



4 Troubleshooting Functions

Troubleshooting functions, such as notifications, tracing, and counters, are provided to identify problems or failures.

4.1 List of Alarms and Notifications

The following section provides alarm and notification information for EOC microservices, ADP services, and AVM alarms.

4.1.1 AVM Alarms and Notifications

The CWAVMAlarm JMX object contains an attribute and operation as follows:

CWAVMAlarm - Attribute and Operation

Type	Description
Attribute - Number of active alarms	This attribute returns the number of different active alarms raised by the application. These alarms can be system or customer alarms. These active alarms are dynamic, and they provide a sum of system and customer alarms.
Operation - Get Active Alarm()	Invoking this operation returns all the active alarms raised by the application (system or customer).

These active alarms are present in the eventlog. To see these messages in the JMX Jconsole log messages, select the **Subscribe** button from the **Notifications** available under the CWAVMAlarm JMX object.

AVM alarms are integrated with the ADP Fault Management alarm system using the Fault Indication (FI) REST interface. For more information, refer to [Integrate ADP Alarm Using FI REST](#) (on page 36). The **Enable ADP Fault Indication** field in the **System Configuration** application allows alarms to be raised by ADP services.

Each alarm has an alarm code. The second letter of the alarm ID defines the alarm level:

- E - error
- I - information
- W - warning

For example, OE5000 alarm ID is an error alarm, OW5071 is a warning alarm, and OI5001 is an information alarm (clear event).

Errors or warning alarms are raised when the application encounters a major issue. Clear events are used to delete or clear the corresponding error alarms in jconsole CWAVMAlarm after the corresponding error alarm is resolved. These



events are also used to display an informational message in the log files. So, the clear events are not displayed when Get Active Alarms operation is invoked, but their information messages are logged in the log files.

The following table contains the AVM alarms (raised alarm message ID) available in the system notifications and the clear events (clear alarm message ID) that are generated when the corresponding alarms are resolved:

System Notifications Alarms and Clear Events

Alarm Code (snfAlarmActive ModelIndex)	Raised Alarm Message ID	Raised Alarm Mes- sage	Clear Alarm Mes- sage ID	Clear Alarm Mes- sage	JMX Notifica- tion Type	Severity (snfAlarmAct- ive Severity)	Event Type (ituAlarm EventType)	Probable Cause (ituAlarm Probable- Cause)
1377000	OE5000	AVM Database {0} is down or unreachable	OI5001	AVM Database {0} is up and connected.	com.concept- wave.AVMNT- FALARM. Database- DownOrUn- reachable	critical (3)	environmen- talAlarm(6)	underlyingRe- sourceUnvail- able (165)
1377006	OE5006	Config Node {0} is not active	OI5006	Config Node {0} is active.	com.concept- wave.AVMNT- FALARM.Config NodeNotAct- ive	major (4)	environmen- talAlarm(6)	configura- tionOrCustom- isationError (159)
1377008	OE5008	JMX port is not defined, Process engine must have defined JMX port	N/A No clear alarm mes- sage is sent	N/A	com.concept- wave.AVMNT- FALARM.Jmx- PortMissing	major (4)	environmen- talAlarm(6)	configura- tionOrCustom- isationError (159)
1377018	OE5018	Catalog cannot star- tup {0}	OI5018	Catalog startup suc- cessfully {0}	com.concept- wave.AVMNT- FALARM. AVMUnSuc- cessfulCatalog- Startup	major (4)	environmen- talAlarm(6)	underlyingRe- sourceUnvail- able (165)
1377022	OE5022	Error occurred while attempting to start interface listener: {0} Exception: {1}	OI5023	Interface listener started successfully	com.concept- wave.AVMNT- FALARM. AVMListener- FailedToStart	major (4)	environmen- talAlarm(6)	underlyingRe- sourceUnvail- able (165)
1377024	OE5024	Fail to invoke inter- face: {0}.	OI5025	Interface {0} invoked successfully	com.concept- wave.AVMNT- FALARM. AVMInter-	minor (5)	environmen- talAlarm(6)	softwareError (163)



Alarm Code (snfAlarmActive ModelIndex)	Raised Alarm Message ID	Raised Alarm Mes- sage	Clear Alarm Mes- sage ID	Clear Alarm Mes- sage	JMX Notifica- tion Type	Severity (snfAlarmAct- ive Severity)	Event Type (ituAlarm EventType)	Probable Cause (ituAlarm Probable- Cause)
					facelInvocation- Error			
1377028	OE5028	AVM {0} is out of memory.	N/A No clear alarm mes- sage is sent	N/A	com.concept- wave.AVMNT- FALARM. AVMOutOfMemory	critical (3)	environmen- talAlarm(6)	outOfMemory (162)
1377030	OE5030	AVM {0} connection to command node is down.	OI5031	AVM {0} connection to command node is up	com.concept- wave.AVMNT- FALARM. CommandNo- deConnFailed	minor (5)	environmen- talAlarm(6)	underlyingRe- sourceUnavail- able (165)
1377032	OE5032	{0}, {1} license will expire on {2}.	N/A No clear alarm mes- sage is sent	N/A	com.concept- wave.AVMNT- FALARM. LicenseExpira- tionNotice	warning(6)	environmen- talAlarm(6)	configura- tionOrCustom- isationError (159)
1377034	OE5034	{0}, {1} license has been expired.	OI5035	{0}, {1} license has been renewed.	com.concept- wave.AVMNT- FALARM. LicenseEx- piredNotice	major (4)	environmen- talAlarm(6)	configura- tionOrCustom- isationError (159)
1377035	OW5035	License was not synchronized with a License Server	N/A No clear alarm mes- sage is sent	N/A	com.concept- wave.AVMNT- FALARM. LicenseSyn- chronization- Notice	minor(5)	environmen- talAlarm(6)	configura- tionOrCustom- isationError (159)
1377036	OE5036	Certificate {0} is invalid. {1}	N/A No clear alarm mes- sage is sent	N/A	com.concept- wave.AVMNT- FALARM.Certi- cateInvalid	major(4)	environmen- talAlarm(6)	configura- tionOrCustom- isationError (159)
1377037	OE5037	The logical connec- tion {0} reached its threshold {1} in the HOST {2}, AVM_ID {3}	OE5038	The logical connec- tion {0} is under the threshold={1} in the HOST={2}, AVM_ ID={3}	com.concept- wave.AVMNT- FALARM. AVMDBCon- nection- Threshold- Reached	major (4)	environmen- talAlarm(6)	sfwrEnviron- mentProblem (155)



Alarm Code (snfAlarmActive ModelIndex)	Raised Alarm Message ID	Raised Alarm Mes- sage	Clear Alarm Mes- sage ID	Clear Alarm Mes- sage	JMX Notifica- tion Type	Severity (snfAlarmAct- ive Severity)	Event Type (ituAlarm EventType)	Probable Cause (ituAlarm Probable- Cause)
1377039	OE5039	Updating heartbeat to DB took longer than expected {0}, check database tuning and access time for CWVMINFO table.	OE5040	Updating heartbeat to DB is back to normal.	com.concept-wave.AVMNT-FALARM.AVMUpdate-HeartbeatDB-TookLonger-ThanExpected	minor (5)	environment-alAlarm(6)	sfwrEnviron-mentProblem (155)
1377042	OE5042	The reloaded configuration {0} cannot be applied. Restart AVM to apply the configuration.	OI5043	The configuration has been successfully loaded and applied.	com.concept-wave.AVMNT-FALARM.ReloadConfigRestartNotice	minor (5)	environment-alAlarm(6)	configura-tionOrCustom-isationError (159)
1377044	OE5044	The imbalance between bucket numbers {0} and {1} for process type {2} is greater than threshold in configuration.	OI5045	Bucket imbalance is lower than specified threshold.	com.concept-wave.AVMNT-FALARM.Imbalan-ceThresholdEx-ceed	major(4)	environment-alAlarm(6)	configura-tionOrCustom-isationError (159)
1377046	OE5046	The following certific-ates have expired: {0}	OI5047	No expired SSL certi-ficates have been found.	com.concept-wave.AVMNT-FALARM.Certi-ficateExpired-Notice	major (4)	environment-alAlarm(6)	configura-tionOrCustom-isationError (159)
1377048	OE5048	The certificates will expire in less than {1} days, certificates: {0}	OI5049	No SSL certificates have been found with expiration date lower than threshold.	com.concept-wave.AVMNT-FALARM.Certi-ficateExpira-tionNotice	warning (6)	environment-alAlarm(6)	configura-tionOrCustom-isationError (159)
1377050	OE5050	Failed to collect information from keystore [path: {0}, alias: {1}]	N/A No clear alarm mes-sage is sent	N/A	com.concept-wave.AVMNT-FALARM.Certi-ficateExpira-tionNoticeError	major (4)	environment-alAlarm(6)	underlyingRe-sourceUnavail-able (165)
1377051	OE5051	Peer certificates will expire in less than {1} days, certificates: {0}	OI5052	No peer certificates have been found with expiration date lower than threshold	com.concept-wave.AVMNT-FALARM.PeerCertificate-Expiration-Notice	warning (6)	environment-alAlarm(6)	configura-tionOrCustom-isationError (159)



Alarm Code (snfAlarmActive ModelIndex)	Raised Alarm Message ID	Raised Alarm Mes- sage	Clear Alarm Mes- sage ID	Clear Alarm Mes- sage	JMX Notifica- tion Type	Severity (snfAlarmAct- ive Severity)	Event Type (ituAlarm EventType)	Probable Cause (ituAlarm Probable- Cause)
1377053	OE5053	HTTPS (client) certi- ficates will expire in less than {1} days, certificates: {0}	OI5054	No HTTPS (client) certificates have been found with expiration date lower than threshold	com.concept- wave.AVMNT- FALARM. HttpsCertific- ateExpiration- Notice	warning (6)	environmen- talAlarm(6)	configura- tionOrCustom- isationError (159)
1377056	OE5056	Could not decrypt security table with the master key/ algorithm configured. Please verify if key- store is up-to-date.	OI5057	Security table decrypted success- fully with configured or default master key/ algorithm.	com.concept- wave.AVMNT- FALARM. SecurityTable- Decryption- NoticeError	major(4)	environmen- talAlarm(6)	configura- tionOrCustom- isationError (159)
1377058	OE5058	Average {0} of sys- tem metric {1} has exceeded threshold {2}	OI5059	Average {0} of sys- tem metric {1} has fallen below threshold {2}	com.concept- wave.AVM- METRICAL- ARM.Met- ricAver- ageThreshold- Exceeded	minor(5)	environmen- talAlarm(6)	configura- tionOrCustom- isationError (159)
1377060	OE5060	Total count of events {0} for system metric {1} has exceeded threshold {2}	OI5061	Total count of events {0} for system metric {1} has fallen below threshold {2}	com.concept- wave.AVM- METRICAL- ARM. TotalCount- ThresholdEx- ceeded	minor(5)	environmen- talAlarm(6)	configura- tionOrCustom- isationError (159)
1377062	OE5062	Rate {0} of interface metric {1} has exceeded threshold {2}	OI5063	Rate {0} of interface metric {1} has fallen below threshold {2}	com.concept- wave.AVM- METRICAL- ARM.RateEx- ceeded	minor(5)	environmen- talAlarm(6)	configura- tionOrCustom- isationError (159)
1377064	OE5064	Average {0} of sys- tem metric {1} has fallen below threshold {2}	OI5065	Average {0} of sys- tem metric {1} has exceeded threshold {2}	com.concept- wave.AVM- METRICAL- ARM.Met- ricAver- ageThreshold- FallenBelow	minor(5)	environmen- talAlarm(6)	configura- tionOrCustom- isationError (159)



Alarm Code (snfAlarmActive ModelIndex)	Raised Alarm Message ID	Raised Alarm Mes- sage	Clear Alarm Mes- sage ID	Clear Alarm Mes- sage	JMX Notifica- tion Type	Severity (snfAlarmAct- ive Severity)	Event Type (ituAlarm EventType)	Probable Cause (ituAlarm Probable- Cause)
1377066	OE5066	Total count of events {0} for system metric {1} has fallen below threshold {2}	OI5067	Total count of events {0} for system metric {1} has exceeded threshold {2}	com.concept-wave.AVM-METRICAL-ARM. TotalCount-ThresholdFallenBelow	minor(5)	environmentalAlarm(6)	configurationOrCustomisationError (159)
1377068	OE5068	The licenses were changed during refresh, missing features {0}	N/A No clear alarm message is sent	N/A	com.concept-wave.AVM-LICALARM. MissingLicenseFeatures	warning(6)	environmentalAlarm(6)	configurationOrCustomisationError (159)
1377069	OW5069	AVM is using the default master key, it is highly recommended change it to increase the security.	OI5070	Master Key was configured. AVM security was increased successfully.	com.concept-wave.AVMNT-FALARM.Key-storeMaster-KeyDefault-Warning	warning(6)	environmentalAlarm(6)	configurationOrCustomisationError (159)
1377071	OW5071	AVM started in the emergency unlock mode. Expiration date: {0}	N/A No clear alarm message is sent	N/A	com.concept-wave.AVMNT-FALARM. UnlockLicenseNotice	warning(6)	environmentalAlarm(6)	configurationOrCustomisationError (159)
1377072	OE5072	Load license error: {0}.	N/A No clear alarm message is sent	N/A	com.concept-wave.AVMNT-FALARM. LoadLicenseError	major(4)	environmentalAlarm(6)	configurationOrCustomisationError (159)
1376004	XE0004	No active port found for operation "{0}"	N/A No clear alarm message is sent	N/A	com.concept-wave.AVMNT-FALARM. AVMInterfaceInvocationErrorNoActivePort	major (4)	environmentalAlarm(6)	configurationOrCustomisationError (159)
1376023	XE0023	Service not available at this time. Operation "{0}"	N/A No clear alarm message is sent	N/A	com.concept-wave.AVMNT-FALARM. AVMInterfaceInvocation-	major (4)	environmentalAlarm(6)	unavailable (14)



Alarm Code (snfAlarmActive ModelIndex)	Raised Alarm Message ID	Raised Alarm Mes- sage	Clear Alarm Mes- sage ID	Clear Alarm Mes- sage	JMX Notifica- tion Type	Severity (snfAlarmAct- ive Severity)	Event Type (ituAlarm EventType)	Probable Cause (ituAlarm Probable- Cause)
					ErrorServi- ceNotAvailable			

4.1.1.1 AVM-based Services Alarms - DRAFT (with tables per alarm code)

The following table lists the alarm codes and information for the AVM-based services.

AVM-based Services

Reference: AVM Alarms and Notifications (on page 25)

AVM Database {0} is down or unreachable - <<< TBD >>> <<< No full description yet >>>.	
Fault Name	<<< TBD >>> <<< No Fault Name yet >>>
Alarm Code	1377000
Alarm Category	Environmental Alarm
Severity	Critical
Probable Cause	165 <<< TBD >>> <<<Should this just be a number? We can also have description. >>>
Proposed Action	<<< TBD >>> <<< No Proposed Action yet >>>
Config Node {0} is not active - <<< TBD >>> <<< No full description yet >>>.	
Fault Name	<<< TBD >>> <<< No Fault Name yet >>>
Alarm Code	1377006
Alarm Category	Environmental Alarm
Severity	Major
Probable Cause	159 <<< TBD >>> <<<Should this just be a number? We can also have description. >>>
Proposed Action	<<< TBD >>> <<< No Proposed Action yet >>>
TBD.	
Fault Name	TBD.
Alarm Code	TBD.