td>-restype</td>
<td>To view a list of alerts for a particular resource type</td>
<td>Provide the resource type whose alerts you want to see listed. The resource type is limited to one of the following: database, file, network, system, or openedge.</td>
</tr>
<tr>
<td>-severity</td>
<td>To view a list of alerts of a particular severity</td>
<td>Provide the severity level of alerts you want to see listed: severe, error, warning, or informational.</td>
</tr>
</tbody>
</table>
Use the following syntax to display an alert list:

**Syntax**

```
fathom -httpport 8080 -alertlist [group selection option] [keyword value]
```

**Note:** You specify `-httpport` only if OpenEdge Management is running on a port other than the default of 9090.

You can also use two additional options, the `-detail` and `-verbose` options, presented in Table 8, with the group selection options highlighted in Table 7.

Although the command line does not limit the number of options you can type into the command line, only the last group selection option identified on the command line is processed.

**Figure 21** identifies a command line that generates a group selection based on the `-restype` option where the resource type is identified as system. Note that the resource name, listed in the **Resource** column, specifies the container name and associated resource name. Although this level of detail provides more information about a resource, it does not completely eliminate the possibility of confusion among resources with similar or identical names.

**Figure 21:** `-restype` group selection option results
Using the alertlist command with additional options

Table 8 describes the additional options -detail and -verbose.

**Note:** Unlike the group selection options highlighted in Table 7, the -detail and -verbose options will be processed regardless of the position in which you enter them on the command line.

<table>
<thead>
<tr>
<th>Option syntax</th>
<th>Purpose</th>
<th>How to use</th>
</tr>
</thead>
<tbody>
<tr>
<td>-detail</td>
<td>To format the display to provide a block of information about the alert, shown in the command line. The block of information matches what you see when you display the alert in the console. See Table 9 for a summary of the alert list details.</td>
<td>Provide the -detail option along with the option whose alert information you want to see listed.</td>
</tr>
<tr>
<td>-verbose</td>
<td>To change the resource column of the displayed alerts from the generic format container:resource name to the fully qualified resource key. See Figure 22 to see an example of how to use the -verbose option.</td>
<td>Provide the -verbose option along with the option whose alert information you want to see listed.</td>
</tr>
</tbody>
</table>

Figure 22 identifies a command line that generates a group selection based on the -restype option that also includes the -verbose option. Note that the resource name, listed in the Resource column, specifies the fully qualified resource key. A fully qualified resource key is the most complete reference to a resource. The default format for a fully qualified resource key identifies each resource by its container name, the resource category to which the resource belongs, and the specific resource type and associated resource name.

In Figure 22, the fully qualified resource key information identifies localhost as the container, the resource category as system, and the specific cpu resource name as CPU.

![Figure 22: -restype group option with verbose option results](image)

**Note:** The container name localhost is logically the same as the container name for the system where OpenEdge Management is installed and running.
Use the fully qualified resource key to:

- Ensure that you are not confusing one resource name with another one that is either identical or similar. For example, it is possible to confuse a wsbroker1 on one container with another wsbroker1 on a different container. Referencing a resource by its explicit fully qualified resource key eliminates confusion as to what resource you are working with.

- Provide easy access to the complete resource information. You can cut and paste the fully qualified resource key into the command line when you use the -resource group option.

**Note:** Due to the use of the colon in the fully qualified resource key between the container name and the resource category information, this format might need to be put in quotation marks on UNIX systems.

Table 9 lists the details that can appear in the alert list.

**Table 9: Alert list details**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alert ID</td>
<td>The number given to the alert.</td>
</tr>
<tr>
<td>Alert name</td>
<td>The name of the alert.</td>
</tr>
<tr>
<td>Alert severity</td>
<td>Whether the alert is considered an error, a warning, or informational or</td>
</tr>
<tr>
<td></td>
<td>severe in nature.</td>
</tr>
<tr>
<td>Alert message</td>
<td>The content of the alert message; for example, notification that the</td>
</tr>
<tr>
<td></td>
<td>Database Resource known as the OpenEdge Management Trend Database has been</td>
</tr>
<tr>
<td></td>
<td>enabled.</td>
</tr>
<tr>
<td>Alert count</td>
<td>The number of times the alert has occurred.</td>
</tr>
<tr>
<td>Container</td>
<td>The name of the container to which the resource belongs.</td>
</tr>
<tr>
<td>Resource</td>
<td>The name of the resource; for example, OpenEdge Management Trend Database.</td>
</tr>
<tr>
<td>Last fire date</td>
<td>The time and date when the alert was last fired.</td>
</tr>
<tr>
<td>First fire date</td>
<td>The time and date when the alert was first fired.</td>
</tr>
<tr>
<td>Has been seen?</td>
<td>Whether the alert has been seen yet (either true if it has been seen or</td>
</tr>
<tr>
<td></td>
<td>false if it has not been seen).</td>
</tr>
<tr>
<td>Seen by</td>
<td>If the alert has been seen, the name of the user who saw it. (If the alert</td>
</tr>
<tr>
<td></td>
<td>has not been seen, the Seen by field does not appear.)</td>
</tr>
</tbody>
</table>
Examples

Enter the following command to see a list of existing OpenEdge Management alerts from the command line:

```
fathom -alertlist
```

Information about the current alerts appears, as shown in Figure 23.

![Figure 23: -alertlist in the command line](image)

In Figure 23 there are eight alerts across a number of resources. As identified in the Resource column, all of these resources are on the localhost container. The alert ID numbers (ID) and severity (Severity) are also provided.

Enter the following command for a list of alerts for all OpenEdge server resources:

```
fathom -alertlist -restype openedge
```

You see any alerts that exist for any OpenEdge server resources (openedge) listed. If there are no existing alerts, you receive the message shown in Figure 24.

![Figure 24: -alertlist for openedge resource type](image)

To see specific details about the alerts that exist for system resources, use either the -detail option or the -verbose option.

Enter the following command to examine the results of using the -detail option:

```
fathom -alertlist -restype system -detail
```
The details appear, as shown in Figure 25.

![Figure 25: -alertlist command used with -detail option]

Enter the following command to examine the results of using the `-verbose` option:

```
fathom -alertlist -restype system -verbose
```

The details appear, as shown in Figure 26.

![Figure 26: -alertlist command used with -verbose option]
OpenEdge Management internal alerts

OpenEdge Management internal alerts automatically inform you of events that occur internal to OpenEdge Management and for which you cannot set up specific alert definitions. For example, there is no option to define a rule, associated alert, and action for an internal event such as the fact that the CPU resource could not trend data to the OpenEdge Management Trend Database. In this instance, OpenEdge Management automatically triggers an alert to inform you of this internal activity.

Defining an action for all internal alerts

OpenEdge Management supports one specific option for the internal alert feature. You can select an action for OpenEdge Management to associate with all internal alerts that are triggered.

To access the action to perform on internal OpenEdge Management alerts:

1. Choose one:
   - Click Options on the menu bar. Then click General in the list frame.
   - Choose Options → Configuration → General.

   The OpenEdge Management General Configuration page appears in the detail frame:

   ![OpenEdge Management General Configuration](image)

2. From the drop-down list box associated with the Action to perform on internal OpenEdge Management alerts field, select the action you want OpenEdge Management to perform in response to internally generated alerts. For specific details about default actions, see the section about actions in OpenEdge Management: Resource Monitoring.

Note: The Generate alerts option on the OpenEdge Management Resource Monitoring Configuration page governs all alerts—polled, asynchronous, or internal—that appear in the management console. To enable this option for internal alerts, you must select the Generate alerts option and the Action to perform on internal OpenEdge Management alerts on the OpenEdge Management General Configuration page.
Alerts Reference

This chapter provides detailed information about the asynchronous alerts and polled alerts that OpenEdge Management can generate for asynchronous rules and polled rules, as outlined in the following section:

• Alert organization and properties
Alert organization and properties

For ease of reference, some of the alerts are listed in alphabetical order by prefix. The alerts related to the database and OpenEdge appear in this text with the unique prefixes listed in Table 10.

Table 10: Alert type prefixes

<table>
<thead>
<tr>
<th>Alert type</th>
<th>Prefix</th>
</tr>
</thead>
<tbody>
<tr>
<td>AppServer</td>
<td>AS_</td>
</tr>
<tr>
<td>Database</td>
<td>DB_</td>
</tr>
<tr>
<td>NameServer</td>
<td>NS_</td>
</tr>
<tr>
<td>WebSpeed</td>
<td>WS_</td>
</tr>
<tr>
<td>Microsoft SQL DataServer</td>
<td>MSS_</td>
</tr>
<tr>
<td>ODBC DataServer</td>
<td>OD_</td>
</tr>
<tr>
<td>Oracle DataServer</td>
<td>OR_</td>
</tr>
<tr>
<td>AppServer Internet Adapter</td>
<td>AIA_</td>
</tr>
<tr>
<td>SonicMQ Adapter</td>
<td>MQA_</td>
</tr>
<tr>
<td>Web Services Adapter</td>
<td>WSA_</td>
</tr>
<tr>
<td>OE Web Server</td>
<td>RESTMGR1_</td>
</tr>
<tr>
<td>Messengers</td>
<td>MSNGR_</td>
</tr>
</tbody>
</table>

Report alerts related to report run failures are preceded by the prefix ReportRunFailed. Alerts that do not have a prefix are listed alphabetically by name.

Alert properties

This chapter presents one or more of the following property details for alerts:

- **Name** — The name of the alert. In those instances in which the specific alert name might vary, the alert is identified in this chapter with brackets (< >).

- **Message** — What the alert looks like to the recipient. Variables that appear in alert messages are identified in this reference section in italics. For example, Broker: name, NameServer: NSName, and Threshold: threshold.

- **Description** — A description of the alert.

- **Type** — The type of alert: polled or asynchronous. See the "Alert types" section on page 20 for a detailed definition for each alert type.
- **Action** — Suggestions on what remedial actions to take.
- **Note** — Additional clarifying information about an alert.
- **See Also** — References to other manuals. These references might provide additional details about an alert, or about related functionality.

You might not see all elements listed for every alert; elements are listed if applicable.
### Chapter 3: Alerts Reference

#### <Specific Log File Rule Name>

**Message**  
<\textit{rulename}>: Text found in <\textit{file being monitored}>. Rule name (# of matches):%s

**Description**  
Sent when the log file monitor finds one or more strings in file \textit{x}, where \textit{x} is the file being monitored.

**Type**  
Synchronous

**Note**  
The Log File Monitor found a string or strings in the log file it is monitoring. The strings have the Log File Rule name and a number in brackets. The number represents the number of times the search string was found in a poll. The string name is the name of the rule associated with the active monitoring plan, not the search string itself.

#### ActionNotRun

**Message**  

**Description**  
Sent when an action running in response to an alert fails due to an error. It is possible that this alert can be triggered when the Action Queue is full, indicating that when actions are invoked they are not being completed due to this full state.

**Type**  
Asynchronous

**Action**  
Contact Progress Software Corporation Technical Support.

**Notes**  
- If you receive this alert, any recovery or notification that the action was to perform will not have occurred.
- If the thread pool or queue used to run the action overflows, this alert is generated.

#### AS_AverageProcedureDurationHigh

**Message**  
“The average execution time of a procedure has exceeded the threshold. Threshold: threshold Current Value: Current value Procedure: Procedure name.”

**Description**  
The average time spent executing a procedure during the polling interval exceeded the threshold. This situation could indicate a bottleneck in the application or other unforeseen events that inhibit the offending procedure from executing as quickly as expected.

**Type**  
Polled

**See Also**  
OpenEdge Management: Servers, DataServers, Messengers, and Adapters

#### AS_BrokerAbnormalShutdown

**Message**  
“AppServer broker shut down abnormally. Broker: \textit{name}.”

**Description**  
Sent when an AppServer broker shut down abnormally (crashed).

**Type**  
Asynchronous

**Action**  
View the appropriate log file for further information.
AS_BrokerNormalShutdown

Description  Sent when an AppServer broker shuts down normally.
Type  Asynchronous

AS_BrokerStartup

Message  “AppServer broker started. Broker: name.”
Description  Sent when an AppServer broker starts up.
Type  Asynchronous

AS_ClientAbnormalDisconnect

Message  “A client is disconnected abnormally. Message: disconnectMsg.”
Description  Sent when an AppServer client connection is abnormally dropped.
Type  Asynchronous

AS_NameServerUnavailable

Message  “AppServer broker failed to reach the NameServer. Broker: name, NameServer: NSname.”
Description  Sent when the AppServer broker failed to contact the NameServer.
Type  Asynchronous
Action  Check the AdminServer log (admserv.log) for more information about NameServer unavailable.

AS_QueuedRequestPercentHigh

Message  “The percentage of queued requests has exceeded the threshold. Current Value: value, Threshold: threshold, Broker: namename.”
Description  The percentage of client requests queued during the polling interval exceeded the threshold. This situation could indicate bottlenecks or other unforeseen events that are slowing down request processing.
Type  Polled
Action  Check the AdminServer log (admserv.log) for further information about RequestQueueDepthHigh.
See Also  OpenEdge Management: Servers, DataServers, Messengers, and Adapters
# AS_RejectedRequestPercentHigh

**Message**

"The percentage of rejected requests has exceeded the threshold. Broker: *name*, Current Value: *value%*, Threshold: *threshold%*.”

**Description**

The percentage of client requests rejected during the polling interval exceeded the threshold. This situation could indicate bottlenecks or tuning problems, preventing client requests from being serviced.

**Type**

Polled

**Action**

Check the AdminServer log (*admserv.log*) for further information about Client Request Rejected and No Available Server.

**See Also**

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

# AS_ServerAdded

**Message**

“AppServer broker added server(s). Broker: *name*, Number of servers added: *num*.”

**Description**

Sent when AppServer servers have been added to the pool of available servers.

**Type**

Asynchronous

# AS_ServerKilled

**Message**

One of two messages can appear for this alert:

- “Server killed. Server PID: *PID*.”
- “Server cannot be killed at this time. Server PID: *PID*.”

**Description**

Sent when a user manually destroys an AppServer or AppServers. Typically a user initiates a server kill action when servers hang under a connecting status for a long time.

**Type**

Asynchronous

**Action**

If the kill request cannot be processed, check the log file.

**See Also**

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

# AS_ServerTrimmed

**Message**

“AppServer broker trimmed server(s). Broker: *name*, Number of servers trimmed: *num*.”

**Description**

Sent when AppServer servers have been trimmed from the pool of available servers.

**Type**

Asynchronous

**See Also**

*OpenEdge Management: Servers, DataServers, Messengers, and Adapters*
AS_ServerUnavailable

**Message**
“The server has been in an unavailable state for more than specified number of polls. Threshold: threshold, Number of polls: number of polls, PID: process ID.”

**Description**
Sent when a server has been unavailable for more than the specified number of polls.

**Type**
Polled

**Action**
Check the AdminServer log (admserv.log) for further information about ServerUnavailableTimeout.

BadSearchPattern

**Message**
“The search pattern provided to the HTTP Monitor’s content rule is malformed. Pattern: x.”

**Description**
Sent if the HTTP Monitor could not search downloaded content because the pattern provided did not follow the rules for regular expressions.

**Type**
Polled

ContextSwitchHigh

**Message**
“Upgrade record locks are n. The current threshold is threshold.”

**Description**
Sent to identify the number of times that the CPU has to switch between processes, saving the state of that process, including memory information, to ensure that it can restart that process exactly where it left off.

**Type**
Polled

**Action**
Review CPU and memory activity to determine if they are overloaded.

**Note**
Content switches not only deal with CPU, but also with memory consumption, paging, and swapping.

CPUBusyThresholdExceeded

**Message**
“CPU Busy Threshold Exceeded! Value: x, Threshold: y.”

**Description**
Sent when a CPU’s configured threshold is exceeded.

**Type**
Polled

**Action**
If the CPU Busy percent is continuously above the defined threshold, look for race conditions in individual processes and reduce the number of active applications. If necessary, consider upgrading the CPU to a faster model.
Chapter 3: Alerts Reference

CPUNotFound

Message  “Cannot obtain information about the CPU resource.”
Description Sent when the CPU monitor fails to obtain valid query information for the CPU resource.
Type Asynchronous
Action Because the CPU monitor cannot locate the underlying CPU resource, the CPU monitor is unable to obtain information about the CPU activity. This might be related to a problem with one or more CPUs on the machine or a problem with the machine-specific library used to monitor the system resources. Check the AdminServer log (admserv.log) to see if the osmetrics shared library has logged errors while initializing or during operation.

DB_AbnormalShutdown

Message  “Abnormal shutdown has occurred for database x.”
Description Sent when the DB_agent detects the death of the database broker.
Type Asynchronous
Action Check the database log file for additional information regarding the abnormal shutdown.
Note An abnormal shutdown occurs when the database crashes or the shutdown is performed with Proshut instead of Dbman. (The Dbman command is initiated through the AdminServer, enabling the AdminServer to be aware of the shutdown activity. The Proshut command communicates directly with the database server, causing the AdminServer to assume that the database has abnormally shut down.)

DB_AgentCrash

Message  “Database Agent, x, crashed!”
Description Sent when the database monitoring agent crashes. If the agent is not running, database monitoring cannot occur.
Type Asynchronous
Action Check that the database agent is still running. If it is not, restart it.

DB_AgentDown

Message  “Database agent, x, is shutting down.”
Description Sent when a database agent is shut down. If the agent is not running, database monitoring cannot occur.
Type Asynchronous
Action If the agent should be running, restart it.
**DB_AgentIdle**

**Message**
“Database Agent, x, is not running.”

**Description**
Sent when a database agent is not running but the database resource is enabled. If the agent is not running, database monitoring cannot occur.

**Type**
Asynchronous

**Action**
Go to the Database Control page for the affected database and start the agent.

---

**DB_AgentReadError**

**Message**
“A problem was encountered getting data from database x. The data will be ignored.”

**Description**
Sent when a problem was encountered with retrieving VST data during the polling of the database. No rules will be evaluated.

**Type**
Asynchronous

---

**DB_AgentStartup**

**Message**
“A normal string has occurred for database agent, x.”

**Description**
Sent when a database agent starts.

**Type**
Asynchronous

---

**DB_AiWWritePercentLow**

**Message**
“After-image writer percentage is n. The current threshold is x. Sample number = y.”

**Description**
Sent when the after-image writer write percent is below the configured threshold.

**Type**
Polled

**Action**
Verify that after-imaging is enabled and that there is an AIW running. Automate the checking of AIW on managed databases.

**Notes**
- If the database license is Workgroup, AIW is disabled and cannot be enabled.
- Information about AiWWritePercentLow is stored in the OpenEdge Management Trend Database in the Db_ActLog table.
### DB_AreaSpaceUtilizationHigh

**Message**  
"Area X is n% utilized. The threshold is x."

**Description**  
Sent when the percentage of used blocks in area X is high.

**Type**  
Polled

**Note**  
Information about DB_AreaSpaceUtilizationHigh is stored in the OpenEdge Management Trend Database.

**See Also**  
For additional database-related information, see:
- *OpenEdge Management: Trend Database Guide and Reference*
- *OpenEdge Data Management: Database Administration*

### DB_AutoStartFail

**Message**  
"Database x has failed to start."

**Description**  
Sent when the database is configured to start automatically when the AdminServer starts, but does not.

**Type**  
Asynchronous

**Action**  
Check the database log file for additional information regarding the failed start.

### DB_BIPartialWritesHigh

**Message**  
"Before-image partial writes are n. The current threshold is x."

**Description**  
Sent when the number of partial writes of before-image buffers to the before-image file is above the threshold.

**Type**  
Polled

**Action**  
Decrease `-biblocksize` parameter to next size down or increase `-Mf`.

**Note**  
Information about DB_BIPartialWritesHigh is stored in the OpenEdge Management Trend Database in the Db_ActLog table.
**DB_BIWritePercentLow**

**Message**  
“Before-image writer percentage is n. The current threshold is x.”

**Description**  
Sent when the database before-image writer write percentage is below the threshold.

**Type**  
Polled

**Action**  
Lower BI block size.

**Notes:**
- If the database license is Workgroup, BIW is disabled and cannot be enabled.
- Information about BIWritePercentLow is stored in the OpenEdge Management Trend Database in the Db_ActLog table.

**DB_BrokerReconnectFail**

**Message**  
“Database broker for the specified database failed to reconnect when the AdminServer was started.”

**Description**  
Sent when the database broker was connected and running when the AdminServer was stopped, and failed to reconnect when the AdminServer was restarted.

**Type**  
Asynchronous

**DB_BufferIOHigh**

**Message**  
“Database I/O is unusually high. The write-to-I/O ratio is x. The current threshold is y.”

**Description**  
Sent when database writes-to-read ratio is above average.

**Type**  
Polled

**Action**  
Review database layout and disk subsystem performance.

**Note**  
Information about BufferIOHigh is stored in the OpenEdge Management Trend Database in the Db_ActSum table.
DB_BuffersFlushedatCheckpointHigh

Message  “Buffers flushed at checkpoint were n. The current threshold is x.”

Description  Sent if there are database buffers that were flushed at checkpoint.

Type  Polled

Action  Verify that APWs are running. Increase the BI cluster size. Start additional APWs if only one is running.

Notes  • If the database is a licensed workgroup, APW is disabled and cannot be enabled.
       • Starting additional APWs can be automated on managed databases.
       • The database must be down before the BI cluster size can be changed.
       • Information about BuffersFlushedatCheckpointHigh is stored in the OpenEdge Management Trend Database in the Db_ActBuf and Db_Checkpoint tables.

DB_BusyAIBufferWaitsHigh

Message  “After-image busy buffer waits are n. This is above the threshold. The current threshold is x.”

Description  Sent when database after-image busy buffer waits are above the defined threshold.

Type  Polled

Action  Raise AI block size.

Note  Information about BusyAIBufferWaitsHigh is stored in the OpenEdge Management Trend Database in the Db_ActLog table.

DB_BusyBIBufferWaitsHigh

Message  “Waits for busy before-image buffers is n. The current threshold is x.”

Description  Sent when the waits for busy before-image buffers percentage is above the threshold.

Type  Polled

Action  Verify that the BI block size is adequate.

Note  Information about BusyBIBufferWaitsHigh is stored in the OpenEdge Management Trend Database in the Db_ActLog table.
**DB_CheckpointLengthShort**

**Message**  
“Checkpoint length is $n$ seconds. The current threshold is $x$ seconds.”

**Description**  
Sent when the database checkpoint length is below the threshold.

**Type**  
Polled

**Action**  
Increase the BI cluster size.

**Notes**
- If the database license is Workgroup, the BIW is disabled and cannot be enabled.
- Information about CheckpointLengthShort is stored in the OpenEdge Management Trend Database in the Db_Checkpoint table.
- The database must be down before the -BI clusters can be changed.

**DB_DatabaseCommitsLow**

**Message**  
“Database commits are $n$. The current threshold is $x$.”

**Description**  
Sent when database commits are below the threshold.

**Type**  
Polled

**Action**  
Make sure that adequate database activity has occurred for this sample.

**Note**  
Information about DatabaseCommitsLow is stored in the OpenEdge Management Trend Database in the Db_ActSum table.

**DB_DatabaseCrash**

**Message**  
“Database Broker, x, crashed!”

**Description**  
Sent when the database broker crashes.

**Type**  
Asynchronous

**DB_DatabaseDown**

**Message**  
“Database Broker, x, is shutting down.”

**Description**  
Sent when a database broker is shut down.

**Type**  
Asynchronous

**Note**  
This alert is informational only.
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**DB_EmptyAIBuffersWaitsHigh**

**Message**
"After-image buffers unavailable are \( n \). The current threshold is \( x \)."

**Description**
Sent when there are no database after-image buffers available.

**Type**
Polled

**Action**
Increase the \(-aibufs\) startup parameter.

**Note**
Information about EmptyAIBuffersWaitsHigh is stored in the OpenEdge Management Trend Database in the Db_ActLog table.

**DB_EmptyBIBufferWaitsHigh**

**Message**
"Wait percentage for empty before-image buffers is \( n\% \). The current threshold is \( x\)."

**Description**
Sent when wait percentage for empty before-image buffers is above the threshold.

**Type**
Polled

**Action**
Increase the Before-image Buffers (-bibufs) startup parameter.

**Note**
Information about EmptyBIWaitsHigh is stored in the OpenEdge Management Trend Database in the Db_ActLog table.

**DB_FathomTrendDatabase**

**Message**
"The database at database location does not match the FathomTrendDatabase schema."

**Description**
Sent when the database running at the port specified for the OpenEdge Management Trend Database is not an OpenEdge Management Trend Database.

**Type**
Asynchronous

**Action**
Specify another port, or stop the database running at that port and start the OpenEdge Management Trend Database.

**DB_NormalShutdown**

**Message**
"A normal shutdown has occurred for database \( x \)."

**Description**
Sent when normal database shutdown has completed.

**Type**
Asynchronous

**Action**
Check the database log file for additional information regarding the shutdown.
**DB_PartialAIBufferWritesHigh**

**Message**  
“After-image partial write percentage is n%. The current threshold is x%.”

**Description**  
Sent when the database after-image buffer partial writes are above the threshold.

**Type**  
Polled

**Action**  
Increase AI block size.

**Note**  
Information about PartialAIBufferWritesHigh is stored in the OpenEdge Management Trend Database in the Db_ActLog table.

**DB_PhysicalReadHigh**

**Message**  
“Database physical to logical read ratio is n. The current threshold is x.”

**Description**  
Sent when the database physical-to-logical read ratio is above the threshold.

**Type**  
Polled

**Action**  
Increase database buffers (-B) startup parameter.

**Note**  
Information about PhysicalReadHigh is stored in the OpenEdge Management Trend Database in the Db_ActBuf table.

**DB_ReadsToRequestsHigh**

**Message**  
“Database reads to requests percentage is n. The current threshold is x.”

**Description**  
Sent when the database Read to Request percentage is unusually high.

**Type**  
Polled

**Action**  
Review User Requests and User Reads to ensure proper ratios.

**Note**  
Information about DatabaseReadstoRequestsHigh is stored in the OpenEdge Management Trend Database in the Db_ActSum table.

**DB_RecordWaitsHigh**

**Message**  
“The percentage of waits for records is n%. The current threshold is x%. Exclusive=a%. Share=b%. Upgrade=c%. RecGet=d%.”

**Description**  
Sent when waits for records are above the threshold.

**Type**  
Polled

**Action**  
Review what users hold share and exclusive locks by querying the _ActLock and _UserLock VSTs.

**Note**  
Information about RecordWaitsHigh is stored in the OpenEdge Management Trend Database in the Db_ActRec table.
Chapter 3: Alerts Reference

**DB_ResourceAdded**

**Message**  
“Database Resource, x, added.”

**Description**  
Sent when a managed database object is created.

**Type**  
Asynchronous

**Note**  
This alert is informational only.

**DB_ResourceDisabled**

**Message**  
“Database Resource, x, disabled.”

**Description**  
Sent when a database resource is disabled.

**Type**  
Asynchronous

**Note**  
This alert is informational only.

**DB_ResourceEnabled**

**Message**  
“Database Resource, x, enabled.”

**Description**  
Sent when a database resource is enabled.

**Type**  
Asynchronous

**Note**  
This alert is informational only.

**DB_ResourceNameConflict**

**Message**  
“Cannot create database resource. A database resource with this name already exists.”

**Description**  
Sent when you create a database configuration that has the same name as an existing OpenEdge Management database resource. As a result, OpenEdge Management could not create a database resource for the new database configuration.

**Type**  
Asynchronous

**Action**  
Be sure to give each OpenEdge Management resource a unique name.

**DB_Startup**

**Message**  
“A startup has occurred for database x.”

**Description**  
Sent when a database startup has been detected.

**Type**  
Asynchronous
DB_TrendingStopped

**Message**  
“Trending information has stopped being gathered for database n.”

**Description**  
Sent when trending information has stopped being gathered for a database.

**Type**  
Asynchronous

**Action**  
Check the AdminServer log file (admserv.log) for additional information.

**Note**  
The gathering of trending information stops when the database is shut down, the Db_agent is disconnected from the database, or the trending flag is turned off.

DB_UserCountHigh

**Message**  
“The user count for the specified database has exceeded the threshold. Threshold: x, User Count: y.”

**Description**  
Sent when the defined user count threshold is exceeded.

**Type**  
Polled

DB_VariableAreaExtentGrow

**Message**  
“Extent ExtentName has extended more than 3 times in this sample. The threshold is x.”

**Description**  
Sent when a database variable-length data or before-image extent extends.

**Type**  
Polled

**Action**  
Add an additional fixed-length extent.

**Note**  
Information about VariableAreaExtentGrow comes from the _ActIOFile VST.

**See Also**  
[OpenEdge Data Management: Database Administration](#) for details about how to add an extent.

DiminishedFileGrowth

**Message**  
“The file is growing slower than the specified rate.” file: + filename.

**Description**  
Sent when the growth rate specified on the File Growth Rate rule has not been met.

**Type**  
Polled
DiskAvgQueueHigh

**Message**  
“Disk average queue length is \( n \). The current threshold is \( threshold \).”

**Description**  
Sent to inform the user of the average number of processes in the queue for disk activity. This information can be reads or writes. However, it is typically expressed as reads.

**Type**  
Polled

**Action**  
Review the disk performance information, disk system layout, and application use of disk.

DiskBusyThresholdExceeded

**Message**  
“Disk Busy Threshold Exceeded! Value: \( x \), Threshold: \( y \).”

**Description**  
Sent when a disk’s configured threshold is exceeded.

**Type**  
Polled

**Action**  
Consider the following options to reduce the disk’s load:

- Spread databases across multiple disks which will increase the **Blocks in database buffers** (-B parameter).
- Add more disks.
- Request that your system administrator invest in faster disks.

**Notes**

- Adding more disks to a system increases overall disk I/O because reads and writes can span across multiple disks. However, the performance results depend on how the multiple disks are grouped and how you structure your databases.
- For information on how your OpenEdge databases affect disk I/O, view the following OpenEdge VSTs:
  - _ActBuffer._Buffer-OSRds — Displays information about the number of database block reads from disk
  - _ActBuffer._Buffer-OSWrts — Displays information about the number of database block writes to disk
  - _ActIOType — Displays information about types of input/output activity, such as database reads and writes, BI and AI reads, total reads, BI and AI writes, and committed transactions
  - _ActIOFile — Displays information about input/output activity, including the number of reads, writes, and extends for each file
**DiskNotFound**

**Message**  
“Cannot obtain information about the disk resource.”

**Description**  
Sent when the disk monitor fails to obtain valid query information for the disk resource.

**Type**  
Asynchronous

**Action**  
Because the disk monitor cannot locate the underlying disk resource, the disk monitor is unable to obtain information about the disk usage. This might be related to a problem with the disk itself or with the machine-specific library used to monitor the system resources.

Check the AdminServer log file (admserv.log) to see if the osmetrics shared library has logged errors while initializing or during operation.

**ExcessiveFileGrowth**

**Message**  
“The file is growing faster than the specified rate.” file: + filename.

**Description**  
Sent when the growth rate specified on the File Growth Rate rule has been exceeded.

**Type**  
Polled

**FathomTrendingUnavailable**

**Message**  
“Fathom cannot reach the trend database at machine name:port number. Check the log file for more information.”

**Description**  
Sent when OpenEdge Management cannot reach the defined trend database at the specified HTTP port.

**Type**  
Asynchronous

**Action**  
Check the AdminServer log (admserv.log) file on the specified machine for more information. Use the note information below for starting points.

**Note:**  
This alert triggers if:

- OpenEdge Management is not running on the trending database’s machine.
- The specified location does not have a local trend database defined.
- The trend database is not running at the specified location.
- There is a communication problem between machines.
Chapter 3: Alerts Reference

FileDoesNotExist

Message  "The file does not exist."
Description  Sent when the file resource monitor cannot find the file specified as a file size resource.
Type  Polled
Action  Check the file size resource's path. If the path is correct but the file is missing, restore the file from backup.

FileExists

Message  "The specified file exists. File: x."
Description  Sent when a user specifies that a file monitor alert should be used to indicate that a file exists.
Type  Polled

FileSizeEqual

Message  "The file size is equal to the specified size. Actual size: x, Specified Size: x."
Description  Sent when the file size monitor detects that a file's size is equal to its configured value.
Type  Polled
Action  Take necessary remedial actions to correct the file size.

FileIsDirectory

Message  "The file specified is a directory."
Description  Sent when the file specified for a file resource is a directory.
Type  Polled
Note  The size of a directory is reported as zero-length. Because of this, the file resource monitor treats the directory’s status as passed, regardless of the type of comparison specified in the monitor’s rules.

FileModified

Message  "The file was modified." file:filename
Description  Sent when the file has been modified and the File Modified rule has been configured.
Type  Polled
**FileSizeExceeded**

**Message**  

**Description**  
Sent when a file size monitor detects that the file exceeded its configured size.

**Type**  
Polled

**Action**  
Take any necessary actions to correct the file size, such as truncating the file.

---

**FileSizeLow**

**Message**  
“The file size is less than the specified size. Actual Size: *x*, Specified Size: *y*.”

**Description**  
Sent when the file size monitor detects that a file is less than its specified size.

**Type**  
Polled

**Action**  
Take necessary remedial actions to correct the file size.

---

**FileSizeNotEqual**

**Message**  
“The file size does not equal the specified size. Actual Size: *x*, Specified Size: *y*.”

**Description**  
Sent when a file size resource fails because its size does not equal its configured size.

**Type**  
Polled

**Action**  
Take necessary remedial actions to correct the file size.

---

**FileStale**

**Message**  
“The file is older than the age specified. file:*filename*.”

**Description**  
Sent when the file age specified by the File Age Rule has been exceeded.

**Type**  
Polled
Chapter 3: Alerts Reference

**FileSystemNotFound**

**Message**  “Cannot obtain information about the file system resource.”

**Description**  Sent when the file system monitor fails to obtain valid query information for the file system resource.

**Type**  Asynchronous

**Action**  Because the file system monitor cannot locate the underlying file system resource, the file system monitor is unable to obtain information about file system usage. This might be related to a problem with the file system itself or with the machine-specific library used to monitor the system resources.

Check the AdminServer log (_admserv.log_) to see if the osmetrics shared library has logged errors while initializing or during operation.

**FileSystemUsedThresholdExceeded**

**Message**  “FileSystem Used Threshold Exceeded! Value: x, Threshold: y.”

**Description**  Sent when a file system’s configured threshold is exceeded.

**Type**  Polled

**Action**  Free up space on the file system by deleting unnecessary files; create a multivolume database, or update existing multivolume databases.

**Notes**
- OpenEdge Management gathers file system information primarily for trend analysis. The FileSystemUsedThresholdExceeded alert can help you prevent trouble caused by lack of disk space.
- The RDBMS VST _AreaStatus displays data about the status of areas. Use the information in the _AreaStatus VST, along with the file system information trended by OpenEdge Management, to predict when it is time to extend or redesign your database. Viewing the information in your database’s _AreaExtents record can also help track database file growth.

**HTTPDownloadFailure**

**Message**  “OpenEdge Management failed to retrieve the specified Web page. URL: The URL of the page Fathom attempted to download, HTTP Response Code: The response code reported by the Web server.”

**Description**  Sent when OpenEdge Management cannot download the URL provided to an HTTP monitor.

**Type**  Polled

**Action**  The reason why the attempted download failed is given in the response code. Refer to RFC 2616 for information about specific values.
HTTPRedirect

**Message**
“The monitored page was redirected. Monitored URL: the URL being monitored by Fathom, Retrieved URL: the URL actually downloaded by Fathom.”

**Description**
Sent when the URL provided to an HTTP monitor is redirected to another location, and you have chosen to alert on this condition.

**Type**
Polled

InvalidProgressVersion

**Message**
“OpenEdge Management is bound to an unsupported Progress version or patch level. Current Progress Version: version string, Minimum Required Progress Version or Patch Level: version string.”

**Description**
Sent when OpenEdge Management detects that the OpenEdge version is unsupported or not at the right patch level.

**Type**
Asynchronous

**Action**
Update to the identified OpenEdge version or patch level.

JobStartFailure

**Message**
“Unable to execute the job as an action. Job: x.”

**Description**
Sent when a job that was specified as the alert action for a resource does not execute.

**Type**
Asynchronous

**Action**
Check the log file for additional information regarding the failure of the job.

LatchWaitCountHigh

**Message**
“Latch waits for latch latchname are n. The current threshold is threshold.”

**Description**
Sent when the number of latch counts is above the threshold.

**Type**
Polled

**Action**
Review which users are accessing and using the latches. Review the -spin setting for the database.

**Note**
These details reflect a per-latch basis. There are 31 latches for a database. There can be more than one latch for this rule, and each latch should be a separate rule that must be evaluated.
Chapter 3: Alerts Reference

LogActionWriteError

Message  "There was a problem writing to the log file. Check that the directory exists and the file is writable. File: the file to which the action is attempting to write."

Description  Sent if a log action cannot write to the indicated file.

Type  Asynchronous

Action  Check to make sure that the directory exists and that the file has write permissions.

LogFileIOException

Message  "The Log File Monitor could not open or write to the name of log file being monitored."

Description  Sent when the log file monitor encounters an input/output exception with the file specified in the Filename Input parameter.

Type  Synchronous

Action  Check the file’s permissions to make sure that the AdminServer’s rights match the file’s rights; if they do not, the monitor will not be able to open it. Also check the directory’s permissions.

Note  This alert fires when the log file monitor has trouble opening the file or has permissions problems. An interruption in I/O stream can also trigger this alert.

LogFileNotFound

Message  "Name of monitored file was not found."

Description  Sent when the log file monitor cannot find the file specified in the Filename Input parameter.

Type  Synchronous

Action  Make sure the file exists in the specified directory.

Note  This alert is generated only when the log file monitor cannot find the file, not when the file is found but cannot be opened.
**MalformedPattern**

**Message**
“The Log File Monitor could not understand the regular expression syntax given in one of its Search Criteria. Pattern and name of Search Criteria in which the error occurred.”

**Description**
Sent when the log file monitor encounters an error with the Search Text listed in its Search Criteria.

**Type**
Synchronous

**Action**
Make sure the syntax given in the **Search Text** field is valid Perl 5 regular expression syntax.

**See Also**
OpenEdge Management: Resource Monitoring for details about valid Perl 5 regular expression syntax.

**MalformedURL**

**Message**
“The defined URL monitor has a malformed, or incorrect, URL in its definition. The URL should be changed to reflect a valid URL.”

**Description**
The URL for the HTTP resource is malformed.

**Type**
Polled

**MemoryNotFound**

**Message**
“Cannot obtain information about the memory resource.”

**Description**
Sent when the memory resource monitor fails to obtain valid query information for the memory resource.

**Type**
Asynchronous

**Action**
Because the memory monitor cannot locate the underlying memory resource, the memory monitor is unable to obtain information about the memory usage. This might be related to a problem with one or more memory boards on the machine or with the machine-specific library used to monitor the system resources.

Check the AdminServer log file (**admserv.log**) to see if the osmetrics shared library has logged errors while initializing or during operation.

**MS_BrokerAbnormalShutdown**

**Message**
“MSS DataServer broker shut down abnormally. Broker: name.”

**Description**
Sent when a Microsoft SQL Server broker shut down abnormally (crashed).

**Type**
Asynchronous

**Action**
View the appropriate log file for further information.
**MS_BrokerNormalShutdown**

**Message**
“MSS DataServer broker shutdown normally. Broker: name.”

**Description**
Sent when a Microsoft SQL Server broker shuts down normally.

**Type**
Asynchronous

**MS_BrokerStartUp**

**Message**
“MSS DataServer broker started up. Broker: name.”

**Description**
Sent when a Microsoft SQL Server broker starts up.

**Type**
Asynchronous
MQA_BrokerAbnormalShutdown

Message “SonicMQ Adapter broker shut down abnormally. Broker: name.”
Description Sent when a SonicMQ Adapter broker shut down abnormally (crashed).
Type Asynchronous
Action View the appropriate log file for further information.

MQA_BrokerNormalShutdown

Message “SonicMQ Adapter broker shutdown normally. Broker: name.”
Description Sent when a SonicMQ Adapter broker shuts down normally.
Type Asynchronous

MQA_BrokerStartUp

Message “SonicMQ Adapter broker started up. Broker: name.”
Description Sent when a SonicMQ Adapter broker starts up.
Type Asynchronous

NetworkResourceFailure

Message “The network resource failed to respond.”
Description Sent when a network resource fails to respond.
Type Asynchronous
Action Verify that the service on the monitored machine is running.
Note If the resource being monitored is a TCP or UDP port, this alert indicates only that the port cannot be accessed, not that the machine on which the port exists is unavailable. This alert is never generated for an ICMP monitor, as ICMP monitors do not use ports.

NetworkResourceTardy

Message “The tardy threshold has been exceeded. A response time that is greater than the tardy threshold, but less than the timeout threshold will result in the resource status being reported as tardy.”
Description Sent when the network resource response time exceeded the tardy threshold.
Type Polled
NetworkResourceTimeout

Message  “The timeout threshold has been exceeded. Response: resource response time ms, Threshold: timeout threshold ms.”

Description  Sent when the network resource response time exceeded the timeout threshold.

Type  Polled

NetworkResourceUnreachable

Message  “The network resource is unreachable.”

Description  Sent when the network resource cannot be reached, such as after attempts to ping the resource were unsuccessful.

Type  Asynchronous

Action  Check the network connection on the machine you want to access, as well as the machine that OpenEdge Management is on. If the network connections appear fine, contact your network administrator.

NoContentInPage

Message  “The HTML page could not be searched because no content was retrieved.”

Description  Sent when the HTTP monitor could not download the Web page for the resource, presenting a situation for which there would be no content available to search.

Type  Polled

NoSearchCriteria

Message  “The Log File Monitor does not have any Search Criteria associated with it.”

Description  Sent when the log file monitor does not have any search criteria associated with it.

Type  Synchronous

Action  Edit the Log File Monitor, making sure to define search criteria.

Note  The Log File Monitor must have at least one search criterion associated with it.

NS_AbnormalShutdown

Message  “The NameServer shutdown abnormally. NameServer: name, Port: port.”

Description  The NameServer shut down abnormally.

Type  Asynchronous

Action  Examine the NameServer, broker, and AdminServer log files for any additional information to assist you in determining why the NameServer shut down in this manner.
**NS_ApplicationServiceNotFound**

**Message**  
“Application Service requested by client not found. Application Service: name, Client host: host, Port: port.”

**Description**  
Sent when there are no AppServers registered at the NameServer for the Application Service requested by a client.

**Type**  
Asynchronous

**Action**  
If the Application Service requested is valid, examine the NameServer and Broker log files to determine why a broker is not registered for the requested AppService.

**NS_BrokerRegistrationFailure**

**Message**  

**Description**  
The identified Broker was not registered for the requested Application Service. The named Application Service already has a broker registered for it, and the Load Balancing option is not installed.

**Type**  
Asynchronous

**Action**  
See if the broker’s list of supported Application Services conflicts with that of other brokers. Consider installing the load balancing option.

**NS_BrokerTimeout**

**Message**  
“The registered broker is not responding. The broker will not be registered. Broker: name.”

**Description**  
Sent when a registered broker is not responding.

**Type**  
Asynchronous

**Action**  
Examine the broker’s log file for any additional information to assist in determining why the broker is not responding.

**NS_ClientRequestRejected**

**Message**  
“The client request was rejected due to an incorrect message header, or wrong version information in the client message. Client host: name, Port: port.”

**Description**  
The NameServer received a request with bad header information. The header information was incorrect, or the protocol version field within the header contained an unsupported version identifier.

**Type**  
Asynchronous

**Action**  
Determine if the request came from a legitimate NameServer client. If the client is an OpenEdge-based client, ensure that the NameServer version is recent enough to support the version of the client.
NS_DuplicateBrokerUUID


Description  Sent when a broker attempts to register with the NameServer using a UUID that has already been registered by another broker.

Type  Asynchronous

Action  Examine the ubroker.properties file for duplicated UUID specifications.

NS_NameServerReregisteredBroker

Message  “The NameServer has reregistered the broker for consistency. Broker: name, Host: host, Port: port, UUID: uuid.”

Description  The NameServer detected that the broker has been restarted without the NameServer receiving an unregistered request, or having timed out the broker. To ensure that the values associated with the broker are the latest values, the NameServer has unregistered and reregistered the broker.

Type  Asynchronous

Action  Determine how the broker is being shut down and why it is not sending an unregistered message to the NameServer. Consider if the timeout that the NameServer is using for the brokers is too long, preventing the NameServer from detecting that a broker is no longer responding.

NS_NormalShutdown

Message  “The NameServer shutdown normally. NameServer: name, Port: port.”

Description  The NameServer shut down normally.

Type  Asynchronous

NS_Startup

Message  “The NameServer has been started. NameServer: name, Port: port.”

Description  The NameServer has been started.

Type  Asynchronous
**OD_BrokerAbnormalShutdown**

**Message**
"ODBC DataServer broker shut down abnormally. Broker: name."

**Description**
Sent when an ODBC DataServer broker shut down abnormally (crashed).

**Type**
Asynchronous

**Action**
View the appropriate log file for further information.

**OD_BrokerNormalShutdown**

**Message**
"ODBC DataServer broker shutdown normally. Broker: name."

**Description**
Sent when an ODBC DataServer broker shuts down normally.

**Type**
Asynchronous

**OD_BrokerStartup**

**Message**
"ODBC DataServer broker started up. Broker: name."

**Description**
Sent when an ODBC DataServer broker starts up.

**Type**
Asynchronous

**OR_BrokerAbnormalShutdown**

**Message**
"Oracle DataServer broker shut down abnormally. Broker: name."

**Description**
Sent when an Oracle DataServer broker shut down abnormally (crashed).

**Type**
Asynchronous

**Action**
View the appropriate log file for further information.

**OR_BrokerNormalShutdown**

**Message**
"Oracle DataServer broker shut down normally. Broker: name."

**Description**
Sent when an Oracle DataServer broker shuts down normally.

**Type**
Asynchronous
Chapter 3: Alerts Reference

**OR_BrokerStartup**

**Message**  
“Oracle DataServer broker started up. Broker: name.”

**Description**  
Sent when an Oracle DataServer broker starts up.

**Type**  
Asynchronous

**PageContentChanged**

**Message**  
“The hash code comparison failed on the content retrieved for the URL. URL: The URL for which a hash comparison was made.”

**Description**  
Sent if the hash code generated for downloaded Web page content did not match the baseline hash code created on the first poll. This indicates that content that should have been static has changed.

**Type**  
Polled

**ProcessCPUBusyThresholdExceeded**

**Message**  
“Process CPU Busy Threshold Exceeded! Value: %s, Threshold: %s.”

**Description**  
Sent when the percentage of CPU usage being consumed by this process exceeds the set threshold.

**Type**  
Polled

**ProcessPhysicalMemoryThresholdExceeded**

**Message**  
“Process Physical Memory Used Threshold Exceeded! Value: %s, Threshold: %s.”

**Description**  
Sent when the amount of physical memory being consumed by this process exceeds the set threshold.

**Type**  
Polled

**ProcessVirtualMemoryThresholdExceeded**

**Message**  
“Process Virtual Memory Used Threshold Exceeded! Value: %s, Threshold: %s.”

**Description**  
Sent when the amount of virtual memory being consumed by this process exceeds the set threshold.

**Type**  
Polled
ProjectCreated

**Message**  “Fathom project file not found, new project created.”

**Description**  Sent when OpenEdge Management starts and cannot find the OpenEdge Management project file (fathom.xml).

**Type**  Asynchronous

ProjectLoadFailed

**Message**  “Fathom project file could not be loaded. Project file renamed and new project created. Old project file: filename.”

**Description**  Sent when an existing OpenEdge Management project file cannot be loaded at OpenEdge Management start time. The existing OpenEdge Management project file is renamed and a default project file is created.

**Type**  Asynchronous

ProjectNoRead

**Message**  “Fathom project file cannot be read.”

**Description**  Sent when OpenEdge Management starts and cannot read the OpenEdge Management project file (fathom.xml).

**Type**  Asynchronous

**Action**  Check the protections on fathom.xml to make sure Read access is available.

ProjectUpgraded

**Message**  “Fathom project file upgraded for compatibility with current Fathom version.”

**Description**  The OpenEdge Management project file was created with an earlier version of OpenEdge Management, and the file has been upgraded for use with the current version of OpenEdge Management. The file is no longer usable by earlier versions of OpenEdge Management.

**Type**  Asynchronous

ProjectVersionLater

**Message**  “Fathom project file version is later than the current Fathom version.”

**Description**  Sent when an attempt has been made to load an OpenEdge Management project file (fathom.xml) created with a newer version of OpenEdge Management, and the file cannot be loaded by the current version of OpenEdge Management.

**Type**  Asynchronous
Chapter 3: Alerts Reference

ReportRunFailed

This section identifies the specific message-related text that can appear, indicating a report run has failed. Scan the messages presented in this section to find the one matching the message you received.

To obtain more details related to a report instance for which any ReportRunFailed alert appears:

1. Click Reports. Then choose Defined Reports in the list frame.
2. Select the report instance name in the list frame and display the report definition in the edit mode in the detail frame.
3. Select the Generate debug log file option, resubmit, and rerun the report. It is possible that more log files will display. You can use this data to further investigate your problem.

For more information about reports, see OpenEdge Management: Reporting.

Message

“Output directory not created: <output directory>.”

Description

The report engine could not create the necessary directories to store the report output. Check the file system for privileges.

Action

Check the file system for privileges.

Message

“4GL execution error, exit code <return code>. See log files.”

Description

The report did not run to completion because of an ABL issue. See the Report Output file (report.out) and the AdminServer log file (admserv.log) for more information.

Action

See the report output log files.

Message

“Graphing request xml file does not exist.”

Description

The report failed to complete because there was a problem creating a graph for the report. The _graph.xml file is missing from the report output.

Action

See the log files.

Message

“Report output xml does not exist.”

Description

The report failed to complete because the _data.xml file was not created.

Action

See the log files.
| Message | “Error writing output file for report. See log files.” |
| Description | There was an I/O error when generating the output file for the report. |
| Action | See the log files. |

| Message | “Transformation error. See log files.” |
| Description | The report engine uses XSLT to create the various output formats from the _data.xml. There was an error transforming the XML file to one of the desired output formats. |
| Action | See the log files. |

| Message | “Transformation error for HTML output. See log files.” |
| Description | There was an error transforming the data XML file into HTML output using XSLT. |
| Action | See the log files. |

| Message | “Transformation error for text output. See log files.” |
| Description | There was an error using XSLT to transform the data XML file into text output. |
| Action | See the log files. |

| Message | “SAX parsing error. See log files.” |
| Description | The report failed due to an error parsing an XML file. See the Report Output file (report.out) and the AdminServer log file (admserv.log) for more information. |
| Action | See the Report Output file (report.out) and AdminServer log file (admserv.log) for more information. |

<p>| Message | “Graphing error. See log files.” |
| Description | The report failed because the graphing engine had an error producing a graph for the report. See the report output and AdminServer log files (admserv.log) for more information regarding the error. |
| Type | Asynchronous |
| Action | See the Report Output file (report.out) and AdminServer log file (admserv.log). |</p>
<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>“XSL stylesheet not found: &lt;filename&gt;.”</td>
<td>The report failed because it could not find the specified XSL stylesheet to use in transforming the data XML to another output form.</td>
<td>Ensure that the stylesheet is available in the following subdirectory location: <code>OpenEdgeManagement-install-dir/web/report/xsl</code>.</td>
</tr>
<tr>
<td>“Report transformation ran out of memory.”</td>
<td>The reports use XSL transformations to generate the HTML and text output formats from the XML output that ABL creates. The XML file was too large for the report engine to transform the file, thus the engine ran out of memory. If the report period and/or report format was modified so there is less data in the XML file, the report output will be smaller and the engine will more likely be able to process the file in the amount of memory allotted.</td>
<td>Try reducing the number of columns or rows in the report output by changing the report period or report format.</td>
</tr>
<tr>
<td>“The referenced resource, x, does not exist and is referenced by x.”</td>
<td>The project file contains a reference to a resource that does not exist.</td>
<td></td>
</tr>
<tr>
<td>Asynchronous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Run queue for CPU is n. The current threshold is threshold.”</td>
<td>Sent to identify the number of processes waiting to use the CPU.</td>
<td>Review what processes are using the CPU. Verify that there is not a runaway process on the system.</td>
</tr>
<tr>
<td>Polled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“The search pattern was found in the Web page.”</td>
<td>Sent if the HTTP monitor located the specified pattern in the downloaded Web page and you have chosen to receive alerts when the pattern is found.</td>
<td>Polled</td>
</tr>
</tbody>
</table>
SearchPatternNotFound

**Message**  
“The search pattern was not found in the Web page.”

**Description**  
Sent if the HTTP monitor could not locate the specified pattern in the downloaded Web page and you have chosen to receive alerts when the pattern is not found.

**Type**  
Polled

SystemMemoryUsedThresholdExceeded

**Message**  
“System Memory Used Threshold Exceeded! Value: x, Threshold: y.”

**Description**  
Sent when the system memory’s configured threshold is exceeded.

**Type**  
Polled

**Action**  
Reduce memory usage by reducing the number of running processes. If necessary, request additional memory from your system administrator.

TaskInQueueFailure

**Message**  
“Unable to schedule task x, already in work queue, exception message y.”

**Description**  
Sent when an instance of a report or job is already running when OpenEdge Management attempts to schedule it.

**Type**  
Asynchronous

TaskExecFailure

**Message**  
“Call to tskExec. exec failed for task: x.”

**Description**  
Sent when OpenEdge Management encounters a failure when trying to access the OpenEdge Management Trend Database resource.

**Type**  
Asynchronous

TaskLocalDBAssocError

**Message**  
“Unable to associate local FathomTrendDatabase with task type: task name.”

**Description**  
Sent when OpenEdge Management encounters a failure when trying to access the local OpenEdge Management Trend Database resource.

**Type**  
Asynchronous
TaskQueueFull

**Message**  
“Unable to schedule task because the work queue is full. Task: `taskname`. Exception message: `exceptionmsg`.”

**Description**  
OpenEdge Management encountered a failure when it attempted to schedule a job or report to run; the work queue is full.

**Type**  
Asynchronous

TaskRemoteDBAssocError

**Message**  
“Unable to associate remote FathomTrendDatabase with `task type: task name`.”

**Description**  
Sent when OpenEdge Management encounters a failure when trying to access the remote OpenEdge Management Trend Database resource.

**Type**  
Asynchronous

TaskRunError

**Message**  
“Failed to run task `x`, exception message `y`.”

**Description**  
Sent when OpenEdge Management encounters a failure when trying to run a job or report.

**Type**  
Asynchronous

TaskStderrListenerFailed

**Message**  
“Unexpected exception starting stderr listener thread in task `x`, exception message `y`.”

**Description**  
Sent when a job, configured to throw an alert if its execution exceeds a predefined time period, does not finish before the timer expires.

**Type**  
Asynchronous

TaskStdinReadFailed

**Message**  
“Unexpected exception reading input from task `x`, exception message `y`.”

**Description**  
Sent when OpenEdge Management failed to read the output of a job or report.

**Type**  
Asynchronous
### TaskWaitFailure

**Message**  
“Unexpected exception waiting for task x to complete, exception message y.”

**Description**  
Sent when OpenEdge Management encounters a failure when waiting for a job or report to complete.

**Type**  
Asynchronous

### TemplateNotLoaded

**Message**  
“Error occurred loading one or more Fathom template files. Not all default resources have been created. See the Fathom log file for detailed information on the import actions that were attempted.”

**Description**  
When OpenEdge Management creates a new project file or upgrades an existing project to the latest revision level, it populates the project with a set of default resources. These resources are imported from the templates in the OpenEdge Management template directory.

This error indicates that one or more template files were not imported. Check the AdminServer log file \( \text{admserv.log} \) for more information. The OpenEdge Management import facility can be used interactively to import template files.

**Type**  
Asynchronous

**Action**  
Check the AdminServer log file \( \text{admserv.log} \) for more information. Note that you can use the Import facility interactively to import template files. See the sections on importing and exporting in *OpenEdge Management: Resource Monitoring.*

### TimerExpired

**Message**  
“\( \text{job name} \) failed to complete in timeunits: timescale.”

**Description**  
Sent when a job has been configured to throw an alert if its execution exceeds a predefined time period (in minutes or hours), and the timer has expired before the job finished.

**Type**  
Polled

### VirtualMemoryUsedThresholdExceeded

**Message**  
“Virtual Memory Used Threshold Exceeded! Value: \( x \), Threshold: \( y \).”

**Description**  
Sent when the virtual memory’s configured threshold for memory used is exceeded.

**Type**  
Polled

**Action**  
Reduce memory usage by reducing the number of running processes. If necessary, request additional memory from your system administrator.

**Note**  
View the OpenEdge VST _Startup, as it displays information about startup parameters that influence initial memory consumption. Values for AI Buffers, BI Buffers, Buffer Cache, and Lock Table size are related to shared memory.
**WS_AgentAdded**

**Message**  
“WebSpeed broker added agent(s). Broker: name, Number of agents added: num.”

**Description**  
Sent when the WebSpeed agents have been added to the pool of available agents.

**Type**  
Asynchronous

---

**WS_AgentKilled**

**Message**  
One of two messages can display for this alert:

- “Agent killed. Agent PID: PID.”
- “Agent cannot be killed at this time. Agent PID: PID.”

**Description**  
Sent when a user manually destroys an agent or agents. Typically a user initiates an agent kill action when agents hang under a connecting status for a long time.

**Action**  
If the kill request cannot be processed, check the log file.

**Type**  
Asynchronous

**See Also**  
OpenEdge Management: Servers, DataServers, Messengers, and Adapters

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**WS_AgentTrimmed**

**Message**  
“WebSpeed broker trimmed agent(s). Broker: name, Number of agents trimmed: num.”

**Description**  
Sent when WebSpeed agents have been trimmed from the pool of available agents.

**Type**  
Asynchronous

**See Also**  
OpenEdge Management: Servers, DataServers, Messengers, and Adapters

---

**WS_AgentUnavailable**

**Message**  
“Agent has been unavailable state for more than the specified number of polls. Threshold: threshold, Number of polls: number of polls, PID: process ID.”

**Description**  
Sent when an agent has been unavailable for more than the specified number of polls.

**Type**  
Polled

**Action**  
Check the AdminServer log file (admserv.log) for further information about AgentUnavailableTimeout.
**WS_AverageProcedureDurationHigh**

**Message**
“The average execution time of a procedure has exceeded the threshold. Threshold: \textit{threshold} Current Value: \textit{Current value} Procedure: \textit{Procedure name}.”

**Description**
The average time spent executing a procedure during the polling interval exceeded the threshold. This situation could indicate a bottleneck in the application or other unforeseen events that inhibit the offending procedure from executing as quickly as expected.

**Type**
Polled

**See Also**
OpenEdge Management: Servers, DataServers, Messengers, and Adapters

**WS_BrokerAbnormalShutdown**

**Message**
“WebSpeed broker shut down abnormally. Broker: \textit{name}.”

**Description**
Sent when a WebSpeed broker shut down abnormally (crashed).

**Type**
Asynchronous

**Action**
View the appropriate log file for further information.

**WS_BrokerNormalShutdown**

**Message**
“WebSpeed broker shut down normally. Broker: \textit{name}.”

**Description**
Sent when a WebSpeed broker shuts down normally.

**Type**
Asynchronous

**WS_BrokerStartup**

**Message**
“WebSpeed broker started normally. Broker: \textit{name}.”

**Description**
Sent when a WebSpeed broker starts up.

**Type**
Asynchronous

**WS_NameServerUnavailable**

**Message**
“WebSpeed broker failed to reach the NameServer. Broker: \textit{name}, NameServer: \textit{NSname}.”

**Description**
Sent when a WebSpeed broker failed to contact the NameServer.

**Type**
Asynchronous

**Action**
Check the AdminServer log file (~\texttt{admserv.log}) for more information about NameServer unavailable.
Chapter 3: Alerts Reference

WS_QueueRequestPercentHigh

Message  
“The percent of queued requests has exceeded the threshold. Current Value: value, Threshold: threshold, Broker: brokername.”

Description  
The percentage of requests queued during the polling interval exceeded the threshold. This situation could indicate bottlenecks or other unforeseen events that are slowing down request processing.

Action  
Check the AdminServer log file (admserv.log) for more information about Request Queue Depth High.

Type  
Polled

See Also  
OpenEdge Management: Servers, DataServers, Messengers, and Adapters

WS_RejectedRequestPercentHigh

Message  
“The percentage of rejected requests has exceeded the threshold. Current Value: Current value Threshold: threshold.”

Description  
The percentage of client requests rejected during the polling interval exceeded the threshold. This situation could indicate bottlenecks or tuning problems that prevent client requests from being serviced.

Type  
Polled

See Also  
OpenEdge Management: Servers, DataServers, Messengers, and Adapters

WSA_StartUp

Message  
“Web Services Adapter broker started up. Broker: name.”

Description  
Sent when a Web Services Adapter broker starts up. This is actually a polled alert. On every poll interval (as defined in the monitoring plans), WSA status is checked. If a change in status is detected (Not Running to Running or vice versa), the WSA alert is fired.

Type  
Asynchronous

WSA_ShutDown

Message  
“Web Services Adapter broker shut down. Broker: name.”

Description  
Sent when a Web Services Adapter broker shuts down. This is actually a polled alert. On every poll interval (as defined in the monitoring plans), WSA status is checked. If a change in status is detected (Running to Not Running or vice versa), the WSA alert is fired.

Type  
Asynchronous
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OVERVIEW
========

This package contains C software to implement JPEG image compression and decompression. JPEG (pronounced "jay-peg") is a standardized compression method for full-color and gray-scale images. JPEG is intended for compressing "real-world" scenes; line drawings, cartoons and other non-realistic images are not its strong suit. JPEG is lossy, meaning that the output image is not exactly identical to the input image. Hence you must not use JPEG if you have to have identical output bits. However, on typical photographic images, very good compression levels can be obtained with no visible change, and remarkably high compression levels are possible if you can tolerate a low-quality image. For more details, see the references, or just experiment with various compression settings. This software implements JPEG baseline, extended-sequential, and progressive compression processes. Provision is made for supporting all variants of these processes, although some uncommon parameter settings aren't implemented yet.

For legal reasons, we are not distributing code for the arithmetic-coding variants of JPEG; see LEGAL ISSUES. We have made no provision for supporting the hierarchical or lossless processes defined in the standard.

We provide a set of library routines for reading and writing JPEG image files, plus two sample applications "cjpeg" and "djpeg", which use the library to perform conversion between JPEG and some other popular image file formats. The library is intended to be reused in other applications.

In order to support file conversion and viewing software, we have included considerable functionality beyond the bare JPEG coding/decoding capability; for example, the color quantization modules are not strictly part of JPEG decoding, but they are essential for output to colormapped file formats or colormapped displays. These extra functions can be compiled out of the library if not required for a particular application. We have also included "jpegtran", a utility for lossless transcoding between different JPEG processes, and "rdjpgcom" and "wrjpgcom", two simple applications for inserting and extracting textual comments in JFIF files.

The emphasis in designing this software has been on achieving portability and flexibility, while also making it fast enough to be useful. In particular, the software is not intended to be read as a tutorial on JPEG. (See the REFERENCES section for introductory material.) Rather, it is intended to be reliable, portable, industrial-strength code. We do not claim to have achieved that goal in every aspect of the software, but we strive for it.
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The Unix configuration script "configure" was produced with GNU Autoconf.

It is copyright by the Free Software Foundation but is freely distributable.

The same holds for its supporting scripts (config.guess, config.sub, ltconfig, ltmain.sh). Another support script, install-sh, is copyright by M.I.T. but is also freely distributable.

It appears that the arithmetic coding option of the JPEG spec is covered by patents owned by IBM, AT&T, and Mitsubishi. Hence arithmetic coding cannot legally be used without obtaining one or more licenses. For this reason, support for arithmetic coding has been removed from the free JPEG software. (Since arithmetic coding provides only a marginal gain over the unpatented Huffman mode, it is unlikely that very many implementations will support it.)

So far as we are aware, there are no patent restrictions on the remaining code.

The IJG distribution formerly included code to read and write GIF files.

To avoid entanglement with the Unisys LZW patent, GIF reading support has been removed altogether, and the GIF writer has been simplified to produce "uncompressed GIFs". This technique does not use the LZW algorithm; the resulting GIF files are larger than usual, but are readable by all standard GIF decoders.

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A "png_get_copyright" function is available, for convenient use in "about" boxes and the like:

    printf("%s",png_get_copyright(NULL));

Also, the PNG logo (in PNG format, of course) is supplied in the files "pngbar.png" and "pngbar.jpg" (88x31) and "pngnow.png" (98x31).

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Glenn Randers-Pehrson
randeg@alum.rpi.edu

September 1, 2001

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zlib 1.1.3 is a general purpose data compression library. All the code is thread safe. The data format used by the zlib library is described by RFCs (Request for Comments) 1950 to 1952 in the files ftp://ds.internic.net/rfc/rfc1950.txt (zlib format), rfc1951.txt (deflate format) and rfc1952.txt (gzip format). These documents are also available in other formats from ftp://ftp.uu.net/graphics/png/documents/zlib/zdoc-index.html

All functions of the compression library are documented in the file zlib.h (volunteer to write man pages welcome, contact jloup@gzip.org). A usage example of the library is
given in the file example.c which also tests that the library is working correctly. Another example is given in the file minigzip.c. The compression library itself is composed of all source files except example.c and minigzip.c.

To compile all files and run the test program, follow the instructions given at the top of Makefile. In short "make test; make install" should work for most machines. For Unix: "configure; make test; make install"

For MSDOS, use one of the special makefiles such as Makefile.msc.

For VMS, use Make_vms.com or descrip.mms.

Questions about zlib should be sent to <zlib@quest.jpl.nasa.gov>, or to Gilles Vollant <info@winimage.com> for the Windows DLL version.

The zlib home page is http://www.cdrom.com/pub/infozip/zlib/

The official zlib ftp site is ftp://ftp.cdrom.com/pub/infozip/zlib/

Before reporting a problem, please check those sites to verify that you have the latest version of zlib; otherwise get the latest version and check whether the problem still exists or not.

Mark Nelson <markn@tiny.com> wrote an article about zlib for the Jan. 1997 issue of Dr. Dobb's Journal; a copy of the article is available in http://web2.airmail.net/markn/articles/zlibtool/zlibtool.htm

The changes made in version 1.1.3 are documented in the file ChangeLog.

The main changes since 1.1.2 are:
- fix "an inflate input buffer bug that shows up on rare but persistent occasions" (Mark)
- fix gzread and gztell for concatenated .gz files (Didier Le Botlan)
- fix gzseek(..., SEEK_SET) in write mode
- fix crc check after a gzeek (Frank Faubert)
- fix miniunzip when the last entry in a zip file is itself a zip file (J Lilge)
- add contrib/asm586 and contrib/asm686 (Brian Raiter)
  See http://www.muppetlabs.com/~breadbox/software/assembly.html
- add support for Delphi 3 in contrib/delphi (Bob Dellaca)
- add support for C++Builder 3 and Delphi 3 in contrib/delphi2 (Davide Moretti)
- do not exit prematurely in untgz if 0 at start of block (Magnus Holmgren)
- use macro EXTERN instead of extern to support DLL for BeOS (Sander Stoks)
- added a FAQ file

plus many changes for portability.
Unsupported third party contributions are provided in directory "contrib". A Java implementation of zlib is available in the Java Development Kit 1.1
http://www.javasoft.com/products/JDK/1.1/docs/api/Package-java.util.zip.html

See the zlib home page http://www.cdrom.com/pub/infozip/zlib/ for details.

A Perl interface to zlib written by Paul Marquess <pmarquess@bfsec.bt.co.uk> is in the CPAN (Comprehensive Perl Archive Network) sites, such as:

A Python interface to zlib written by A.M. Kuchling <amk@magnet.com> is available in Python 1.5 and later versions, see
http://www.python.org/doc/lib/module-zlib.html

A zlib binding for TCL written by Andreas Kupries <a.kupries@westend.com> is available at http://www.westend.com/~kupries/doc/trf/man/man.html

An experimental package to read and write files in .zip format, written on top of zlib by Gilles Vollant <info@winimage.com>, is available at http://www.winimage.com/zLibDll/unzip.html and also in the contrib/minizip directory of zlib.

Notes for some targets:

- To build a Windows DLL version, include in a DLL project zlib.def, zlib.rc and all .c files except example.c and minigzip.c; compile with -DZLIB_DLL

  The zlib DLL support was initially done by Alessandro Iacopetti and is now maintained by Gilles Vollant <info@winimage.com>. Check the zlib DLL home page at
  http://www.winimage.com/zLibDll

  From Visual Basic, you can call the DLL functions which do not take a structure as argument: compress, uncompress and all gz* functions.

  See contrib/visual-basic.txt for more information, or get
  http://www.tcfb.com/dowseware/cmp-z-it.zip

- For 64-bit Irix, deflate.c must be compiled without any optimization. With -O, one libpng test fails. The test works in 32 bit mode (with the -n32 compiler flag). The compiler bug has been reported to SGI.

- zlib doesn't work with gcc 2.6.3 on a DEC 3000/300LX under OSF/1 2.1 it works when compiled with cc.

- on Digital Unix 4.0D (formely OSF/1) on AlphaServer, the cc option -std1 is necessary to get gzprintf working correctly. This is done by configure.

- zlib doesn't work on HP-UX 9.05 with some versions of /bin/cc. It works with other compilers. Use "make test" to check your compiler.

- gzdopen is not supported on RISCOS, BEOS and by some Mac compilers.

- For Turbo C the small model is supported only with reduced performance to avoid any far allocation; it was tested with -DMAX_WBITS=11 -DMAX_MEM_LEVEL=3

- For PalmOs, see http://www.cs.uit.no/~perm/PASTA/pilot/software.html

Per Harald Myrvang <perm@stud.cs.uit.no>

Acknowledgments:
The deflate format used by zlib was defined by Phil Katz. The deflate and zlib specifications were written by L. Peter Deutsch. Thanks to all the people who reported problems and suggested various improvements in zlib; they are too numerous to cite here.

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jloup@gzip.org          madler@alumni.caltech.edu

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