

EView/390z Management for Systems Center Operations Manager

Concepts Guide

Software Version: 6.4



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Documentation Map

Introduction

EView/390z Management for Systems Center Operations Center (EV/390) provides a set of manuals that help you use the product and understand the concepts underlying the product. This section describes what information is available and where you can find it.



In addition to EV/390 documentation, related Microsoft Systems Center products provide a comprehensive set of manuals that help you use the products and improve your understanding of the underlying concepts.

EView/390z Printed Manuals

This section provides an overview of the printed manuals and their contents.

EView/390z Management for Systems Center Operations Manager Concepts Guide

Explains EV/390 features, functions, architecture, and data flow. Describes EV/390 agent and server components, process management and SCOM integration

EView/390z Management for Systems Center Operations Manager Installation Guide

Explains how to install, de-install, and configure EV/390z. Also includes how to upload installation files from the proxy server, and start and stop EV/390z processes.

EView/390z Management for Systems Center Operations Manager Administrator's Reference

Explains how to customize and use EV/390z. Also includes detailed troubleshooting procedures and explanations of EV/390z system messages.

EView/390z Management for Systems Center Operations Center Management Pack Administrator's Guide

Explains how to import EView Management Packs, configure EView/390z components, configure discovery overrides, and understand rules and tasks. Also includes troubleshooting procedures.

EView/390z Online Information

The following information is available online:

- *EView/390z Management for Systems Center Operations Manager Product Brief*
- *EView/390z Management for Systems Center Operations Manager EV390 Checklist*
- *EView/390z Management for Systems Center Operations Manager Concepts Guide*
- *EView/390z Management for Systems Center Operations Manager Installation Guide*
- *EView/390z Management for Systems Center Operations Manager Administrator's Reference*
- *EView/390z Management for Systems Center Management Pack Administrator's Guide*



About EView/390z

This chapter describes EView/390z Management for Systems Center Operations Center (EV/390). It also provides a brief overview of its benefits, architecture, and data flow.

What is EView/390z?

EView/390z Management for Systems Center Operations Center (EV/390) integrates the OS/390 mainframe platform into Systems Center Operations Center (SCOM). With the addition of EView/390z, SCOM provides you with true end-to-end management of your information technology (IT) environment, from PCs to mainframe computers.

What EView/390z Does

EView/390z is closely integrated into the SCOM management server. An EView/390z agent monitors the S/390 mainframe environment for important events and critical situations. These event and situation messages are communicated via TCP/IP to the SCOM management server, where an appropriate automatic or operator action can be issued back to the mainframe.

Benefits of EView/390z

EView/390z provides you with the following benefits:

- Compatibility with OS/390 and z/OS

Ability to co-exist with currently installed OS/390 management solutions.

- Health Monitoring for S/390 Systems

Health monitors for S/390 systems and their standard business applications.

- Consolidated Management View

Consolidated end-to-end management view, which gives you a business-centric perspective.

- Automatic Problem Resolution

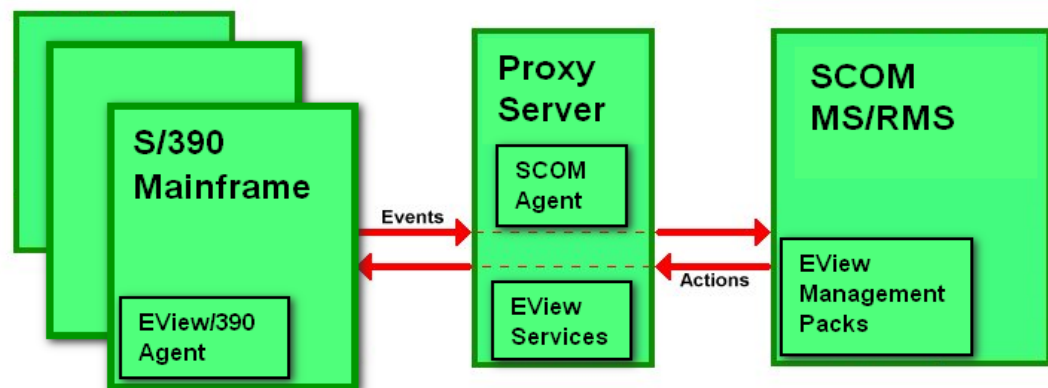
Two-way communication with S/390 systems to resolve problems quickly and automatically.

About EView/390z Architecture and Data Flow

EView/390 consists of two main components: the agent component which runs on the S/390 mainframe, and the server component which runs on the proxy server. Mainframe messages are forwarded from the agent to the proxy server and rule processing is done on the proxy server. If the messages match the rules, they will be forwarding to the SCOM console via the SCOM agent. This pulls most of the message processing work off of the mainframe, where CPU time is a more valued resource.

Figure 2-1 shows the data flow between the S/390 mainframe and the SCOM console through the proxy server

Figure 2-1



Similar to other Management Pack solutions on SCOM platform, you can extend your EView/390z to respond to critical S/390 events and messages through pre-defined automatic actions and resolution instructions, or by creating trouble tickets to notify your operations staff. Messages coming from the S/390 are routed to the EView390 view on the SCOM console. After a critical situation is resolved, the messages are acknowledged in SCOM.

Increasing Productivity

Consolidating the management of mainframes and other systems with SCOM enables you to act proactively on critical events and messages. Using this intuitive and cost-effective solution as the central end-user interface provides the basis for service level management.

About the EView/390z Agent

This chapter describes the agent and agent components provided with EView/390z.

What is EView/390z Agent Does

The EView/390z agent operates as an OS/390 or z/OS started task. Mainframe messages are collected by the agent from several sources, outlined below. Pre-defined messages filters identify important messages which are then packaged into a common data structure and forwarded via TCP/IP to the proxy server for processing.

References to "OS/390" herein can be substituted with "z/OS".

Forwarding OS/390 Messages

OS/390 messages can include information from about the following:

- Operating System
- DB2 (Data Base 2)
- JES2 (Job Entry Subsystem 2)
- MQSeries (Message Queuing Series)
- CICS (Customer Information Central System) utilizing an EView/390z exit program in the CICS address space
- WebSphere

Forwarding VTAM Messages

The OS/390 network task, VTAM, issues messages regarding the mainframe SNA network. The EView/390z agent collects these VTAM messages through the VTAM PPO interface (see "About the PPO Subtask").

Forwarding DB2 Management Data

EView/390z provides the ability to monitor DB2 messages that are sent to the OS/390 system console, including additions to the default rules for monitoring critical DB2 messages and processes.

Forwarding Performance and Utilization Data

EView/390z performance and resource utilization data is provided by an API interface to the EView/390z agent to retrieve direct access storage devices (DASD) utilization statistics. An interface to the IBM Resource Monitoring Facility (RMF) is provided to collect and forward performance information to the proxy server.

Forwarding WebSphere Management Data

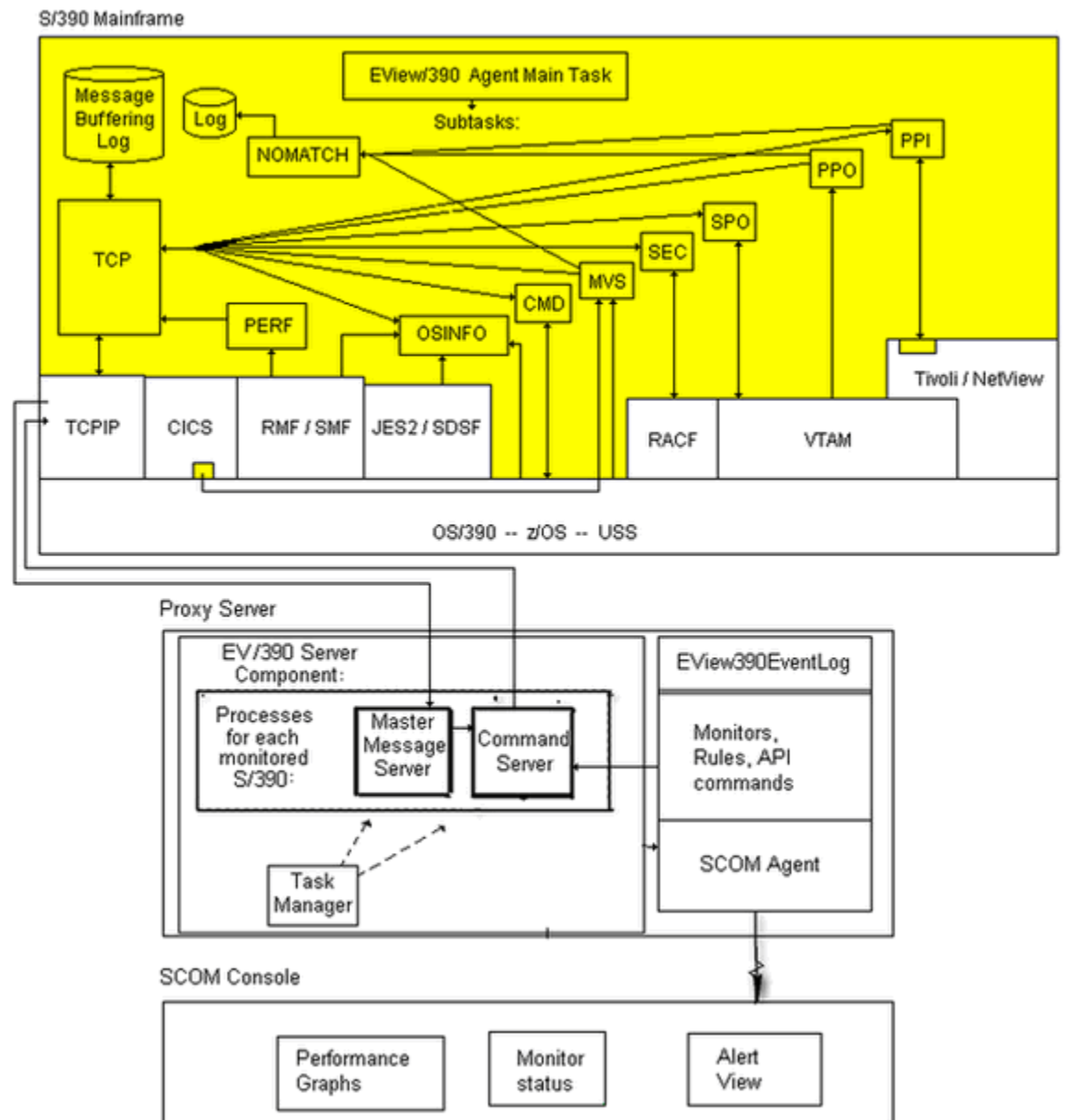
EView/390z provides the ability to monitor WebSphere messages that are sent to the OS/390 system console. Included are additions to the default rules for monitoring critical WebSphere messages and processes.

Components of the EView/390z Agent

In the EView/390z agent, the main task activates several subtasks which interact with the various mainframe message sources. Collected messages are transferred to the TCP subtask, which is responsible for forwarding the information to the EView/390z component on the Proxy Server.

Figure 3-1 highlights the components of the EView/390z agent.

Figure 3-1 EView/390z Agent Components



About the EView/390z Main Task

The EView/390z agent executes as a started task or batch job on the mainframe system. The Job Control Language (JCL) starts the main task program. The main task program opens and reads initialization cards from System Input (SYSIN). Each SYSIN card specifies a subtask to be started. As the cards are processed, a set of interprocess communication queues are set up in storage to be shared by the main task and all subtasks. All communication between tasks within the EView/390z agent is accomplished by these queues. The EView/390z agent starts the identified subtask for each SYSIN card. After SYSIN card processing is complete, the EView/390z agent main task routes messages between the subtask queues and processes maintenance commands from the console operator.

About EView/390z Subtasks

The EView/390z agent subtasks collectively provide all the necessary communications and system interfaces. Each of the subtasks are dedicated to a particular interface function and communicates with other subtasks using the EView/390z agent interprocess communications queues.

Types of Subtask Queues

Each subtask uses the following two queues:

Subtask Input Queue

Queue used for messages destined for processing in the subtask interface. These messages can be commands for execution or messages to be transmitted to the EView/390 server component.

Subtask Output Queue

Queue used for messages that are the result of subtask processing. Messages from this queue are routed by the main task to other subtasks for processing.

About the TCP Subtask

The TCP/IP Workstation (TCP) subtask is an executable that requests the opening of two TCP/IP ports from the TCP/IP address space on the mainframe, then waits for the EView/390z server component to start communication with the EView/390z agent mainframe component through these ports. The TCP subtask accepts commands from the EView/390 server component, routes them to the appropriate subtask for execution, and sends the replies back to the Proxy server component over a TCP/IP port.

As a rule, you must have one TCP subtask define for each EView/390z server component that will be connecting to the mainframe through TCP/IP.

About the CMD Subtask

The Command (CMD) subtask is an executable that does the following:

1. Establishes an extended Multiple Console Support (MCS) console for EView/390z.
2. Receives OS/390 commands (for example, Modify) from the EView/390z server components.
3. Sends the commands to the defined console.
4. Receives the response messages from OS/390.
5. Sends the OS/390 responses back to the EView/390z server component that initiated the command.

About the MVS Subtask

The MVS Messages (MVS) subtask is an executable that does the following:

1. Establishes an extended MCS console for EView/390z.
2. Receives OS/390 messages.
3. Forwards OS/390 messages to all active EView/390z server components.

About the SEC Subtask

The Security Access (SEC) subtask is an executable that issues user ID and password requests to the mainframe security product.

The EView/390z agent has been tested successfully with the following software products:

- RACF (IBM Resource Access Control Facility)
- ACF2 (Computer Associates Advanced Communications Functions 2)

The SEC subtask accepts user IDs, passwords, and (optionally) new passwords to be sent to RACF or ACF2 for verification. It also sends one of several return codes back to the requesting EView/390 server component subtask based on the response from RACF or ACF2./390 server component that will be connecting to the mainframe through TCP/IP.

About the SPO Subtask

The Secondary Program Operator (SPO) subtask is an executable that does the following:

1. Initializes a SPO Active Control Block (ACB) to VTAM.
2. Receives VTAM commands (for example, Vary or Display) from EView/390z server component subtasks.
3. Sends the commands to VTAM over the SPO.
4. Receives the response messages from VTAM.

5. Sends response messages back to the EView/390z server component subtask that initiated the command.

If several commands arrive at nearly the same time from different SCOM operators, the EView/390z agent allows multiple SPO subtasks to distribute the work.

About the PPO Subtask

The Primary Program Operator (PPO) subtask is an executable that initializes a PPO ACB to VTAM. This initialization enables the ACB to receive unsolicited messages from VTAM, most importantly messages about status changes of VTAM resources. The PPO subtask forwards these messages to all active EView/390z server subtasks.

Because VTAM allows only one application on the system to act as the PPO receiver, you should define the PPO subtask only if the system does not have NetView/390 or SOLVE:NETMASTER running. If NetView/390 or SOLVE:NETMASTER is present, use the PPI subtask instead.

About the PPI Subtask

The Program-to-Program Interface (PPI) subtask is an executable that communicates with the NTIPPI executable that runs as a user exit in the NetView/390 or SOLVE:NETMASTER address space. Because the NetView/390 or SOLVE:NETMASTER application controls the PPO connection to VTAM, EView/390 requires that the NTIPPI exit be installed to pass on incoming VTAM information to the EView/390 agent. The PPI subtask then passes the VTAM messages to active EView/390z server component subtasks.

Use the PPI subtask only if a NetView/390 or SOLVE:NETMASTER is present on the system. Otherwise, use the PPO subtask.

About the PERF Subtask

The Performance subtask uses an API into IBM's Resource Monitoring Facility (RMF) to collect a wide range of data regarding the mainframe and jobs running on it. The PERF subtask solicits the RMF information on a user-defined time interval, and forwards the collected information to the Proxy Server.

About the OSINFO Subtask

The Operating System Information subtask collects on-demand information about the mainframe system, its active address spaces, DASD statistics, memory usage, and submitted jobs. These data can be requested at any time using a command script on the management server to allow users to develop customized queries about the status of the mainframe.

About the Subtask Restart Function

As an extension to the EView/390z main task, the EView/390z agent has a subtask restart function that automatically restarts the mainframe subtasks when communication is lost from the host. This restart function eliminates the need to restart the entire EView/390z agent address space.

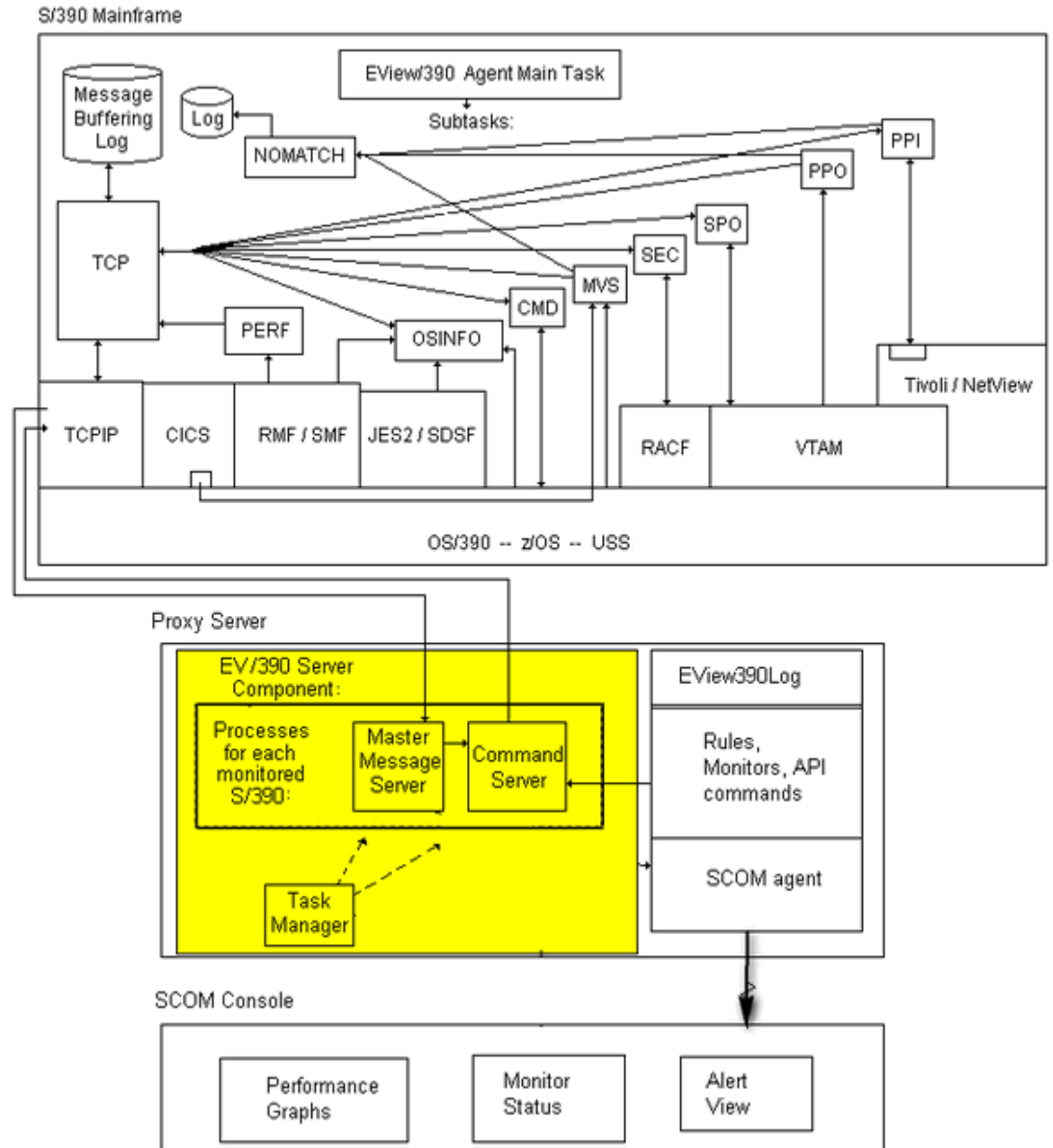
About the EView/390z Server

This chapter describes the server components and process management provided by EView/390z Management for SCOM (EView/390).

About Server Components

Figure 4-1 shows the EView/390z server components running on the Proxy Server and the data flow to the mainframe agent.

Figure 4-1 EView/390z Server Components



Mainframe Node Processes

For each mainframe node that is monitored and controlled by the proxy server, EView/390 starts two server processes:

Master Message Server (MMS)

The Master Message Server (MMS) is the primary server for EView/390z on the proxy server. All incoming EView/390z data comes through the MMS and is forwarded to the SCOM agent for monitor/ rules processing, and from there to SCOM console alert view.

Command Server

The Command Server forwards monitor action requests to a mainframe system for execution and delivers the response back to SCOM console.

Additional Server Components

About the Task Manager

EView/390z provides a Task Manager application on the Proxy Server to start, stop, or check the status of the EView/390z processes for a particular mainframe node. The Task Manager is also used to add a new mainframe node to SCOM or edit specific configuration parameters used by each node.

EView/390z Integration into SCOM

This chapter displays a sample of SCOM console screenshots of EView/390 Management for SCOM (EView/390).

Selected SCOM console screenshots

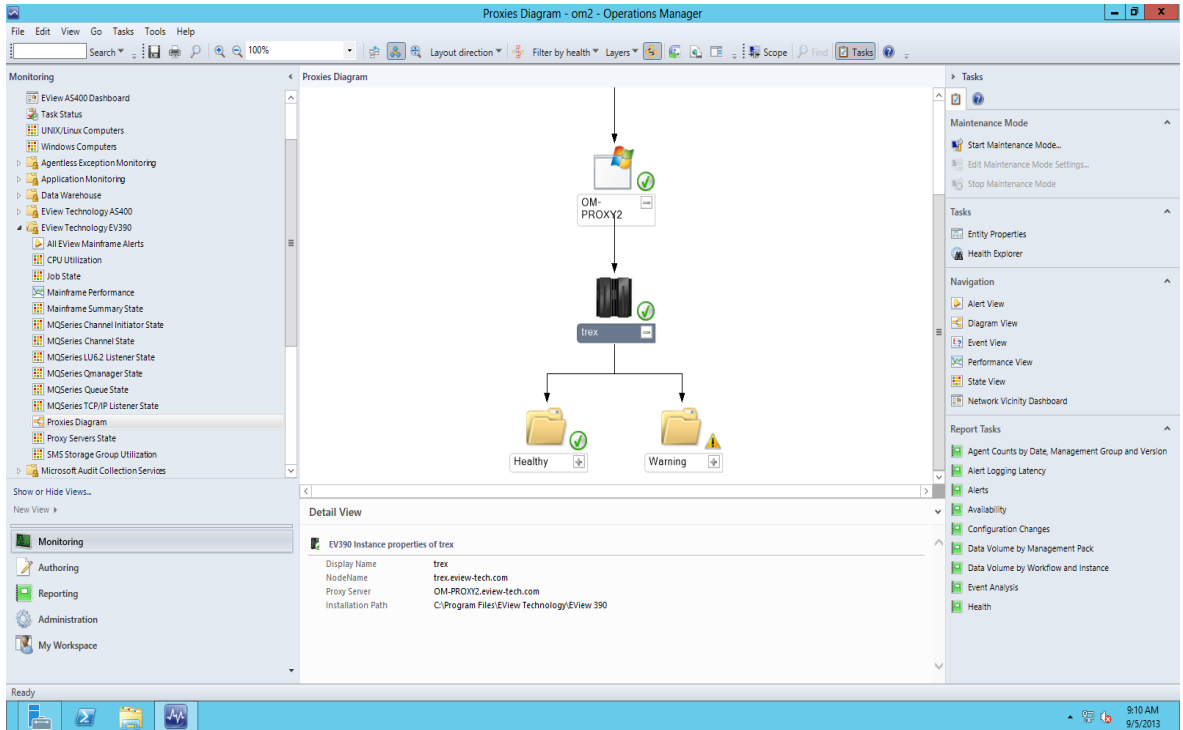
EView/390z adds functionality to 14 status views, performance graph, and diagram to the SCOM monitoring console. The following shows only 4 sample views on the SCOM console:

- Proxy server and mainframe discovery
- Mainframe alerts
- Mainframe monitor summary state view
- Mainframe performance graphs

About the proxy server and mainframe discovery

EView/390z adds a “Mainframe” to the proxy server sub tree. All S/390 managed nodes will appear under this proxy server.

Figure 5-1 Proxy server and mainframe



About the Mainframe Alerts

EView/390z adds a “Mainframe Alerts” view to the SCOM monitoring console. Each alert details the severity, description, and knowledge with summary, cause and resolution.

Figure 5-2 Mainframe Alerts

The screenshot displays the SCOM Operations Manager interface for monitoring mainframe alerts. The central pane shows a list of seven alerts, categorized by severity: Critical (2) and Warning (5). The selected alert, 'HASP050', is detailed in the 'Alert Details' pane below. The alert description indicates a resource shortage of TGS (80% utilization) on the EV390 system. The left navigation pane shows the 'Monitoring' tree with 'All EView Mainframe Alerts' selected. The right pane provides various actions and tasks for the alert.

Icon	Source	Name	Resolution State	Created	Age
Critical	trex	HASP050	New	9/5/2013 3:14:51 AM	6 Hours, 5 Min...
Critical	trex	HASP050	New	9/4/2013 11:49:44 PM	9 Hours, 30 Mi...
Warning	trex.eview-tech...	EV390 MQSeries QueueName	New	8/31/2013 2:05:25 PM	4 Days, 19 Hour...
Warning	trex.eview-tech...	EV390 SMS monitor	New	8/26/2013 10:11:53 AM	9 Days, 23 Hour...
Warning	trex.eview-tech...	EV390 MQSeries Channel status	New	8/26/2013 10:07:27 AM	9 Days, 23 Hour...
Warning	CSQ7:Not started	EV390 MQSeries Qmgr LU6.2 Listener status	New	8/26/2013 10:07:27 AM	9 Days, 23 Hour...
Warning	CSQOCHIN.trex...	EV390 MQSeries Job monitor	New	8/26/2013 10:06:52 AM	9 Days, 23 Hour...

Alert Details: HASP050

Alert Description: Event Description: EV390: trex.eview-tech.com *SHASPO50 JES2 RESOURCE SHORTAGE OF TGS - 80% UTILIZATION REACHED

Source: trex

Full Path Name: OM-PROXY2.eview-tech.com/OM-PROXY2.trex

Alert Rule: HASP050 Resource Shortage

Created: 9/5/2013 3:14:51 AM

Summary: JES2 issues message SHASPO50 to indicate shortage(s) of Resources. JES2 resource shortages might be temporary and occur during periods of heavy utilization or the shortages might be permanent and impact JES2 processing. Typically, a resource shortage is the result of not specifying a large enough value for a resource in your JES2 initialization statements.

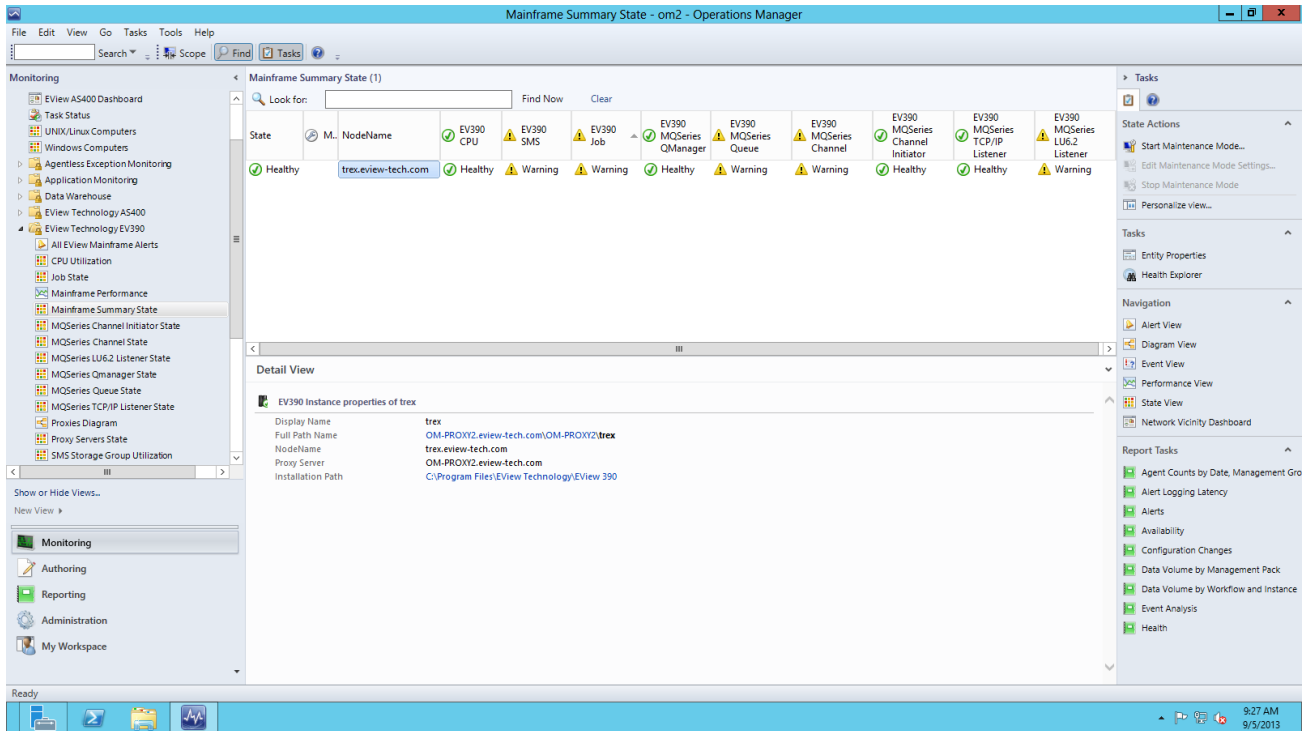
Causes: JES2 has a shortage of resources described in the message text.

Resolutions: Notify the system programmer or if the resource is either JOE's or JOE's then take the action defined by your operating procedures to relieve the shortage.

About Mainframe monitoring summary state

EView/390z adds a “Mainframe” summary state view to SCOM monitoring console with default and overridden system monitors and message processing rules for the S/390.

Figure 5-3 Mainframe Summary State



About Mainframe performance graph

EView/390z adds a “Mainframe” performance graph view to the SCOM monitoring console. Select one or more performance rules (27 rules in total) to examine the data over a selected time range. The following graph shows the CPU utilization and device response time during an 8-hour period.

Figure 5-4 Mainframe Performance Graph

