APPENDIX B

# Alert Messages

This appendix identifies the alert messages that Broadband Provisioning Registrar (BPR) generates.

**Note** BPR includes an internal administrative *agent* that monitors the health of critical BPR components, including the DPE and the RDU. The agent is a watchdog process that generates alert messages when specific events take place. This appendix describes those alerts.

# Alert Messages

BPR generates alerts through the UNIX syslog function. The alert function is not a logging service, in other words, it provides a notification that a problem exists, but does not define the specific cause. This information might be found in the appropriate BPR log files.

Syslog is a client server protocol that manages the logging of information on UNIX.

## Message Format

This is the format that BPR generates for all alert messages:

```
XXX-#-###: 121.12.1.203 - RDU can't connect to DPE: 121.12.12.11
```

Where:

- *XXX*—identifies the facility code.
- *#*—identifies the severity level in use. There are two levels of alerts: 3, which is an alert, and 6, which identifies information messages.
- *###*—identifies the mnemonic error code as described in the following sections.

## RDU Server Related Alerts

The agent sends all of the alert messages described in this section.

**1021: Failed to start the RDU with error code *<###>***

Where:

- <*###*>—identifies the error code.

Two factors could cause the generation of this alert.

1. The BPR directory structure (including files) has been altered. If this is the problem, you must re-install BPR.
2. The operating system might have failed to create the new processes. If this is the problem, restart the operating system and, if you need additional help, contact the TAC.

#### 1022: The RDU terminated with signal *<xx>*

Where:

- <*xx*>—identifies the terminating signal.

This alert indicates that an error condition has caused the RDU server to go down. The RDU agent will automatically restart the RDU server and no further action should be action. However, if this alert occurs repeatedly, it may indicate that the operating system is terminating the RDU process. In this case, you should contact the TAC for further information.

#### 1023: The RDU unexpectedly terminated

This alert is identical to that described for 1022, except that the system was unable to gather sufficient detail concerning the root cause of the problem. The RDU agent will automatically restart the RDU server and no further action should be action. However, if this alert occurs repeatedly, you should contact the TAC for further information.

#### 1024: Failed to start the shutdown RDU with error code *<###>*

Where:

- <###>—identifies the error code.

Two factors could cause the generation of this alert.

1. The BPR directory structure (including files) has been altered. If this is the problem you must re-install BPR.
2. The operating system might have failed to create the new processes. If this is the problem, restart the operating system and, if you need additional help, contact the TAC.

#### 1025: The RDU exited with code *<###>*

Where:

- <###>—identifies the error code.

This alert indicates an error condition that caused RDU server to go down. The RDU agent will automatically restart the RDU server and no further action should be action. However, if this alert occurs repeatedly, you should contact the TAC for further information.

# DPE Server Related Alerts

The agent sends all of the alert messages described in this section.

#### 1041: Failed to start the DPE with error code <###>

Where:

- <###>—identifies the error code.

Two factors could cause the generation of this alert.

1. The BPR directory structure (including files) has been altered. If this is the problem, you must re-install BPR.
2. The operating system might have failed to create the new processes. If this is the problem, restart the operating system and, if you need additional help, contact the TAC.

#### 1042: The DPE terminated with signal <xx>

Where:

- <*xx*>—identifies the terminating signal.

This alert indicates an error condition that caused DPE server to go down. The DPE agent will automatically restart the DPE server and no further action should be action. However, if this alert occurs repeatedly, you should contact the TAC for further information.

#### 1043: The DPE unexpectedly terminated

This alert is identical to that described for 1042, except that the system was unable to gather sufficient detail concerning the root cause of the problem. The DPE agent will automatically restart the DPE server and no further action should be action. However, if this alert occurs repeatedly, you should contact the TAC for further information.

#### 1044: Failed to start the shutdown DPE with error code <###>

Where:

- <###>—identifies the error code.

Two factors could cause the generation of this alert.

1. The BPR directory structure (including files) has been altered. If this is the problem, you must re-install BPR.
2. The operating system might have failed to create the new processes. If this is the problem, restart the operating system and, if you need additional help, contact the TAC.

#### 1045: The DPE exited with code <###>

Where:

- <###>—identifies the code.

This alert indicates an error condition that caused DPE server to go down. The DPE agent will automatically restart the DPE server and no further action should be action. However, if this alert occurs repeatedly, you should contact the TAC for further information.

# RDU Alerts

The RDU sends all of the alert messages described in this section.

#### 101: RDU ran out of disk space

This alert indicates that the hard drive running the RDU server has run out of space. You can remove, or compress, some of the log files, and then start the RDU by running the **/etc/init.d/csrcRDUAgent start** command.

This is a short-term solution aimed at restarting the RDU and, after completing it, you should re-evaluate your disk space requirements and upgrade the computer, if necessary, with a new disk.

To upgrade the disk:

**Step 1** Use the RDU agent to stop the RDU.

**Step 2** Verify it has actually stopped.

**Step 3** Copy the rdu/db directory to the new location.

**Step 4** Update the CSRC_DBLOG variable in the /opt/CSCObpr/csrc_definitions.sh script to point to the new location.

**Step 5** Restart the RDU.

#### 103: RDU ran out of memory

This alert tells you that the RDU has run out of memory.

#### 109: DPE cannot connect to RDU

This indicates that the RDU cannot be contacted. You must verify that the DPE network is configured and connected correctly. Also, check that the DPE is configured to connect to the proper RDU, and that the connecting port is configured properly, using the **dpe rdu-server** command. Check that the RDU process is running on the correct server and listening on the proper port. The DPE attempts to reconnect to the RDU every few seconds until a connection is established.

#### 111: Evaluation key for technology *<xx>* expired

Where:

- <*xx*>—identifies the technology corresponding to the expired evaluation license.

This alert appears whenever an evaluation key for the technology specified expires. You must contact Cisco sales or TAC for a new license key.

#### 112: RDU database had an error that required a server restart

This alert indicates that the RDU server has encountered a database error and the RDU server must be restarted. This error can, for example, result from trying to modify the database under the RDU, or by performing a similarly intrusive operation. Because the RDU server is automatically restarted, no further action should be necessary. However, if the database has become corrupted, alert number 114 may appear immediately after this one.

#### 114: RDU server could not open database environment on start-up

This alert generally indicates that either the database has become corrupted or that necessary database log files have been moved. Refer to "Failure Recovery" section on page 5-5 for instructions on recovering the database.

#### 115: You have used (x%) of available (technology) licenses

This alert identifies the quantity of licences used (in percentage) out of the total number of allowable licenses. This alert starts to appear when you reach 80% of the license capacity.

#### 200: RDU publishing error: plug-in not found

This alert indicates that a publishing plug-in was registered but the class files for that plug-in were not found.

#### 202: RDU publishing error: could not connect

This alert indicates that the RDU server could not connect to a remote server. This problem has two possible solutions:

1. Verify that the remote server is operating correctly.
2. Verify that the hostname, port, username, and password settings are correct for the publishing plug-in used.

#### 204: RDU publishing error: rollback error

This alert indicates that the RDU server has encountered an error by trying to rollback a transaction from a remote database server. Rollback errors can result in a remote database falling into a logically inconsistent state. Consult those responsible for creating the publishing plug-in for possible solutions to this problem.

#### 206: RDU publishing error: error from remote server

This alert indicates that a remote server has identified a problem while attempting to publish some data. This error could be the result of a configuration error in the remote database server that is running out of disk space or is experiencing some other type of error. Review the rdu.log file for additional information on the error encountered by the remote server.

## DPE Alerts

The DPE sends all alerts described in this section.

#### 102: DPE ran out of disk space

This alert notifies you that the DPE hard drive is full. There are three different actions you can perform:

1. Clear out any excess support bundles that may reside on the disk. You can do this by moving those support bundles to another machine and then running the **clear bundles** command from the DPE command line interface (CLI).
2. Run the **clear logs** command from the DPE CLI, to clear more disk space.
3. As a last resort, run the **clear cache** command from the appliance CLI. This will remove any cache files and force the DPE to resynchronize with the RDU.

#### 104: DPE ran out of memory

This indicates that the DPE process has run out of memory. Determine how many device configurations are on the DPE; the more device configurations that exist, the more memory is used. The way to reduce device configurations is to limit the number of provisioning groups, either primary or secondary, that the DPE appliance serves.

#### 113: DPE database had an error that required a server restart

This alert notifies you that a DPE database error has occurred. The DPE agent will attempt to restart the process automatically. If this alert appears repeatedly, you should verify that there is sufficient free disk space available and run the **clear cache** command from the DPE CLI.

## Network Registrar Extension Alerts

The Network Registrar server sends all alerts described in this section.

#### 106: Failed to connect to RDU

This alert notifies you that the Network Registrar server is unable to connect to the RDU. You should verify that the rdu process is running and, if it is not already running, start the RDU. If the RDU is running, use the Network Registrar computer to ping the RDU. If you are unable to ping the RDU, fix the routing tables, or other communication parameters, between the two devices. If this alert is frequently repeated, you may have an unstable connection between the two hosts. Use generally accepted network troubleshooting techniques to improve the connectivity between the two hosts.

#### 107: Failed to connect to any DPEs

This alert notifies you that the Network Registrar extension is unable to connect to the DPEs. Check that there are DPEs in the provisioning group for each Network Registrar extension. If not, change the Network Registrar provisioning group to one that has DPEs available. If DPEs are in the provisioning group, ensure that the Network Registrar extension has registered with the RDU, if it hasn't, it will not recognize any of the DPEs. If, after completing the check, the alert continues, check that there is network connectivity between the Network Registrar extension and the DPEs in the provisioning group.

If this alert is frequently repeated, you may have an unstable connection between the two hosts. Use generally accepted network troubleshooting techniques to improve the connectivity between the two hosts.

## Information Messages

The agent sends all of the information messages described in this section. No action is required when these messages are received. However, frequent unattended server restarts may indicate some unexpected server instability. Contact the TAC if this happens.

#### 6021: The RDU has started

This message indicates that the RDU has started and is operating correctly.

#### 6022: The RDU has stopped

This message indicates that the RDU has ceased operation. This could be due to the RDU encountering some sort of difficulty or because of operator instruction.

#### 6041: The DPE has started

This message indicates that the DPE has started and is operating correctly.

#### 6042: The DPE has stopped

This message indicates that the DPE has ceased operation. This could be due to the DPE encountering some sort of difficulty or because of operator instruction.