Oracle® Communications Convergent Charging Controller

Provisioning Interface Alarms Guide

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Contents

Alarm Topic Description

Alarm generation

Alarms on each configured node are written to the syslog and are then captured by the smsAlarmDaemon for entry in the SMF database.

For management of these alarms, refer to *SMS Technical Guide*.

Severity levels

This table describes the alarms severity levels.

Level	Abbr	Description
Critical	C	These alarms are raised when the application has encountered an error which indicates that the system is unable to function.
Error	E	These alarms indicate the application has encountered a serious problem completing a necessary task and could not complete the task.
Warning	W	Warnings are raised to indicate the application encountered a problem completing a non-mission critical task.
Notice	N	Notices are raised to indicate that the application has completed a task successfully.

Alarm format

Alarms usually follow this format:

```
Mon DD 24:MM:SS hostname process name: [ID alarmID user.severity] process(PID)
SEVERITY: Alarm text with possible variables
```

Where:

Variable	Description
Mon DD	Month and date the alarm was logged.
24:MM:SS	Time the alarm was logged in 24 hour format.
hostname	Name of the machine on which the alarm was generated.
process name	Name of the process which logged the alarm.
alarmID	ID number of the alarm.
severity	Alarm severity.
process	Name of the process which logged the alarm.
PID	Process ID of the process which logged the alarm.
SEVERITY	Alarm severity.
Alarm text	Alarm text. This may include variables such as node number. **Note:** In some cases the entire alarm text is generated from variables.

Note: Some alarms from some subsystems may have a different format.

Example: This text shows an smsMaster alarm about pending update queues.

```
Mar 30 13:34:54 prodsmp1 smsMaster: [ID 953149 user.warning] smsMaster(17833)
WARNING: Pending queue now above 15 (Worst Node 317)
```

Alarm text and variables

The %d and %s symbols represent variables within the alarm text. These values are generated by the subsystem and added to the message when the alarm is raised.

Usually the %d is a number and the %s is text in the context of the message to complete the alarm message. Occasionally other % symbols are also used (for example, %u) for different variables.

Further information

For more information about:

- The SMS Alarms subsystem, see *SMS Technical Guide*
- Creating and maintaining the SMS Alarm Relay rule set, see *SMS User's Guide*

PImanager

Errors

This table defines the error messages for PImanager.

Alarm Text	Reason	Remedy
`Cannot connect to Oracle – exiting`	Oracle is not running.	Start Oracle.
`Could not make fifo <f> – exiting`	The file <f> could not be created.	Check that the "smf_oper" user has sufficient permission to create the file. Check that the disk is not full.
`Could not make fifo directory <d> – exiting`	The directory <d> could not be created.	Check that the "smf_oper" user has sufficient permission to create the directory. Check that the disk is not full.
`Error starting PIbeClient`	PIbeClient could not be started.	If PIbeClient should be being started, check PIbeClient exists and is executable. If PIbeClient should not be being started, ensure there is no pi.PIbeClient section in **eserv.config**.
`Error starting PIprocess`	PIprocess could not be started.	Check PIprocess exists and is executable.
`Exception reading configuration pi.general.oraUser: check format e.g. "oraUser = "/" – cannot continue`	The configuration file entry for pi.general.oraUser has syntax errors.	Check the format of **eserv.config**.
`Exception reading configuration pi.general.synstamp: check format e.g. "synstamp = 'N'" – cannot continue`	The configuration file entry for pi.general.synstamp has syntax errors.	Check the format of **eserv.config**.
`Exception reading configuration pi.general.timeout: check format e.g. "timeout = 30" – cannot continue`	The configuration file entry for pi.general.timeout has syntax errors.	Check the format of **eserv.config**.
`Exception reading configuration pi.general.mode: check format e.g. "mode = 0" – cannot continue`	The configuration file entry for pi.general.mode has syntax errors.	Check the format of **eserv.config**.
`no PIprocesses left`	All PIprocesses have stopped so the PImanager has stopped.	Restart the PImanager.

Alarm Text	Reason	Remedy
PIbeClient is dead	PIbeClient has stopped. See the PIbeClient output for more details.	PImanager will attempt to restart the PIbeClient. If this persists, check for additional PIbeClient error messages.
PIprocess for port n is dead	A PIprocess has stopped. See the PIprocess output for more details.	Restart the PImanager.
PIprocess pid <p> on port <n> timed out. Sending friendly timeout signal	A PIprocess has timed out.	A timeout may indicate some problem with the database. Check the database is running correctly.
PIprocess pid <p> on port <n> timed out and not responding. Killing it now.	A PIprocess has timed out and not responded to the time out signal.	A timeout may indicate some problem with the database. Check the database is running correctly.
SQL Error: <message>	An Oracle error occurred.	Consult Oracle documentation for the error code.
SQL error <n> reading PI_PORTS - exiting	An oracle error occurred reading the PI_PORTS table.	Consult Oracle documentation for the error code.
Unknown message type n from PI <p>.	The PIprocess on port <p> has sent an unknown message type to the PImanager.	Check that the PIprocess on port <p> is functioning correctly.

Warnings

This table defines the warning messages for PImanager.

Alarm Text	Reason	Remedy
SQL Warning: <message>	An oracle warning occurred.	Consult oracle documentation for the error code.

Notifications

This table defines the notification messages for PImanager.

Alarm Text	Reason	Remedy
About to turn debug <on|off> for PImanager	Debug has been turned on or off for the specified PImanager.	Information only, no action required.
PImanager started	PImanager has started.	Information only, no action required.
Received SIGHUP – Sending SIGHUP to PIprocesses	PImanager has received a SIGHUP.	Information only, no action required.
Received SIGINT – Sending SIGINT to PIprocesses and exiting	PImanager has received a SIGINT.	Information only, no action required.
Received SIGQUIT – Sending SIGTERM to PIprocesses and exiting	PImanager has received a SIGQUIT.	Information only, no action required.

Alarm Text	Reason	Remedy
`Received SIGTERM - Sending SIGTERM to PIprocesses and exiting`	PImanager has received a SIGTERM.	Information only, no action required.

PIprocess

Error codes - general

This table defines the Error code messages for PI command responses.

Fault Code	Alarm Text	Reason	Remedy
70	`TOO MANY SESSIONS`	The maximum allowed number of connections are already in use.	Check whether the number of active sessions is larger than the allowed sessions set in the **PI Administration** screen. If it is, either: • this message is information only and no action is required, or • increase the number of maximum sessions to accommodate the load. If it is lower than the specified maximum, contact support with details.
71	`LOGON SYNTAX ERROR`	Could not parse logon request. The login attempt had a syntax error.	Check that the login command is formatted correctly. Contact Oracle support with details.
72	`INVALID LOGON - username, password`	Username and/or password are not invalid.	If the username and password should not be recognised by the system, this message is information only, and no action is required. If the username and password should be recognised, either: • correct the details in the **PI Administration** screen, or • contact support with details.

73	INVALID LOGON - user not allowed on this port	User cannot connect to a server running on the particular port used.	If the port where the attempted logon occurred was not intended as a valid port, this message is information only, and no action is required. If the port should accept connections, either: • correct the port number in the PI Administration screen • check that the user is attempting to connect on the correct port, or • contact support with details.
74	INVALID LOGON - host	Not allowed to connect from this host. The host ip address of the machine that is trying to connect to PI may not be defined in the SMF database.	If the host where the attempted logon was from was not intended as a valid host, this message is information only, and no action is required. If the host should be allowed to make connections, either: • correct the host details in the PI Administration screen and restart the PImanager • check that the user is attempting to connect from the correct host, or • contact Oracle support with details.
75	UNKNOWN COMMAND	The command is not recognised. The command is not defined in the PI_COMMANDS database.	Check the defined commands using the **PI Administration** screen. Contact Oracle support with details.
76	USER DOES NOT HAVE SUFFICIENT SECURITY	The user does not have the privilege to run the requested command.	If the user who attempted to run the command was not intended to be able to run it, this message is information only, and no action is required. If the user should be allowed to run this command, either: • correct the details in the PI Administration screen, or • contact support with details.

77	SYNSTAMP NOT FOUND	The command did not have a synstamp when synstamps are required.	Make sure the command is appended with a synstamp.
78	SYNSTAMP NOT VALID	The synstamp appended to the command was not valid.	Check that the synstamp is larger than the last used synstamp.
79	INVALID OR MISSING MAC	The command was not appended by a security MAC when MACs are required.	Make sure the appended MAC is valid and that the correct MAC key is being used.
80	UNKNOWN PARAMETER FOR COMMAND	A parameter found in the command is recognised.	Check that the command's parameters are as defined in the PI_COMMANDS table by using the **PI Administration** screen. Contact Oracle support with details.
81	MISSING PARAMETERS FROM COMMAND	One or more required parameters are missing from the command.	Check that the parameters were provided with the command. Check that the command's required parameters are as defined in the PI_COMMANDS table by using the **PI Administration** screen. Contact Oracle support with details.
83	DUPLICATE PARAMETER	A parameter appeared twice in the command.	Check whether only one parameter was supplied. Contact Oracle support with details.
84	ERROR RUNNING PROCEDURE	The message sent to the Provisioning Interface was valid, but a failure occurred when attempting to run the service.	Check syslog for errors. If the problem persists, contact Oracle support with details.
85	USER SESSION TERMINATED	The server has shut down the session. The user's session has been terminated by an administrator issuing the kill management command.	If the session was not intended to be shut down, and the problem persists, contact Oracle support with details.
86	COMMAND TOO BIG	The supplied command was too big.	Check the syntax of the command.
87	COMMAND SYNTAX ERROR	There is a syntax error in the command.	Check the syntax of the command. Contact Oracle support with details.
88	PARAMETER NAME TOO BIG	A parameter name is too big for the command syntax.	Check the parameter name. Contact Oracle support with details.

89	PARAMETER VALUE TOO BIG	A parameter value is too big for the command syntax.	Check the parameter value. Contact Oracle support with details.
90	SYNSTAMP OUT OF PLACE	The synstamp was in the wrong place in the command.	Check that the synstamp is in the correct place: • When MAC security is ON, the synstamp should be between the last command parameter and the MAC. • When MAC security is OFF, the synstamp should be at the end of the command, after the last command parameter. Contact Oracle support with details.
91	TIMEOUT	A timeout has occurred.	A timeout can indicate problems in the database. If the problem persists and there appears to be no other problems the timeout value can be increased.
92	INTERNAL ERROR SEE SYSLOG	An internal error has occurred. More information is available from the system log.	If the problem persists, contact Oracle support with details.
93	ERROR READING REPLY FROM FILE	The PI could not read the results from a DB query that were saved to a temporary file.	Contact Oracle support with details.
94	INVALID AUTHENTICATION TOKEN	The authentication token passed has expired or no authentication token was supplied.	The session should be re-started.

Errors

This table defines the error messages for PIprocess.

Alarm Text	Reason	Remedy
Cannot connect to internal DB – cannot continue	The PIprocess could not connect to oracle.	Start Oracle. Check that the oracle environment for the smf_oper UNIX user is correct.
Cannot read from internal DB – cannot continue	The PIprocess could not read from the internal DB.	Check that the PI tables are installed correctly on the SMF machine and have at least one port configured.

Alarm Text	Reason	Remedy
Could not create SQL trace file <filename>. All sql tracing will go to PImanager.log. perror for this follows	Could not create a new file.	Check the next reported error which will describe the file error in detail.
Could not make fifo <f>	The fifo file <f> could not be created.	Check that the directory that the file <f> is to be made in is writable by the smf_oper user. Check that the disk is not full.
Could not open fifo <f>	The fifo file <f> could not be opened.	Check that the directory that the file <f> is to be made in is writable by the smf_oper user.
Could not rename SQL trace file <filename a> to <filename b>. SQL tracing will continue to <filename a>. perror for this follows	Could not create a new file.	Check the next reported error which will describe the file error in detail.
Currently got n connections so deferring database re-read until all connections closed	The PIprocess has received an instruction to re-read the internal database. This cannot be done safely with active connections, so will be delayed until all connections are closed	Close all connections to the PI to re-read the database.
Error occurred running C function <f> in shared library <l>. Output is ...	An error occurred while running the command. Check for other errors preceding this error.	Check preceding errors in the PI commands library errors section below.
Error reading request for user <x> on host <h> – logged off	An error occurred reading a command from a remote user. Usually occurs if the user disconnects in the middle of a command. The user is logged off.	The user should re-login.
Exception reading configuration pi.authentication.timeout: check format e.g. "timeout = 0" - cannot continue	The configuration file entry for pi.authentication.timeout has syntax errors.	Check the format of **eserv.config**.
Exception reading configuration pi.general.logLevel: check format e.g. "loglevel = 0" - cannot continue	The configuration file entry for pi.general.logLevel has syntax errors.	Check the format of **eserv.config**.

Alarm Text	Reason	Remedy
`Exception reading configuration pi.general.sqlTraceDirectory: check format e.g. "sqlTraceDirectory = "/IN/service_packages/PI/tmp/trace/" - cannot continue`	The configuration file entry for pi.general.sqlTraceDirectory has syntax errors.	Check the format of **eserv.config**.
`Exception reading configuration pi.localTZ: check the format - cannot continue`	The configuration file entry for pi.localTZ has syntax errors.	Check the format of **eserv.config**.
`Exception reading configuration pi.throttling.sendRate: check the format e.g. "sendRate = 0" - cannot continue`	The configuration file entry for pi.throttling.sendRate has syntax errors.	Check the format of **eserv.config**.
`Exit due to exception: <message>`	An internal error has occurred.	Restart the PI. Consult support if persistent.
`Oracle connection lost - exiting`	The PIprocess connection to the database has been lost. The PIprocess will restart to reconnect to the database cleanly.	Check the logs for related errors. If this occurs persistently, or the PIprocess cannot reconnect, check the oracle database or contact support.
`PPID is 1 - PImanager has died and not killed me - exiting`	The controlling PImanager has stopped or been stopped without firstly stopping the PIprocesses.	Restart the PImanager.
`Problems setting up socket - cannot continue`	The PIprocess could not bind to the port specified in the database, probably due to another process using the port.	Check that the port is not used by another process. Change the port number using the PI Administration screen.
`Security warning. Bad MAC in message from user <x>`	A user has an incorrect mac on a command.	Check the user and system MAC keys are the same.
`Security warning. Bad synstamp in message from user <x>`	A user has used an incorrect synstamp.	The next synstamp must be a number larger than the last synstamp returned from the PIprocess or used by the user.
`Security warning. Connection from unknown host <h>`	A connection has been attempted from a host not listed in the hosts database.	If the host is valid it should be entered into the hosts database using the PI administration screens. Then the PImanager should be sent a SIGHUP signal using the PIreread script to force a database re-read.

Alarm Text	Reason	Remedy
`Security warning. Invalid login attempt (garbage read) from host <h>`	The username/password were not separated by a comma.	Check that the correct format (username,password;) is being used for the login attempt.
`Security warning. Invalid login attempt (user on wrong port) from host <h>`	A user has tried to connect to a port he is not allowed to connect to.	If the user should be allowed to connect to this port, add the port using the PI administration screens, and then send the PImanager a SIGHUP signal using PIreread.sh to force a database reread.
`Security warning. Invalid login attempt (username or password too long) from host <h>`	The username/password combination was too long.	Check that the correct username and password combination is being used.
`Security warning. Invalid login attempt (username, password) from host <h>`	Either the username or the password is not correct.	Check that the correct username and password combination are being used.
`Security warning. User <x> level <n> requested command level <m>.`	A user tried to use a command which has a higher security level than the user's security level.	If the user should be able to use that command, raise the user's security level to at least that command's security level.
`Shared Library <l> not loaded: <error message>.`	The shared library could not be loaded. The error message will give more detailed information.	Reinstall the package or patch. Contact Oracle support with details.
`SQL Error: <message>`	An oracle error occurred.	Consult oracle documentation for the error code.
`Symbol <s> not found is shared library <l>`	The code for the specified command is not in the shared library.	Check that the database entry for the command in PI_COMMANDS is correct.
`Timeout occurred.`	The processing of the command timed out.	A timeout can indicate problems with the database or billing engine client resulting in long query times.

Warnings

This table defines the warning messages for PIprocess.

Alarm Text	Reason	Remedy
`Warning: fifos to PImanager not opened.`	The communication files to PImanager were not found or could not be opened.	Check that the files (in /tmp/PIfifo) exist and are read and writable by the smf_oper user.

Notifications

This table defines the notification messages for PIprocess.

Alarm Text	Reason	Remedy
About to start PIprocess	PImanager has attempted to start a PIprocess.	Information only, no action required.
About to turn debug <on|off> for <command>	Debug has been turned on or off for the specified PI command.	Information only, no action required.
About to turn debug <on|off> for PIbeClient	Debug has been turned on or off for the specified PIbeClient.	Information only, no action required.
About to turn debug <on|off> for PIprocess port <p>	Debug has been turned on or off for the specified PIprocess.	Information only, no action required.
Debug turned [on|off] by PIprocess <n>	PImanager debug has been toggled by a PIprocess	Information only, no action required.
PIprocess started	PIprocess has started.	Information only, no action required.
Received SIGALRM from PImanager PID <p> UID <u>. Timing out.	PIprocess receives a SIGALRM from PImanager and the time out process starts.	Information only, no action required.
Received SIGALRM from unknown process PID <p>, UID <u>. Not timing out	PIprocess receives a SIGALRM from a process that is not PImanager. The sending process and user is stated.	Information only, no action required.
Received SIGHUP from PID <p>, UID <u>	PIprocess has received a SIGHUP. The sending process and user is stated.	Information only, no action required.
Received SIGINT – Exiting	PIprocess has received a SIGINT.	Information only, no action required.
Received SIGTERM – Exiting	PIprocess has received a SIGTERM.	Information only, no action required.
Received SIGTERM from PID <p>, UID <u>	PIprocess receives a SIGTERM. The sending process and user is stated.	Information only, no action required.
Received SIGUSR1 from PID <p>, UID <u>	PIprocess receives a SIGUSR1. The sending process and user is stated.	Information only, no action required.
Re-reading internal provisioning database	PIprocess has received a SIGHUP and is re-reading the database.	Information only, no action required.
Shared library <l> successfully loaded.	The shared library has been successfully loaded.	Information only, no action required.
Unloading shared library <l>	The database has been re-read after a SIGHUP.	Information only, no action required.
User <x> logged off on host <h>	A user had disconnected.	Information only, no action required.
User <x> logged on from host <h>	A user has successfully logged on.	Information only, no action required.

PIbatch

Errors

This table defines the error messages for PIbatch.

Alarm Text	Reason	Remedy
`Cannot open result file <file> - exiting`	The PIbatch could not open the results file for writing.	Check file permissions for the user running the PIbatch.
`Cannot open script file <file> - exiting`	The PIbatch could not open the input script file for reading.	Check file permissions for the user running the PIbatch, and that the file exists.
`Error reading script file <file> - exiting`	The PIbatch could not read the input script file.	Check file permissions for the user running the PIbatch, and that the file exists.
`Line <n>: Connect line found when already connected, disconnecting and will reconnect`	Syntax error in the input file.	Correct the input file.
`Line <n>: Disconnect line when not connected, skipping`	Syntax error in the input file.	Correct the input file.
`Line <n>: Not connected, not sending command`	PI command in input file before the connection line.	Correct the input file.
`Usage: PIbatch <script> <server>`	Wrong number of command line arguments.	Usage is “PIbatch <script> <server>”

PIbatch XML

Errors

This table defines the error messages for PIbatch XML.

Alarm Text	Reason	Remedy
`unable to connect to PI: <message>`	Could not connect to PIprocess.	Check the PIprocess is running. Check the hostname is correct. Check the port number is correct.
`unable to read <filename>: open() failed with <message>`	Unable to read the input file.	Check file permissions for the user running the PIbatch, and that the file exists.
`-l not available when reading from stdin`	Looping was requested with no input file	Do not specify looping when the input is standard input.

Notifications

This table defines the notification messages for PIbatch XML.

Alarm Text	Reason	Remedy
`multiple IP addresses for host <h>, using <address>`	The PI server has more than one address. The one to be used is stated.	Information only, no action required.