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Syncsort Network Management ZEN OSA Monitor

Configuration and Reference Guide

Version 1.5

Syncsort Network Management ZEN OSA MONITOR Configuration and Reference Guide

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CHAPTER 1 Introduction

The OSA MONITOR is a Syncsort Network Management component, henceforth referred to as ZEN. The OSA MONITOR requires ZEN to be installed and active to display its panels. Every panel in the OSA MONITOR has associated **Help** available, which provides information regarding this ZEN component.

Overview of the OSA MONITOR

The OSA MONITOR provides a convenient single point from where you can monitor all the OSAs accessible to the LPAR, on which the ZEN is running. A single OSA drop-down menu bar item is added when you install the OSA MONITOR, and you use this to access all of the primary display panels. You can access more available panels using the links that are indicated in blue on the panel.

The OSA MONITOR automatically detects all the accessible OSAs as soon as you start it, and activates its basic Monitoring and History Collection functions. Other available features such as Alert Monitoring are not activated by default, and can be adjusted later using the various OSA MONITOR panels. The available panels incorporate the data extracted from the OSA MIB. The statistics such as throughput bytes, packets, and average percentage OSA usage are extracted from your TCP/IP stack or calculated by the OSA MONITOR.

The Health Check function is particularly useful function that dynamically allows checking of any potential problems with your OSAs. Drill-down options are available from the Health Check panel to the full OSA MIB display for the specific OSA element (channel, LPAR, Ethernet or token ring port, and so on).

First Steps with the OSA MONITOR

When the OSA MONITOR is first started, its ‘Auto-Discover’ feature automatically detects all the OSAs on the local LPAR on which it is running. It adds these OSAs dynamically to your OSA configuration and automatically activates History Collection. This means local OSAs are not required to be configured if you want OSA MONITOR to capture the history and do the basic alerting for all of your local OSA devices. Since this learning process takes place every time the OSA MONITOR is started, you do not need to access the OSA Configuration panel.

Although Auto-Discover means that much of the work involved in defining the OSAs on your local system is already done, it is likely that you will need to make additional configuration changes. You can access the OSA configuration panels to enable or disable the basic functions such as alert monitoring, history capture, SMF reporting, and SNMP connectivity using the green and red switches. If you are sharing the OSA and want a global view of the throughput statistics for the OSA across all LPARs that share the device, you will need to use an OSA MONITOR that has been set up as a focal point, connected to subordinate instances on the remote LPARS. For more information, refer to the Focal Point in chapter 2 “New Features” on page 9 and how to set up Focal Point in chapter 3 “Configuring the OSA MONITOR” on page 13.

If you have made changes to the Configuration, save it so that they are available when the OSA MONITOR restarts. Once you have saved your Configuration, the OSA MONITOR will use this as your personal preference, rather than auto-discovering your OSA Configuration. The OSA Configuration panel and all other panels relating to the administration of this ZEN component, can be accessed using the **OSA Admin** menu item that is available from the main **Admin** item in ZEN’s menu bar.

Along with verifying that your OSA configuration is as you require, there are other settings that you may want to review such as the SNMP interval. This is available for review and update from the **Update SNMP Settings** panel, it can be accessed via the **SNMP Settings** button on the configuration panel. The default SNMP interval is set to 5 minutes.

After the basic setup is done, you can check your OSAs in the **OSA Summary View** panel and the views within that panel such as the *Partitions View*, *Interface View*, and *VTAM View*. Use the **Health Check** panel to do a dynamic check on the current status of your OSAs.

A Note on OSA MONITOR Panel Values

When you access an OSA MONITOR display panel, the default values reflect the sample that is captured at the last SNMP interval. This is 5 minutes by default but is configurable using the **SNMP Settings** option from the OSA Configuration panel, which is accessible from the web interface. In this case, the values shown could be almost as old as the SNMP interval if your timing is incorrect.

When you view the Port or Channel view, you can select the **Update Data** action button which refreshes the data to show the statistics for a particular time.

OSA MONITOR panels that do not contain MIB-based information are not subject to this restriction. Information for these panels is acquired in real-time from VTAM, z/OS, or your IP stack. These panels therefore always reflect the up-to-date values.

Primary OSA Display Panels

The primary OSA MONITOR panels that you are likely to use are:

- OSA Summary View
- OSA Port View
- OSA Channel View
- Partitions View
- Interface View
- VTAM View
- OSA Health Check

The **OSA Summary View** is the default view upon selecting the **OSA** > **OSA Summary View** panel on the ZEN desktop. This provides summarized high-level information of the OSAs configured to your system. If this instance of OSA Monitor is acting as a Focal Point server, it will also display the OSA port information from any connected OSA Monitor instances as well.

The **OSA Port View** displays the OSA port information. In the left-hand column, all the OSA port fields/OIDs are listed. The second column displays the port statistics for each field since the panel was last updated. The third column shows the change in statistics since the last update to this panel was made or since the OSA Monitor was started. You can choose this by selecting either **Last Interval** or **Since Reset** from the top bar of this panel. The graphic on this panel shows information related to a particular port. You can left-click on any of the SNMP Port Statistics fields to display further information about the field, including its description.

The **OSA Channel View** panel displays all channel specific SNMP information and functions similar to the **OSA Port View** panel. It allows to track any statistical changes based on reset or interval period.

The **Partitions View** displays any mainframe partition that is using each physical OSA even if that partition is not currently running OSA Monitor or is not a native z/OS system. The partitions that are displayed per interface can be managed in the **OSA Configuration** > **SNMP Settings** panel in the ZEN Admin section. This display shows the overall OSA port utilization based on Kbytes in/out, PCI Bus, and Processor utilization over a period of one minute, five minutes, and sixty minutes intervals. It also provides bar and line graphs to easily compare the utilization of each system, sharing the same OSA port.

The **Interface View** displays the status, health, alerts, errors, and total packets in/out per OSA interface associated with the instance of the OSA Monitor. If operating as a Focal Point, it also displays the OSA ports from connected OSA monitor instances.

The **VTAM View** displays all the local VTAM TRL information for locally attached OSAs, and the TRLE name and major node names for all the OSA ports discovered on remote systems if running as a Focal Point. The general TRLE health and queue depth can also be displayed to review the historical utilization. It can also display the general health of the read/write/data interfaces of each port.

The **OSA Health Check** panel enables you to run an immediate check of the OSAs in your OSA Configuration to determine whether there are any problems or potential problems that need to be considered.

Data Sampling

Data Sampling is the process where the OSA MONITOR takes regular snapshots of the data in the MIBs of all the active OSAs defined in your OSA configuration.

The frequency in which this sampling process takes place is determined by the value (in minutes) specified for the SNMP Sampling Interval as defined in the **Update SNMP Settings** panel. This panel can be found in the **OSA Configuration** panel which is available from the OSA Admin section from the Syncsort Network Management desktop. The default SNMP sampling interval is 5 minutes.

Alert Monitoring

The Alert Monitoring function is a key feature that alerts you when the OSA MONITOR detects that a pre-defined condition has occurred. A condition is defined using an Alert Rule and these are managed through the **Admin** > **OSA Admin** > **Manage Alerts** panel. At the expiry of each SNMP sampling interval, Alert Monitoring determines whether all is well, or whether one or more alerts need to be issued.

The **Manage Alerts** panel shows a high-level summary of different types of alerts that can be set and the alerts have been generated. If required, you can click the **Update Alert** action button next to any alert to activate or deactivate the individual alert rules. You can set low, high, and delta thresholds for which an alert is to be triggered against. You can use the switch icon to enable or disable the different options—green for ON, red for OFF.

Alerts generated by the Alert Monitoring process are written both to Syncsort Network Management's printed Alert Log and are available on-line using the drop-down Alerts menu option to display the Alert Summary panel. Since the alerts are managed by Syncsort Network

Management, configuration of Syncsort Network Management's alerting function is available to the OSA MONITOR. Alerts that are triggered will also appear in the Health Check panel, it can be accessed via the OSA drop-down in the user interface.

The Base State, Reference Values, and Soft Reset

When the OSA MONITOR is first started, it takes an initial sample of all the OSAs defined in your OSA configuration as described earlier in “Data Sampling” on page 4. This first sample is called the *Base State* and the values captured are referred to as the *Reference Values*. These values are stored by the OSA MONITOR and are reinstated when the component is Warm started. Warm start is the usual default start mode after the first execution.

The Base State is used in the Standard Health Check process to determine which items should be brought to your attention. This process involves cross-checking the latest MIB field values for active Alert Monitoring rules against those in the Base State. Note that the Health Check process is completely separate and does not affect, interact with, or change the Alert Monitoring process in any way.

Therefore, under normal circumstances, once a field is displayed on the Health Check panel, the OSA MONITOR continues to show it every time the panel is accessed for as long as the field’s associated rule is active. This is because some of the MIB field values are never reset unless the whole OSA is taken off-line and brought back on-line again.

The Soft Reset function, available from an action button on the OSA Configuration panel, enables you to reset the Base State to the latest OSA MIB values, without having to restart the OSA MONITOR.

When you do the Soft Reset, the fields that are caused by error counter fields being higher than the base state will no longer appear on the Health Check panel. Note that this does not apply to the entries on the panel caused by disabled status or threshold breaches, which will still appear.

The History File

The OSA MONITOR’s statistical History File is a self-maintaining linear VSAM dataset (a DIV). Records are written to it at the regular SNMP data sampling interval as specified in the update SNMP Settings panel.

The OSA MONITOR automatically detects the size of the History File. The history forms the basis of the OSA MONITOR’s on-line graphs and is ideal for showing trends over a period, as distinct from simple snapshot statistics. Each history record contains just a few key fields from the OSA MIB for each OSA resource element on every OSA being monitored.

Data Capture and the OSA MIB Layout

THE OSA MONITOR uses a number of primary sources for its display panels and functions. These primary sources are the OSA MIB, TCP/IP stack, and VTAM commands issued internally. The TCP/IP stack provides such items as the interface and device names, IP address and traffic statistics. VTAM commands provide TRL and TRLE information. All of the low-level details come directly from the OSA MIB. The OSA MONITOR samples the low-level details for the panel displays, the Alert Monitoring function, and for history collection. The SNMP Interval determines the sampling frequency.

With the introduction of concurrent microcode updates (MCA changes), it is important that the OSA MONITOR, SNMP daemon, and IOBSNMP agents are all recycled, if you perform such OSA update without performing an OSA restart. Also, IBM recommends that you stop affected OSAs using the V TCPIP,,STOP command and wait for two minutes before restarting them using V TCPIP,,START command.

Refer to http://www-01.ibm.com/support/docview.wss?uid=swg21588246

If you do not do this, the correct microcode level will not be shown in the OSA MONITOR panels.

An OSA MIB contains several tables, each table represents a particular resource type that is configured in the OSA. The resource types determine the available MIBs and panels that you can access in the OSA MONITOR. The OSA MONITOR must be pre-configured to ensure that the correct information is displayed based on the OSA hardware type and level, if SNMP functionality is required. This ensures that the OSA Monitor remains compatible with any OSA hardware released in the future and does not require additional software updates. For this reason, we have introduced several new parameters that must be configured in the OSA Monitor profile:

- Mibdatapath
- Mibmi2path
- OSAType

For more information regarding these parameters and how they should be configured, refer to the “OSA MONITOR Installation, Configuration, and Maintenance” on page 8.

Within each available MIB resource panels, most likely there will be several entries, each entry representing an instance of that resource. For example, there may be several 10Gb Ethernet ports or several ATM ports, and so on in the **OSA Summary View** panel. The resource identifier, for example the channel number, CSS Id, Port name, and so on, in the OSA Summary View panel is always linked to the full detailed panel for that resource. At this most detailed level, you will see all of the MIB fields for that one resource element along with the current values and full text descriptions.

For each resource type, the OSA MONITOR has two types of display panel available.

- **Summary** panel: displays only the key values from the MIB. It is intended to be adequate for the basic OSA monitoring.
- **Detail** panel: provides full MIB details. It is only required when a serious low-level analysis of the OSA MIB is required.

The OSA MONITOR can report on the following supported hardware as specified in the ZOMPARM:

- atmEmulatedEthernet
- osaexp725GbE
- osaexp710GbE
- osaexp71GbE
- osaexp71000BaseTE
- osaexp5tenGigabitEthernet

- osaexp5oneThousandBaseTEthernet
- osaexp5gigabitEthernet
- osaexp3tenGigabitEthernet
- osaexp3oneThousandBaseTEthernet
- osaexp3gigabitEthernet
- tenGigabitEthernet
- oneThousandBaseTEthernet
- tokenRing
- fastEthernet
- gigabitEthernet

You can add additional port types by referencing an updated MIB data and MI2 file from the OSA Monitor Profile. It is recommended that these files be refreshed as new hardware and z/OS releases become available.

OSA MONITOR Terminology

Refer to Table 1 for specific meaning of the common terms you may find in the OSA MONITOR manual, on-line panels, and associated Help.

TABLE 1. OSA MONITOR Terminology

Term	Meaning
Base State	A collective term for the Reference values.
Reference Values	The complete set of MIB values captured either when the OSA MONITOR is started for the first time, or when a Soft Reset is requested. These are used as a statistical baseline (the 'Base State') that the OSA MONITOR uses to check for changes that might result in entries appearing on the **Health Check** panel.
SNMP Sample Interval	The interval at which the OSA MONITOR processes the MIBs for each active OSA defined in the configuration. This is set using the SNMP Interval, which can be defined and altered in the **Update SNMP Settings** panel in the OSA MONITOR user interface. The default interval is 5 minutes.
Soft Reset	The process whereby the OSA MONITOR discards all its current stored sampled MIB values and captures a new set of values, as if the OSA MONITOR is started for the first time. This process resets all the Reference Values to the Base State.

OSA MONITOR Installation, Configuration, and Maintenance

The installation of the OSA MONITOR is quick and easy and is mostly an automated process. It is described in the manual *Installing and Maintaining ZEN and ZEN Components*, chapter “Installing the ZEN OSA MONITOR”.

The OSA MONITOR is maintained using SMP/E and ZEN that includes simple panels accessed from its SETUP procedure for generating the job control necessary to receive, apply, accept, (and in the event of any problems, restore and reject) PTFs. This process is also described in the manual *Installing and Maintaining ZEN and ZEN Components*, chapter “SMP/E Maintenance”.

This manual covers the configuration of OSA MONITOR in the chapter “Configuring the OSA MONITOR” on page 13.

CHAPTER 2 New Features

This chapter describes the new features in the OSA MONITOR.

This version v1.5 of Syncsort Network Management–ZEN OSA Monitor (ZOM) provides a more holistic view of the OSA adaptors in your enterprise with less overhead. With significant architecture improvements, new metrics collection and enhanced alerting capabilities provides for better management of your OSA environments.

New APIs deliver these capabilities in a more efficient manner and feed the information into a new and intuitive User Interface.

The alerting function is enhanced to provide more comprehensive alerting capabilities, while reducing the volume of SNMP requests to the OSA.

Moving hardware definitions into the ZOM configuration parameters delivers the ability to easily support future versions of the hardware.

The OSA MONITOR has the following new features:

API Support

Two new APIs are created to provide better performance and less overhead when accessing OSA hardware for analysis.

IBM z/OS Communications Server NMI API Support

This API provides the ability to auto-discover OSA hardware and extract details and performance data. This information further provides better visibility and alerting capabilities. The API significantly reduces the reliance on SNMP, thereby minimizing the overhead of data extraction.

IBM z/OS Communications Server SNMP API Support

This API replaces the need for hard-coded Object Identifier (OID) definitions, SNMP socket protocols, and data conversion routines that required significant changes to support new variants of OSA hardware.

New Architecture

The focal point instance of ZOM provides a more holistic view of the OSA and RoCE adaptors across all LPARs, including some OSA performance data for LPAR partitions not running a ZOM instance or z/OS. Only focal point ZOM is the one issuing SNMP requests, as they are now centrally controlled. The result is the reduction of requests to the physical OSA, thereby minimizing workload on the adapter. ZOM running on LPARs which are not defined as a focal point do not need to issue any SNMP requests, further reducing the ZOM overhead and load on the OSAs. These instances can still be used to view OSA data associated with their own LPAR.

Removal of hard-coded hardware definitions

OSA hardware definitions and their SNMP attributes can now be dynamically defined, rather than hard coded in the product. To enhance maintainability and scalability, ZOM now reads directly from the IBM supplied Management Information Base (MIB) tables and builds its internal processing and alert metrics based on these tables. This means that as new OSA hardware is released, the MIB tables can be downloaded from the IBM website and referenced in the ZOM configuration. ZOM supports all OSA hardware levels, and as upgrades occur, older entries may be removed from the configuration to reduce storage.

Redesigned UI

The UI now presents a system wide view of an OSA/RoCE within the focal point ZOM instance, including the additional data available from the NMI and SNMP APIs. Summary views include all adaptors, with the ability to drill down to review more detailed information. Current values can be displayed along with the delta interval value (change in metrics in last minute) or delta base values (change in metrics since last reset). The detailed view also shows a subset of the desktop graphic display with other ZEN based components.

Support for RoCE Groups and Links

SNMP is no longer required to provide RoCE support. Utilizing the NMI API based statistics, with the addition of SMC-R group and link data, now it provides better support.

Updated desktop display

The ZOM desktop has been replaced with a re-designed display to present the wider views capable with the focal point structure.

Extended and More Granular Alert Configurations

ZOM now provides the ability to set alerts on the majority of data points extracted from NMI or SNMP requests. In addition, the alerting has been extended to allow thresholds to be set for delta thresholds wherever applicable. Alerts can be defined when a metric increases beyond the defined threshold in a single data collection interval. This extended alerting has been carried forward into the Health Check feature, so any field defined for an alert can also display in a health check.

Updated History

The historical data collection has been updated to collect and display metrics daily at a more granular level. Graphical displays can now be scrolled by hour of day and selected by day.

Updated SMF Records

The SMF records are now written based on the data extracted using the new APIs. The actual format of the SMF record has not been changed, so any existing reporting capabilities should be applicable.

Removed/Superseded Functionality

Manual configuration of OSA adaptors

This function is now done automatically using NMI API calls and via propagation across the focal point connections. Configuration still exists for detected OSAs, allowing the customer to enable/disable specific features such as SNMP, Alerting, History, and SMF recording.

Definition of History File Size

ZOM automatically detects the history file size removing the need for manual file size calculation and definition.

SNMP Timeout

This is no longer required as SNMP API is being used rather than native socket calls.

SNMP Interval

This is no longer required in the configuration. It can now be specified per OSA in the User Interface.

Alerting and SMF Recording

This is no longer required in the configuration. It can now be specified per OSA in the User Interface.

CHAPTER 3

Configuring the OSA MONITOR

This chapter describes the parameters used to configure OSA MONITOR.

Overview

OSA MONITOR parameters are specified in the OSA MONITOR Profile. Immediately after installing the OSA MONITOR, the provided Profile can be found in *your-hlq*.PARMLIB.

The Profile is shipped with pre-defined values that are designed to be non-controversial so that the OSA MONITOR can be started up immediately. However, after you have become familiar with the capabilities of the OSA MONITOR, it is likely that you will want to customize the Profile. For example, to enable Focal Point Client/Server functionality.

OSA MONITOR Profile

Overview

The OSA MONITOR Profile contains parameters that configure settings such as the interval at which you want SMF data to be collected and whether you want Focal Point functionality to be enabled. Initial default values are set in the Profile, however, these may need to be changed after the OSA MONITOR is installed. Some settings can also be altered using the on-line OSA Settings and Parameters panel, and once altered, it will override the parameter values defined in the Profile for that OSA MONITOR session.

OSA MONITOR Profile General Information

Similarly to the ZEN profile, a OSA MONITOR Profile is PARMLIB member 'ZOMPARM' read on DD name ZOMPARM that can contain Global parameters and Job-Specific parameters. Global parameters apply to all OSA MONITOR instances that process that Profile. Job-Specific parameters are preceded by an identifier of the form:

<sysplex.sid.ZOM.jobname>

and ***all*** parameters that follow such an identifier apply ***only*** to that specific OSA MONITOR running in the job on the specified system. The sysplex and SID (see your SMFPRM*xx* member) are acquired from your system, the component name is fixed but you determine the OSA MONITOR's jobname. You can use a special placeholder of an asterisk '*' to denote 'all'. For example, using an asterisk in the jobname position denotes 'all jobs'. This provides flexibility when defining your Profile.

The parameter definitions in the Profile are specified as:

parameter *value*

and case is not significant. The following rules apply:

- Only one parameter is allowed on each line and can start in any position on that line.
- Parameters must be specified in full and are not case sensitive.
- A line with an asterisk * in the first position is treated as a comment.
- Parameters that follow an identifier of the form '*<sysplex.sid.ZOM.jobname>'* only apply to that specific OSA MONITOR job ('*Job-Specific* Parameters').

Parameters that are defined prior to any such identifier apply to all OSA MONITORs that read the Profile (‘*Global* Parameters’).

- The identifier for a specific OSA MONITOR job must be of the form:

<sysplex.sid.ZOM.jobname>

where the ‘less than’ and ‘greater than’ symbols are mandatory delimiters. Where an asterisk is used as one of the parts of the identifier, it means ‘all of these’. For example, specifying an asterisk for *jobname* means ‘all jobs’.

- OSA MONITOR parameters support standard z/OS ampersand-prefixed (&) variables. For example, &SYSNAME.

CommunityName Parameter

The OSA MONITOR needs to know what SNMP community name you are using so that it can access the data it needs from your OSA MIBs. The parameter is specified as follows:

CommunityName *community_name*

By default, the OSA MONITOR assumes that your community name is ‘public’ and it will use this name when accessing your OSA MIBs. This is also the name provided in the OSA MONITOR’s sample PARMLIB member ZOMPARM.

If you have changed the default community name in your Installation, you can define the new name globally using the CommunityName parameter. If one or more of your OSA devices uses a name different from this global setting, you can specify this using the on-line OSA Admin/Configuration option.

CTRACEPROCName Parameter

This parameter provides the name of your CTRACE procedure. The CTRACE procedure is used during OSAENTA trace capture to define the dataset into which the trace data is written. The parameter is specified as follows:

CTRACEPROCName *CTRACE_procedure_name*

Specify the default procedure name to be used during network trace analyzer capture. There is no assumed default for this so the CTRACE Procname field on the Network Trace Edit and Launch will be blank unless you specify this parameter.

You can always alter the default name provided here when defining an OSAENTA trace.

EnterpriseCommunityName Parameter

This parameter should **only** be specified if you have a VACM_ACCESS CommunityName that is not ‘public’ and is also not the same as the name specified on the CommunityName parameter above.

Specify your SNMP enterprise community name so that the OSA MONITOR can access data such as your system and sysplex names from your enterprise (z/OS) MIB. The parameter is specified as follows:

EnterpriseCommunityName *enterprise_community_name*

By default, the OSA MONITOR assumes your enterprise community name is ‘public’, or is the same as the name specified by the CommunityName parameter above.

If you have changed the default enterprise community name in your Installation, you can define the new name globally using the EnterpriseCommunityName parameter.

FocalPoint Parameter

This new optional parameter establishes if this instance connects to a ZOM Focalpoint. The Focalpoint system is designed to reduce the number of redundant SNMP and IBM API calls to the same OSA hardware. This is achieved by having a singular point that manages this communication and can relay this back to peers. By default, only the Focalpoint will make SNMP call but connected peers can still perform this, if enabled. This parameter does not have a default value. The parameter is specified as follows:

FocalPoint *SYSID* Port *Port* IP *IP_address*

To specify the local ZOM instance as the focal point server, specify the host systems SYSID, a free port, and the IP address that incoming connections can access. To connect this instance to a remote ZOM Focalpoint server as a client, specify the SYSID, port, and IP that Server ZOM is accepting connections on.

Any ZOM instance can be configured as a Client and a Server by including multiple instances of the Focalpoint statement, or a client can connect to multiple servers for improved resilience.

FocalPointRetry Parameter

This parameter controls how often a Focalpoint connection should be tested or retried in the event of a connection failure. It is an optional parameter.

FocalPointRetry 15 | *nnn*

By default, a focalpoint connection will be checked every 15 seconds until connectivity is restored. This parameter has no upper limit and will affect all focalpoints defined in the OSA Monitor Profile.

IPPROCName Parameter

This parameter defines the default name for your TCPIP procedure and is used in the Network Trace Edit and Launch panel. The parameter is specified as follows:

IPPROCName *TCPIP_procedure_name*

By default, the OSA MONITOR assumes that your TCP/IP procedure name is TCPIP and it is this name that will be inserted in the Network Trace Edit and Launch panel. If you use a different name for your TCPIP procedure you can provide it on this parameter.

You can always alter the name provided here when defining an OSAENTA trace.

Mibdatapath Parameter

This parameter allows ZEN OSA Monitor to read the MIB data file from the OSA MIB tables that are accessed externally. It is needed to obtain the relevant values for each OID when performing SNMP calls. The parameter is specified as follows:

Mibdatapath /*ZOM_HFS*/data/osaexp7.data | */unix/file/path/mib.data*

This is a required parameter, even if the SNMP functionality will not be utilized. Only one MIB data file can be referenced. By default, this parameter will be included in the OSA Monitor Profile and the file will be shipped in the ZEN home directory/ data path. Users can change this path to a new MIB descriptor file provided by IBM, if released.

Mibmi2path Parameter

The OSA Descriptor file must be referenced explicitly as it is maintained externally to ZEN OSA Monitor. The OSAType parameter is used in conjunction with this file, to lookup the required port types for any discovered OSA's during the initial port discovery process. The parameter is specified as follows:

Mibmi2path /*ZOM_HFS*/data/osaexp7.mi2 | */unix/file/path/mib.mi2*

This is a required parameter, even if the SNMP functionality will not be utilized. Only one MIB descriptor file can be referenced. By default, this parameter will be included in the OSA Monitor Profile and the file will be shipped in the ZEN home directory/ data path. Users can change this path to a new MIB descriptor file provided by IBM, if released.

OSAType Parameter

The OSATYPE parameter is used to limit the OSA port type to be referenced when ZOM performs its SNMP calls. It also ensures that the correct port table is matched when making these calls to ensure that the correct OID objects are referenced from the associated MIB data and MI2 file. This parameter is required if SNMP support is desired. The parameter is specified as follows:

OSAType *OSA_Porttype Port_table*

There is an OSATYPE parameter statement for each supported OSA type. These values will be shipped in all current releases of ZOM and will not require manual lookup. To reduce overheard or search time, port types that are not currently installed can be commented out as necessary. If you don't want to get SNMP information, then all statements can be commented out. Conversely, if a new Port Type becomes available and is not currently supported, it can be added here in addition to the accompanying MI2 and MIB data file that describes this port.

SMFInterval Parameter

This parameter defines the interval at which the OSA MONITOR writes the OSA data into SMF records. The parameter is specified as follows:

SMFInterval 15 | *nnn*

When you specify to write the SMF records, by default they will be written at 15 minute intervals. You can vary the interval using this parameter. The allowed value is between 15–1440 minutes.

SMFRecordType Parameter

This parameter defines the SMF record number that the OSA MONITOR uses and is mandatory if you have specified 'SMFRecord Yes'. The parameter is specified as follows:

SMFRecordType *nnn*

Specify the record number, *nnn*, for OSA MONITOR SMF records. There is a default value of 230 set in the sample profile supplied with the OSA MONITOR.

You also need to ensure that SMF itself is set up to record the specified record number and that SMF itself is activated.

Member IEASYS00 in the system PARMLIB contains an 'SMF' parameter that gives you the suffix of the member that contains the SMF parameters. This member is called SMFPRM*nn*, so if the SMF parameter in IEASYS00 reads SMF=01, then you need to look into member SMFPRM01 to verify that it will allow records with the specified number to be written, and make a suitable change if it does not.

To activate SMF recording, the operator command SET SMF=*nn* may be issued, where '*nn*' is the same suffix mentioned above. Once active, OSA MONITOR continues to write SMF records until SMF recording is stopped.

If you activate SMF recording in OSA MONITOR but fail to update your SMF settings so

that the specified record number can be written, the records will not be recorded in SMF.

SMFSubtype Parameter

This parameter defines the SMF record Subtype number that the OSA MONITOR uses. It is an optional parameter. If not specified, then only the SMFRecordType is used. There is no default value to this parameter. The parameter is specified as follows:

SMFSubtype ***nnn***

Refer to the parameter description for SMFRecordType regarding SMF record collection and setup, to ensure that your installation records the selected Subtype.

VTAMACB Parameter

The OSA MONITOR requires a VTAM ACB to be defined via which it acquires various VTAM information. The parameter is specified as follows:

VTAMACB ***ACB_name***

By default, the installation procedure builds the console ACB name using the value you specified for the “OSAMON SPO APPL Name” during the OSA MONITOR installation, the default being ZOMCMD.

If you alter the name on this parameter, make sure that the ACB is properly defined and activated in VTAM.

A Sample OSA MONITOR Profile

Here is the default OSA MONITOR Profile.

```
*************************************
*                                   *
* ZEN OSA Profile Parameters        *
*                                   *
*************************************
VtamAcb                 ZOM&SYSNAME
CommunityName           public
SMFRecType              200
SMFSubtype              50
*

*************************************

* Focal Point Support               *
*************************************
FocalPoint        LPAR1 Port 7012 IP xxx.xxx.xxx.xxx
*
*************************************
* SNMP MIB Data Files               *
*                                   *
* IBM Supplied Files                *
*                                   *
*************************************
mibdatapath       /ZOM_HFS/data/osaexp7.data
mibmi2path        /ZOM_HFS/data/osaexp7.mi2
*
*************************************
* SNMP Hardware Support             *
*                                   *
* Based on ibmOSAChannelSubType     *
*                                   *
*************************************
OSAType  gigabitEthernet                 ibmOSAExpEthPortTable
OSAType  fastEthernet                    ibmOSAExpEthPortTable
OSAType  tokenRing                       ibmOSAExpTRPortTable
OSAType  oneThousandBaseTEthernet        ibmOSAExpEthPortTable
OSAType  tenGigabitEthernet              ibmOSAExp10GigEthPortTable
OSAType  osaexp3gigabitEthernet          ibmOSAExp3PortTable
OSAType  osaexp3oneThousandBaseTEthernet ibmOSAExp3PortTable
OSAType  osaexp3tenGigabitEthernet       ibmOSAExp3PortTable
OSAType  osaexp5gigabitEthernet          ibmOSAExp5SPortTable
OSAType  osaexp5oneThousandBaseTEthernet ibmOSAExp5SPortTable
OSAType  osaexp5tenGigabitEthernet       ibmOSAExp5SPortTable
OSAType  osaexp71000BaseTE               ibmOSAExp7PortTable
OSAType  osaexp71GbE                     ibmOSAExp7PortTable
OSAType  osaexp710GbE                    ibmOSAExp7PortTable
OSAType  osaexp725GbE                    ibmOSAExp7PortTable
OSAType  atmEmulatedEthernet             ibmOSAExpATMPortTable
*
```

CHAPTER 4 SMF Records

This chapter contains the layouts of the SMF records optionally built by the OSA MONITOR.

Note that the layout is available in C structure format in member ZOMSMF which can be found in the hlq.SAMPLIB that was built during installation.

You would normally use ZEN REPORTING to process these for you since it has these definitions all built in and a series of reports and graphs available which you can modify for your own requirements. See the on-line Help for ZEN REPORTING for further information.

OSA MONITOR SMF Record Structure

The diagram below illustrates the structure of the SMF records optionally built by the OSA MONITOR.

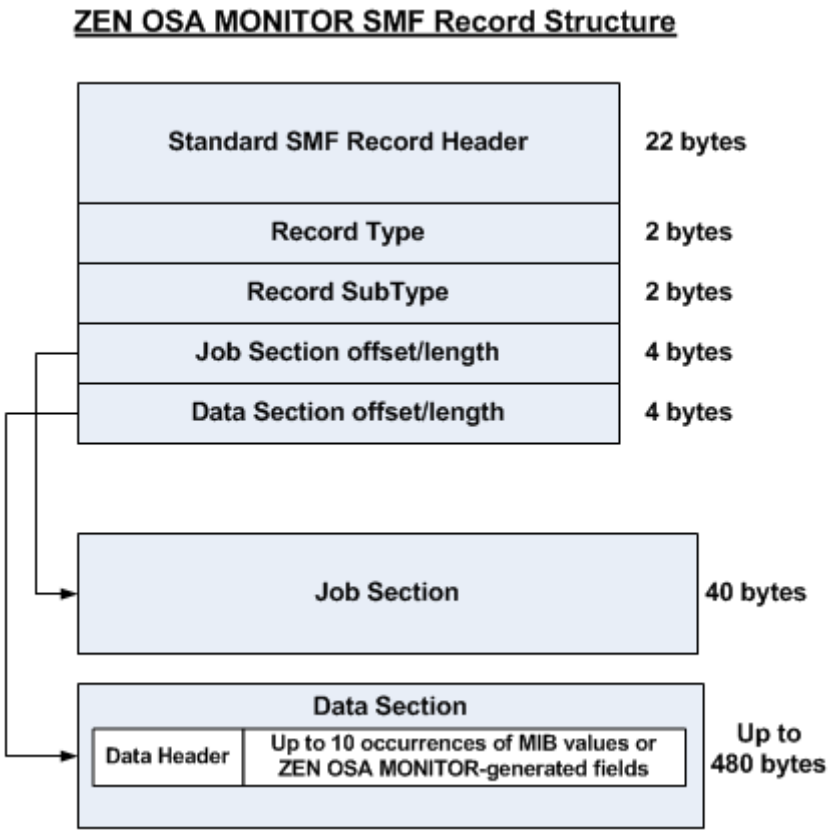

Figure 1. OSA MONITOR SMF Record Structure

Key to Field Type Settings

In the record layouts given in this section, a field type is given that enables you to handle the field appropriately during processing. This type is set as follows for all record layouts:

TABLE 1. SMF Record Field Types

Type	Description
B	Binary field of the given length
H	Binary halfword
F	Binary fullword
D	Binary doubleword
C	Character
X	Hexadecimal
P	Packed (signed)
PN	Packed (no sign)

The ‘offset’ field in the table is the offset to the beginning of the field relative to zero.

SMF Records

The maximum length of the SMF records is 602 bytes. However, since the number of slots completed in the data section is variable, the actual length of the records as written is also variable. You can calculate an approximate space requirement for the OSA MONITOR SMF data using this maximum, the time interval at which the SMF records are written, and the number of OSA devices you have. The interval at which records are written is defined by the SMFInterval parameter in the OSA MONITOR’s profile - every 15 minutes by default.

Note that if the channel and LPAR values are missing or zero, no SMF record is written to conserve space. The same is not true of I/O and Queue Depth. These records are always written.

Standard SMF Record Header Section

The Header Section appears at the start of every OSA MONITOR SMF record. The value in the record subtype tells you what type of data appears

TABLE 2. OSA MONITOR SMF Record - Header Section

Fieldname	Length	Type	Offset	Description
smfh_length	2	H	0	Record Length
smfh_segdesc	2	H	2	Segment Descriptor
	1	B	4	Reserved
smfh_recordtype	1	B	5	Record Type (user-defined, default 230)
smfh_recordtime	4	C	6	Time since midnight, in 100th sec
smfh_recorddate	4	C	10	Date when the record was moved into the SMF buffer as returned by the IBM TIME macro, unsigned packed decimal
smfh_sysid	4	C	14	System id
	4	C	18	Reserved
smfr_type	2	B	22	Record Type. Set to X‘50’
smfr_subtype	2	H	24	Record subtype. This can be set to: X’00’Channel data X’01’LPAR data X’02’I/O data X’03’Queue Depth data
	2	C	26	Reserved
smfr_prodoffset	2	H	28	Offset to Product Section
smfr_prodlength	2	H	30	Length of Product Section
smfr_dataoffset	2	H	32	Offset to Data Section
smfr_datalength	2	H	34	Length of Data Section
smfr_sparoffset	2	H	36	Offset to spare space in the data section
smfr_sparlength	2	H	38	Length of spare space in the data section

Product Section

The OSA MONITOR Product section is present in all OSA MONITOR SMF records. You should address this section using the offset field provided in the SMF header and for this reason the offsets given here are relative to zero:

TABLE 3. OSA MONITOR SMF Record - Job Section

Fieldname	Length	Type	Offset	Description
smfp_jobname	8	C	0	OSA MONITOR Job Name
smfp_release	4	C	8	OSA MONITOR Version
smfp_ptflevel	8	C	12	OSA MONITOR PTF Level
smfp_builddate	8	C	20	OSA MONITOR build date in format dd/mm/yy
smfp_buildtime	8	C	28	OSA MONITOR build time in format hh.mm padded with blanks
	4	C	36	Reserved

Data and Values Sections

This section contains the layout of the SMF data. You should address this section using the offset field provided in the SMF header and for this reason the offsets given here are relative to zero.

TABLE 4. Data Section

Fieldname	Length	Type	Offset	Description
smfd_timestamp_t	4	F	0	Time in standard time_t format (the number of seconds since January 1 1970)
smfd_numvalues	1	C	4	Number of occurrences of values in the Values segment
smfd_osaname	9	C	5	The name of the OSA device
smfd_osalink	17	C	14	The interface name of the OSA device
smfd_osaresource	11	C	31	The name of the OSA resource
smfd_osaip	40	C	42	IP address in v6 format
smfd_osasysname	5	C	82	System name
smfd_osaplexname	9	C	87	Sysplex name

Following the first part of the Data Section are up to ten occurrences of a ‘Values Segment’. The OSA MONITOR always truncates the physical data record after the last completed values segment so the records will be of variable length. Each values segment, however, takes the same general format. *Note that the offset values given here are for the first values segment only*:

TABLE 5. Values Segments (up to ten of these can be present)

Fieldname	Length	Type	Offset	Description
smfv_objname	34	C	96	Field name (OID Description or OSA MONITOR field name)
smfv_type	2	H	130	Field type of smfv_value. Can be set to: X’00’Percentage X’01’Integer X’02’Q is congested X’03’Q is not congested
	4	C	132	Reserved
smfv_value	8	D	136	

CHAPTER 5 Messages

This chapter contains a list of all information and diagnostic messages that you may find while running OSA MONITOR, and issuing control and display commands through OSA MONITOR.

Overview

OSA MONITOR messages to the system log are of the form ‘ZOM*nnnn*I’ where ‘ZOM’ is the standard message prefix and ‘*nnnn*’ is the message number.

In the event of an error OSA MONITOR attempts to recover and continue to operate, although at worst a task thread may abend causing some loss of function. Often, restarting OSA MONITOR will resolve the issue but if it does recur, especially with unacceptable frequency, you should contact Precisely support for assistance. If you ever find this necessary, you should provide any diagnostic information and return codes given in the message text and in the output datasets - particularly SYSPRINT and ZENTRACE.

OSA MONITOR Messages

TABLE 6. OSA MONITOR Messages

Message Number	Message Text and Explanation
ZOM0001I	Message *message_number* not found This indicates an internal fault in the OSA MONITOR as it has tried to issue a message number that does not exists in its message file. Contact your local Precisely office with the message number *message_number* given in the message text.
ZOM0002I	ZEN OSA MONITOR *version*, PTF Level *PTF_level* Starting up This message is issued when the OSA MONITOR is starting and identifies the version, *version*, and PTF level, *PTF_level*, of the component. This information will always be required by WDS technicians should you ever need to report a problem to your local Precisely office.
ZOM0003I	Processing messages file: *messages_file_path* Issued during the OSA MONITOR's initialization phase as it processes its message file. *messages_file_path* in the message text identifies the location in the HFS of the file containing all of the OSA MONITOR's messages.
ZOM0004I	ZEN OSA MONITOR is not APF authorized The OSA MONITOR requires its load library to be APF authorized and will not initiate otherwise. The implication of this message is that the ZEN installation instructions have not been followed correctly, or that you have not added the ZEN runtime load library to the APF list and performed a re-IPL since the component was originally installed. To correct this problem issue the command: SETPROG APF,ADD,DSN=your-ZEN-hlq.LOADLIB,VOLUME=your-volid from the operator console and restart the OSA MONITOR.
ZOM0021I	ZEN OSA MONITOR *version* shutting down This message as confirmation that the OSA MONITOR's address space has been normally terminated.

TABLE 6. OSA MONITOR Messages (Continued)

Message Number	Message Text and Explanation
ZOM0029I	Startup terminated due to validation errors This message is issued when the OSA MONITOR has detected errors in its parameter file during start-up. It is highly likely that one or more preceding messages will provide details of the specific error that caused the start-up to fail. Use the parameter descriptions in the OSA MONITOR Configuration and Reference manual to correct the errors that were detected and restart the OSA MONITOR. If you find that you cannot correct the errors, contact your local Precisely office for technical support, ensuring that you have the SYSPRINT output to hand.
ZOM0031I	Cannot open parameter file: *filename* The message is most likely to have been caused by an error in your OSA MONITOR startup procedure. Make sure that the name referred to in the message text by *filename* is valid and that it exists.
ZOM0032I	Parameter file processed: *filename* This message confirms that the OSA MONITOR has processed the parameter file given in the message text by *filename*.
ZOM0033I	Invalid value '*value'* for parameter keyword *keyword* You have made an error in the specification of the OSA MONITOR parameter keyword whose value cannot be '*value*'.
ZOM0038I	Invalid Config | Rule parameter: *parameter* You have made a specification error in the configuration or alert rule parameter given in the message text as *parameter*. Use the parameter descriptions in the OSA MONITOR Configuration and Reference manual to correct the error that was detected and restart the OSA MONITOR. If you find that you cannot correct the error, contact your local Precisely office for technical support, ensuring that you have the SYSPRINT output to hand.
ZOM0039I	Invalid keyword: *keyword* The keyword given in the message text by *keyword* is not a valid OSA MONITOR parameter. Use the parameter descriptions in the OSA MONITOR Configuration and Reference manual to make appropriate corrections to the parameter file and restart the OSA MONITOR.

TABLE 6. OSA MONITOR Messages (Continued)

Message Number	Message Text and Explanation
ZOM0040I	Parameter file processing complete. *nnnnn* records read This information message is issued when the OSA MONITOR has completed processing its parameter file and confirms the number of records read, *nnnnn*.
ZOM0050I	Message number too high This message should never be issued but indicates an internal fault in the OSA MONITOR's message definitions. Contact your local Precisely office for technical support.
ZOM0054I	ZEN OSA MONITOR Ready This message is issued when the OSA MONITOR has completed all of its start-up tasks and is now monitoring your OSAs and collecting history data for all OSAs that are configured for collection. You can now log on to ZEN and access all of the OSA MONITOR's display and administration panels.
ZOM0057I	ZEN OSA MONITOR has expired Your ZEN Customer Key which enables the OSA MONITOR has reached the end of its life. If you want to continue to use this ZEN component, contact your local Precisely office who will be able to provide you with an updated Customer Key to re-enable the OSA MONITOR. You can do this dynamically using the Update Customer Key panel which is accessed from the Admin drop-down menu.
ZOM0058I	ZEN OSA MONITOR Expires in *nn* days Your ZEN Customer Key which enables the OSA MONITOR is approaching the end of its life and will expire in *nn* days. If you want to continue to use this ZEN component, contact your local Precisely office who will be able to provide you with an updated Customer Key to extend the life of the OSA MONITOR. You can do this dynamically using the Update Customer Key panel which is accessed from the Admin drop-down menu.
ZOM0059I	ZEN OSA MONITOR feature *feature* not enabled Although your ZEN Customer Key is valid, it does not enable you to use the specific feature *feature*. If you want to use the feature given in the message text, contact your local Precisely office for an enhanced Customer Key.

TABLE 6. OSA MONITOR Messages (Continued)

Message Number	Message Text and Explanation
ZOM0079I	Could not open VTAM ACB: *ZOM_ACB_name*, RC=*return_code*, VTAM RC: *VTAM_rc* This message is issued at OSA MONITOR startup when it is unable to open the VTAM ACB, *ZOM_ACB_name*, that it needs to access TRLE information. The return codes are given in the message text by *return_code* and *VTAM_rc*. The codes can all be found in the IBM Publication 'IP and SNA Codes' for your version of z/OS. The most likely cause is that the OSA MONITOR's VTAM ACB has not been activated, in which case it can be rectified using a: V NET,ACT,ID=*ZOM_ACB_name* command. It can also be caused by the name specified on the VTAMACB parameter in the OSA MONITOR's PARMLIB member being different from that specified during OSA MONITOR installation. The message can also be issued if the ACB name you have specified is already being used by another job. If you cannot resolve the problem given this information, contact your local Precisely office for technical support.
ZOM0081I	Opening VTAM ACB *ACB_name* This message is issued at OSA MONITOR initialization when it opens its VTAM ACB. The ACB name is given in the message text by *ACB_name*.
ZOM0082I	Parameter *parameter* set to *value* This message is issued once for each parameter processed from the OSA MONITOR's parameter file during initialization. It provides a record of the values set for each of the configuration parameters read. *parameter* is the parameter name and *value* is the value to which it has been set. Some parameters are qualified by a unit-type, for example minutes or blocks, so where appropriate this is appended to the message. Note that the values set for the CommunityName and EnterpriseCommunityName parameters will be replaced by asterisks in the message text to avoid any security exposure.
ZOM0085I	SMF Collection activated, interval=*nn* minutes This message is issued as confirmation that the OSA MONITOR has activated SMF data collection and will write SMF records at the interval given in the message text by *nn*. The interval is defined using the SMFInterval configuration parameter.

TABLE 6. OSA MONITOR Messages (Continued)

Message Number	Message Text and Explanation
ZOM0086I	SMF Write error. Return code *return_code* This message is issued when the OSA MONITOR has experienced a serious error while attempting to write an SMF record. The return code from the SMF write is given by *return_code*. This condition is very unusual and would normally be due to an environmental cause outside the OSA MONITOR itself. If the cause is not apparent and you require assistance to resolve this issue, contact your local Precisely office and provide the code given in the message text.
ZOM0087I	SMF Writing will be discontinued This message is issued when the OSA MONITOR has suffered a serious error attempting to write SMF records. Message ZOM0086I will already have been issued to provide feedback information about the error. No more SMF records will be written once this message is received.
ZOM0089I	ZEN OSA MONITOR (c) 2005, *current_year* Precisely. All rights reserved. The OSA MONITOR's copyright message is issued during start-up. *current_year* will always be the current year.
ZOM0100I	User *user* starting OSAMON OSA trace: *trace_definition* The user given in the message text by *user* has just issued the command to start the OSA MONITOR trace definition *trace_definition*. A number of ZOM0102I messages will follow this message according to how many OSA ports are defined in trace definition *trace_definition*.
ZOM0101I	User user ending OSAMON OSA trace: *trace_definition* The user given in the message text by user has just issued the command to end the OSA MONITOR trace definition *trace_definition*. A number of ZOM0103I messages will follow this message according to how many OSA ports are defined in trace definition *trace_definition*.
ZOM0102I	User *user* starting OSAENTA trace on stack: *stackname* for port: *port* This message is issued for each OSA port in a trace definition that is being started. The user who issued the start command is given by *user*, the IP stackname is *stackname* and the OSA port to be traced is given by *port*. This message can be issued at initial trace launch and also after a paused trace is resumed.

TABLE 6. OSA MONITOR Messages (Continued)

Message Number	Message Text and Explanation
ZOM0103I	User *user* stopping OSAENTA trace on stack: *stackname* for port: *port* This message is issued for each OSA port in a trace definition that is being stopped. The user who issued the stop command is given by *user*, the IP stackname is *stackname* and the OSA port being traced is given by *port*. This message can be issued at trace stop time and also when a trace is paused (possibly to be resumed later).
ZOM0104I	User *user* starting SYSTCPOT CTrace on stack: *stackname* This message is issued once for each OSAENTA trace definition that the OSA MONITOR starts. The user who started the trace is given by *user* and the IP stack on which the CTRACE is being activated is given by *stackname*.
ZOM0105I	User *user* stopping SYSTCPOT CTrace on stack: *stackname* This message is issued once for each OSAENTA trace definition that the OSA MONITOR stops. The user who stopped the trace is given by *user* and the IP stack on which the CTRACE is being deactivated is given by *stackname*.
ZOM0106I	User *user* starting External Writer: *procname* The external writer is being started on behalf of user *user* for PROC name *procname*. This message is always issued last in the set of messages issued when a trace is started.
ZOM0107I	User *user* stopping External Writer: *procname* The external writer is being stopped on behalf of user *user* for PROC name *procname*. This message is always issued last in the set of messages issued when a trace is stopped.
ZOM0108I	OSAMON OSA Trace *trace_definition* is started The OSA MONITOR has started the trace definition identified in the message text by *trace_definition*. Frames for any ports specified in the trace definition will now be captured provided they pass any filtering specifications.

TABLE 6. OSA MONITOR Messages (Continued)

Message Number	Message Text and Explanation
ZOM0109I	OSAMON OSA Trace *trace_definition* has ended This message is issued in confirmation that the OSA MONITOR has sucessfully stopped the trace definition identified in the message text by *trace_definition*. Once this message has been issued the trace is available for analysis using IPCS, or can be imported and analyzed by Precisely own EXIGENCE product (from version 4.7).
ZOM0110I	OSAENTA Trace has been active on port *port_name* for *nn* minute(s) Issued for long-running OSAENTA traces, this information message keeps you informed of the time that the trace has been active.
ZOM0111I	Parameter *parameter_name* is no longer required and has been ignored The Console and ConsoleTimeout parameters are no longer required but the redundant parameter named in the message text remains in your OSA MONITOR Profile. This causes no harm as it is ignored but it should be removed when convenient to save confusion later.
ZOM0112I	ZEN needs to be started for console commands to be processed Self-explanatory. The OSA MONITOR makes use of ZEN's Command Processing Manager which it cannot currently do as ZEN is not active (or if it is, the OSA MONITOR is not currently connected to it). Processing continues and the OSA MONITOR will activate (or remain active) but as ZEN is not active you will not be able to access any OSA MONITOR panels and the data that the OSA MONITOR is capturing will be incomplete. Restart your ZEN as soon as possible as there are features of the product that will not work if the OSA MONITOR cannot issue commands via ZEN.

TABLE 6. OSA MONITOR Messages (Continued)

Message Number	Message Text and Explanation
ZOM0113I	ZEN OSA MONITOR has <*not yet* | *now*> connected with ZEN This message is issued in one of the two formats given above during OSA MONITOR initialization to indicate the status of its connection to ZEN. Until the connection has taken place ('not yet' in the message text), the OSA MONITOR will not be able to issue any z/OS commands. If this message is followed by message ZOM0112I you need to start ZEN, otherwise use the messages in the SYSPRINT output from your OSA MONITOR and ZEN address spaces to see whether you can determine why this has occurred. If you have started the OSA MONITOR in error and actually want to terminate it, note that in this state you will have to cancel the address space using the 'C' command rather than using the more usual 'P' command (because this status is so early in the OSA MONITOR's initialization that the Shutdown Processor has not yet started). As soon as the OSA MONITOR has connected to ZEN the message will read '... has now connected with ZEN' and processing will continue normally. If you are unable to get the OSA MONITOR to connect to ZEN, contact your local Precisely office for technical support.
ZOM0114I	No response from '*command*' command The OSA MONITOR has issued the command given in the message text but there has been no response. This message may be issued from time to time, especially if you restart your ZEN address space or you have an issue with ZEN's ACB, both of which should be checked first. However, if you see many of these messages over a longer period of time than a few minutes then it could indicate a more serious issue.
ZOM0115I	ZEN OSA MONITOR can now resume command processing There has previously been a problem issuing commands, possibly because the ZEN address space was not available for a short time. This situation has now been resolved and command processing is taking place normally again.
ZOM0116I	OSAENTA Trace start failed Issued as a final confirmation message that your request to start an OSAENTA trace has failed. There will be one or more preceding messages that should enable you to pinpoint and resolve the problem. If after reviewing all related messages and taking any corrective action you remain unable to start the trace, contact your local Precisely office for technical support.

TABLE 6. OSA MONITOR Messages (Continued)

Message Number	Message Text and Explanation
ZOM0126I	New configuration applied by user *user* This message is issued as confirmation that the OSA MONITOR's configuration has been applied and any changes made will take effect (and the OSA discovery process will also be re-initiated). Note that to make any changes permanent, the Save action button must be used.
ZOM0129I	Could not perform VTAM Command. ACB: *ZOM_ACB_name* RC=*return_code*, VTAM rc *VTAM_rc*, FDB2=*feedback_code*, command: '*VTAM_command*' The OSA MONITOR has attempted to issue a VTAM command but the attempt has failed. The return codes are given in the message text by *return_code* and *VTAM_rc* and the feedback code *by feedback_code*. The codes can all be found in the IBM Publication 'IP and SNA Codes' for your version of z/OS. The most likely cause is that the OSA MONITOR's VTAM ACB is not active (*VTAM_rc*=x'10', *feedback_code*=x'0D') which can be rectified using a V NET,ACT,ID=*ZOM_ACB_name* command. If you cannot resolve the problem given this information, contact your local Precisely office for technical support.
ZOM0134I	SNMPApi Initialisation failed RC=*rc*. SNMP will not be monitored. This message is issued when the OSA MONITOR fails to connect to a local SNMP daemon to obtain interface data or cannot access the local MIB Data and Descriptor files as defined in ZOMPARM. ZOM0164I message will proceed this if this is the cause of the issue. The SNMP error return code *rc* is produced to assist in fault diagnosis. This is a permanent failure and will require a restart of OSA monitor to rectify, once the issue is resolved.
ZOM0140I	ZEN OSA Detected TCPIP Stack *stack_name* This message is issued when the OSA MONITOR detects a TCPIP stack called *stack_name* during its discovery process. This message can be issued multiple times in a multi-stack environment.

TABLE 6. OSA MONITOR Messages (Continued)

Message Number	Message Text and Explanation
ZOM0141I	OSA *osa_name* with CHPID *chpid* detected on *lpar* Interface *interface_name* (*protocol*) IP *IPaddress* This message is issued when the OSA MONITOR detects an OSA *osa_name* and its associated *chpid* during the discovery process. It displays the *lpar* on which the OSA port is detected. Ports from other systems can be discovered if run in a Focal Point server configuration. It also displays the interface name *interface_name*, stack, and *IPaddress* associated with that interface.
ZOM0142I	OSA Port *port_name* detected as *osa_hardware* (*hardware_type*) with CSS=*css* This message is issued when the OSA hardware family *osa_hardware* and type *hardware_type* for a discovered local or remote OSA port *port_name* is matched using the supplied MIB Descriptor file (MI2) referenced in the OSA Profile member. It also displays the Channel Subsystem *css* attached to the hardware.
ZOM0143I	Unable to determine *hardware_type* for OSA *port_name* This message is issued when the OSA MONITOR detects an OSA but cannot determine the *hardware_type* associated with the *port_name*. Review your OSAType definitions in your OSA Monitor Profile to ensure that the correct hardware is included in the search order. Each OSAType to be searched must reference the correct port descriptor and port table, which can be found in the associated MIB data and descriptor files as specified in the *mibdatapath* and *mibmi2path* parameter respectively. For examples of these parameters, refer to the example ZOMPARM in the “Configuring the OSA MONITOR” on page 13.
ZOM0144I	Unable to determine port table for OSA *osa_name* This message is issued when a discovered OSA *osa_name* cannot be matched to an internal port table or type within the loaded *mibdatapath* file. It is only issued when attempting to view data obtained from SNMP. Ensure that the correct OSAType and port table value are included in your OSA Monitor parameter file, without this SNMP information cannot be obtained.

TABLE 6. OSA MONITOR Messages (Continued)

Message Number	Message Text and Explanation
ZOM0145I	RoCE with CHPID *chpid* detected on *lpar* Interface *roce_interface_name* (*protocol*) This message is issued when a RoCE adaptor is detected by the OSA MONITOR. It displays the CHIPID *chpid*, LPAR ID *lpar*, the RoCE interface name *roce_interface_name,* and the TCPIP stack *protocol* that are attached to the RoCE interface.
ZOM0150I	Unable to open file *file_name* This message is issued when OSA MONITOR cannot locate/open a particular file. Note that this message is informational only and has no impact on OSA MONITOR functionality.
ZOM0151I	Unable to open history archive rc=*return_code* This message is displayed if the OSA MONITOR is unable to open the history file and provides a RC *return_code* value to assist in fault diagnosis. Check the status of the allocated VSAM history file. If you are unable to determine the cause, contact Precisely technical support.
ZOM0152I	Unable to *load*|*save*|*size*|*map*|*unmap*|*copy* history file rc= *return_code* This message is issued when one of the previous actions is being attempted on the history file but was unsuccessful. It will also display the *return_code* following that action to assist in fault diagnosis. Check the status of the allocated VSAM history file. If you are unable to determine the cause, contact Precisely technical support.
ZOM0153I	History file *warm*|*cold* started: Blocks *blocks* Inuse *blocks_in_use* This message displays the start-up mode *warm*|*cold* for the associated history file as referenced in the OSA Monitor start-up procedure. It will also state the number of *blocks* assigned to the file, the number of blocks currently in use *blocks_in_use,* and the *file_version.* During normal processing, and when using an existing history file, the history file should be warm started. If the history file is cold started, it is likely that the history file is re-initialised or a new history dataset is in use. The START parameter that can be passed to the OSA Monitor process does not affect this value.

TABLE 6. OSA MONITOR Messages (Continued)

Message Number	Message Text and Explanation
ZOM0160I	ZEN OSA *Active*|*Inactive* on LPAR *lpar* in Sysplex *sysplex* MIF=*mif* This message confirms that the status *Active*|*Inactive* of a discovered OSA port from a client that is connected to the local focal point and will not be displayed on the client's OSA Monitor output. It also displays the associated *lpar*, *sysplex* and MIF ID *mif* from the client where the port was discovered.
ZOM0161I	ZEN OSA is running as a focal point on Port *port* This message confirms that the current OSA MONITOR is set up as a focal point server and is ready to receive connections from other OSA monitor clients on the specified *port*. For more information regarding focalpoints and how a client or server configuration can be established, refer to "FocalPoint Parameter" on page 16.
ZOM0162I	ZEN OSA is connected to focal point on *lpar* Port *port* This informational message confirms that the current OSA MONITOR is set up as a focal point client and is successfully connected to the focal point server on *lpar* using *port*. This message will be displayed for every server, the client is configured to connect. For more information regarding focalpoints and how a client or server configuration can be established, refer to "FocalPoint Parameter" on page 16.

TABLE 6. OSA MONITOR Messages (Continued)

Message Number	Message Text and Explanation
ZOM0163I	ZEN OSA is disconnected from focal point on *lpar* Port *port* This message is issued when an active client connection to a focal point server on *lpar* using *port* is lost. Ensure that the configured focal point server is operational, and the chosen port and IP address as defined by the Focalpoint parameter values in your client's ZOMPARM can be reached. For more information regarding focalpoints and how a client or server configuration can be established, refer to "FocalPoint Parameter" on page 16.
ZOM0164I	Unable to open *MIB file(s)* The message is issued if the OSA MONITOR is unable to open either of the files referenced by *mibdatapath* or the *mibmi2path* parameters in the ZOMPARM configuration file. Without access to these files, you cannot obtain the SNMP data for any discovered ports and the subsequent message ZOM0134I will be issued to confirm that this functionality is disabled. If you want to collect SNMP data, ensure that the files referenced can be located at the chosen path, contains the expected data, and the started task user ID of OSA MONITOR has READ access to these files. You must restart the OSA MONITOR to resolve this issue.

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