

EView/400i Management Pack for Systems Center Operations Manager (SCOM)

Concepts Guide

Version 7.1



May 2017

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Documentation

EView/400i Management for Systems Center Operations Manager (EView/400i) 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 EView/400i documentation, related Microsoft Systems Center Operations Manager products provide a comprehensive set of manuals that help you use and understand the products' underlying concepts.

EView/400i Printed Manuals

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

- *EView/400i Management for Systems Center Concepts Guide*
Explains EView/400i features, functions, architecture, and data flow. Describes EView/400i agent and server components, process management and SCOM integration.
- *EView/400i Management for Systems Center Installation Guide*
Explains how to install and de-install the EView/400i Management Pack and associated files. Also includes how to transfer installation files from the Systems Center server or proxy server to the iSeries agent.
- *EView/400i Management for Systems Center Administrator's Reference*
Explains how to customize and use EView/400i. Also includes troubleshooting procedures and explanations of EView/400i system messages.
- *EView/400i Management for Systems Center Management Pack Administrator's Guide*
Explains how to import EView Management Packs, configure AS/400 components, configure discovery overrides, and understand rules and tasks. Also includes troubleshooting procedures.

EView/400i Online Information

The following information is available online:

- *EView/400i Management for Systems Center Concepts Guide*
- *EView/400i Management for Systems Center Installation Guide*
- *EView/400i Management for Systems Center Administrator's Reference*
- *EView/400i Management for System Center MP Administrator's Guide*
- *EView/400i Management for Systems Center Software Release Notes*

About EView/400i

This chapter describes EView/400i Management Pack for Systems Center Operations Manager (EView/400i). It also provides a brief overview of its benefits, architecture, data flow, and installation requirements.

What is EView/400i?

EView/400i Management integrates the iSeries (AS/400) system platform into Microsoft's Systems Center Operations Manager (SCOM). With the addition of EView/400i, SCOM provides you with end-to-end management of your IT environment, from PCs to iSeries computers.

What EView/400i Does

The EView/400i Management Pack monitors the iSeries system environment via a proxy server to capture system performance statistics, system messages, and application messages which correlate to important events and critical situations. This information is then sent to the SCOM Management Server for processing and action by the Management Pack rules and monitors.

Benefits of EView/400i

EView/400i provides you with the following benefits:

- **Health monitoring for iSeries Systems**

Monitors the status and health of the iSeries systems and standard applications. Alerts coming from the iSeries are routed to the Active Alerts list on the SCOM user's console.

- **Performance monitoring**

Monitor iSeries ASPs, CPU usage, individual disk busy and I/Os, percentage of permanent address, percentage of temporary address and number of active jobs in the system.

- **Threshold and status monitoring**
 - TCP connection status between proxy server and the iSeries
 - ASP #1, ASP #2 and ASP #33 or iASP
 - Job status, job counts, job lock, Message Wait, Mutex wait, Time wait and CMTW wait
 - Job queues and output queues thresholds
 - Job Queue's status
 - Memory Pool thresholds
 - Library size and object counts thresholds
 - MQSeries Qmanager status, queue depth thresholds and channel status.
- **Automatic acknowledgement of replied inquiry message rules**
- **Problem Resolution**

Two-way communication with iSeries systems to resolve problems quickly and automatically. EView/400i responds to critical iSeries messages with pre-defined resolution instructions and actions.

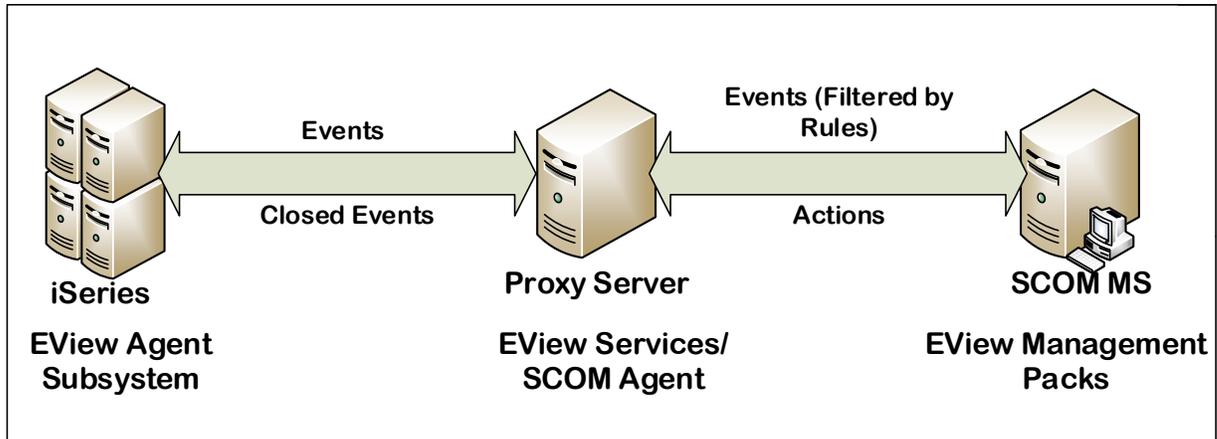
About EView/400i Architecture and Data Flow

iSeries system management is provided by monitoring messages that are generated to the QHST history log, QSYSOPR and other message queues. The message filtering functionality of EView/400i allows you to select the messages to be captured and transmitted to SCOM making the information data stream more efficient.

Data Flow

Figure 3-1 shows the data flow provided by EView/400i between the iSeries systems and a proxy server and a SCOM Management Server.

Figure 3-1: EView/400i Data Flow



Installation Requirements

This section describes the operating system, hardware, and software requirements for installing EView/400i software. To avoid problems during installation, verify that the target site has met these requirements.

Hardware Requirements

- **Proxy Server:**

EView/400i requires a proxy server with appropriate Ethernet hardware to communicate to the SCOM server (MS or gateway) and the iSeries agent(s).

Note: **(EView/400i must not be installed on the SCOM management server.)**

All other hardware requirements are the same as the requirements for a proxy server.

- **iSeries Managed Node:**

EView/400i requires the appropriate Ethernet hardware on the iSeries to allow for TCP/IP communication with the proxy server.

In addition, make sure that the SCOM server, proxy server, and iSeries managed nodes meet the disk space requirements described in Table 2-1.

Table 2-1: Additional Disk-Space Requirements

Machine	Disk Space
SCOM Server	1 MB
Proxy Server	15 MB

Machine	Disk Space
iSeries Managed Node	20 MB

Software Requirements

- **On the Systems Center Operations Manager server:**

Installation of EView/400i requires the pre-existence of one of the following:

- Microsoft System Center Operations Manager 2012 R2 or 2016

- **On the Proxy Server**

- EView/400i can be installed on Microsoft Windows Server 2008 R2 with Service Pack 1, Windows Server 2012 SP1, Windows Server 2012 R2, and Windows Server 2016
- The proxy server must have the SCOM agent running to communicate to the SCOM server.
- EView/400i tools require a Perl language environment that has the net::ftp function available. The recommended Perl distribution is ActivePerl version 5.22 or higher. The Perl community version is available from <http://www.activestate.com>.
- Add .NET Framework 3.5 feature

This feature requires for EView/400i installer to work properly

- **On the iSeries Managed Node:**

- EView/400i requires i5/OS (OS/400) V5R3 or higher on the iSeries managed nodes.
- EView/400i requires the TCP/IP network protocol stack to be active.

About the EView/400i Agent

This chapter describes the EView/400i agent components which run on the iSeries system.

What the EView/400i Agent Does

The EView/400i agent runs as a subsystem that monitors your iSeries environment. The agent captures all iSeries system and application generated messages. These messages are then filtered based on values you have configured and then distributed to the SCOM proxy server. The agent also collects periodic system statistics for processing on the SCOM server.

Processing iSeries Messages

The EView/400i agent processes all messages that are generated by the operating system as well as any messages generated by system and software applications. Messages are filtered based primarily on message IDs configured by the system administrator. Any iSeries message queue can be monitored to capture specific and/or general messages. The administrator can choose between two methods of collecting messages from a queue, either by adding a lock to the queue (*BREAK mode) or by periodically polling the queue (allowing other applications to hold the lock on the queue, if needed).

The EView/400i agent packages the collected messages into a defined data structure, then forwards them to the SCOM server for processing.

Components of the EView/400i Agent

The iSeries component of EView/400i is made up of multiple jobs which all run in an EView-defined subsystem.

About the EView/400i Subsystem

The EView/400i subsystem is started using a Control Language (CL) command. Once the subsystem's jobs are active, the agent filters and routes messages from the iSeries message queues, collects statistics, processes commands, and executes API calls from the proxy server.

About EView/400i Jobs

The EView/400i agent jobs collectively provide all the necessary communications and system interfaces. Each of the procedures is dedicated to a particular interface function and communicates with other jobs and message queues.

EVTCTLCPROC Procedure

1. Establishes a TCP/IP connection to the proxy server.
2. Establishes a TCP/IP connection with the Message Procedure EVSTCPPROC.
3. Forwards processed results to the proxy server.

EVACMDPROC Procedure

1. Establishes a socket connection for the command port.
2. Begins a heartbeat monitoring process that verifies the connection between the proxy server and the agent.
3. Receives iSeries commands and API instructions from the SCOM server.
4. Distinguishes between commands and API instructions, then forwards to respective pre-defined data queue for processing.

EVSTCPPROC Procedure

1. Allows a TCP/IP connection from the EView/400i Control Procedure EVTCTLPROC.
2. Receives processed iSeries messages, commands, and API instructions from a central data queue.
3. Forwards the processed information to the EView/400i Control Procedure.

EVCCTLPROC Procedure

1. Receives the API requests from a pre-defined data queue.
2. Determines the proper format to use in order to carry out the API instruction.
3. Makes the appropriate OS/400 API call.
4. Sends API instruction results to a pre-defined data queue to be sent back to the SCOM server.

EVMSGQMON Procedure

1. Determines message queues to be monitored from the EVMSGQCFG file with the SCAN option.
2. Checks configured messages queues for new messages.
3. Selects messages based on filtering and message queue configuration options and forwards messages to a pre-defined data queue.

EVMSGPROC Procedure

1. Receives messages from message queue(s) you wish to capture messages from.
2. Processes messages through the message filtering process.
3. Forwards all iSeries messages that match the filter to pre-defined data queue.

EVSHSTPROC Procedure

If the EView/400i agent is configured to monitor the QHST log, this job:

1. Reads the QHST messages.
2. Messages are sent through the filtering process.
3. Forwards all matched messages to a pre-defined data queue.

EVPERFPROC Procedure

1. Gathers system and job performance data.
2. Forwards performance data on a specified interval to a pre-defined data queue.

EVAUDJRNL Exit

1. Establishes an exit program that monitors incoming entries to the QAUDJRN audit journal.
2. Formats desired auditing entries into readable messages to be passed to the SCOM server.

EVSCMDPROC Procedure

1. Receives commands from the pre-defined data queue.
2. Sends commands through the command processor.
3. Forwards the command responses to a pre-defined data queue.

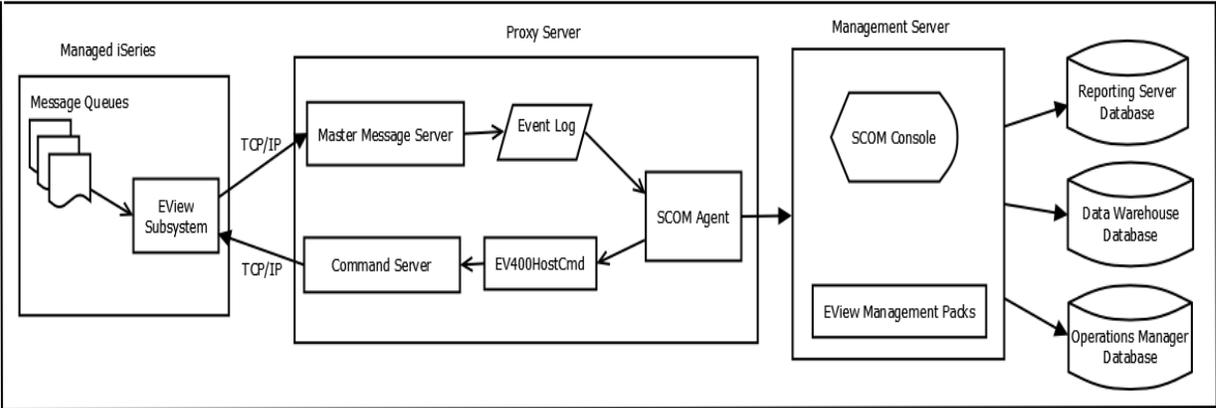
About the EView/400i software components

This chapter describes software components and process management provided by EView/400i.

About EView/400i software components

Figure 4-1 shows the EView/400i software components running alongside the proxy server, SCOM Management Server, and the data flow to the iSeries agent.

Figure 4-1: EView/400i Components



Node Processes

For each iSeries node that is monitored by EView/400i, two services are started on the proxy server:

- **Master Message Server**

The Master Message Server (MMS) is the primary service for EView/400i on the proxy server. All incoming EView/400i events come to the MMS and forwarded into the proxy server's event log, where they are collected by the SCOM agent.

- **Command Server**

The Command Server (CS) forwards action requests to an iSeries system for execution.

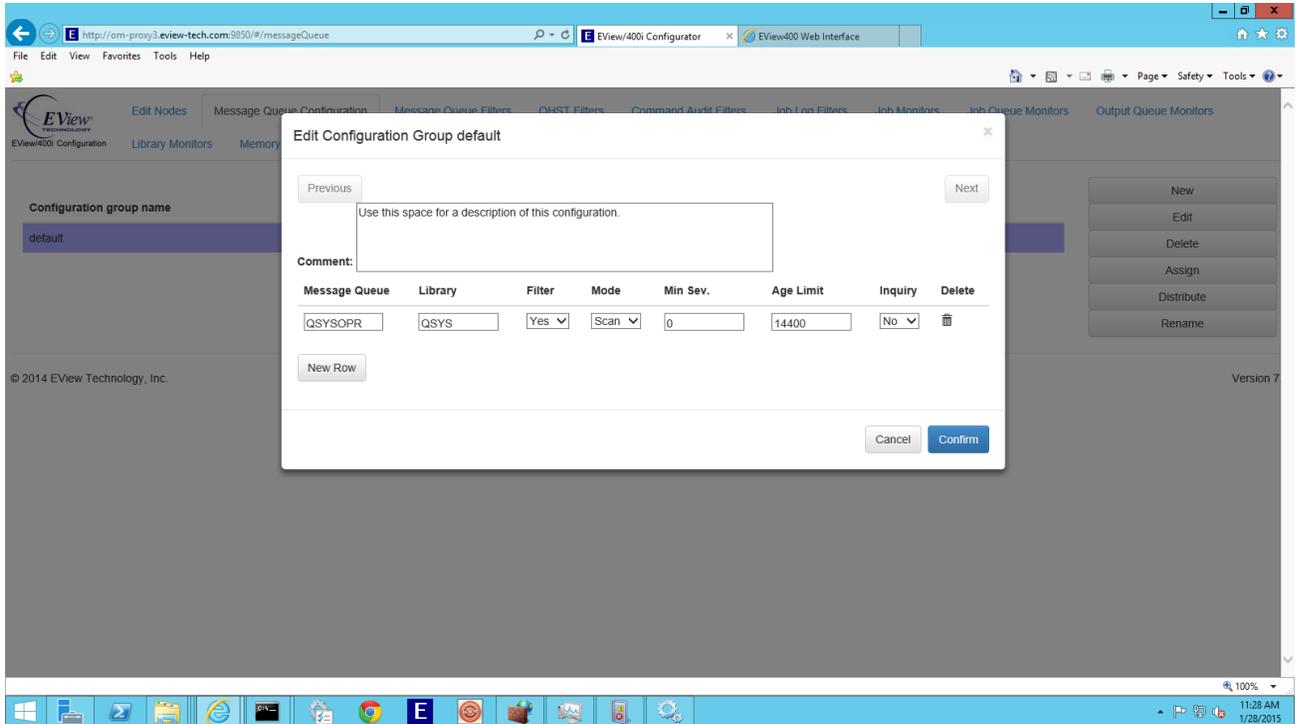
Additional Server Components

About the Web Configuration Pages

EView/400i provides a browser-based configuration application to be run from the proxy server to add, delete, configure, start, stop, or check the status of the EView/400i processes needed for each of the iSeries nodes. The application also provides the ability to modify the desired filters that are used on the iSeries agent, such as which message queues to monitor and which messages to capture from those queues.

Figure 4-2 shows the configuration application as it defines which iSeries message queues are to be monitored.

Figure 4-2: Message Queue Configurator



The monitoring customizations that are specified in this web application are transmitted to the iSeries agent.

EView/400i Integration with SCOM

This chapter describes the appearance and functions of the EView/400i Management Pack when used with System Center Operations Manager (SCOM). The EView/400i component is integrated into the SCOM Monitoring, Authoring, and Reporting pane.

EView/400i in the Monitoring Pane

EView/400i alerts for iSeries agents appear in the Monitoring Pane with the same look and feel as alerts from any other managed system. Figure 5-1 shows a list of alerts that have been received from iSeries agents.

Figure 5-1: EView/400i in SCOM Monitoring Pane

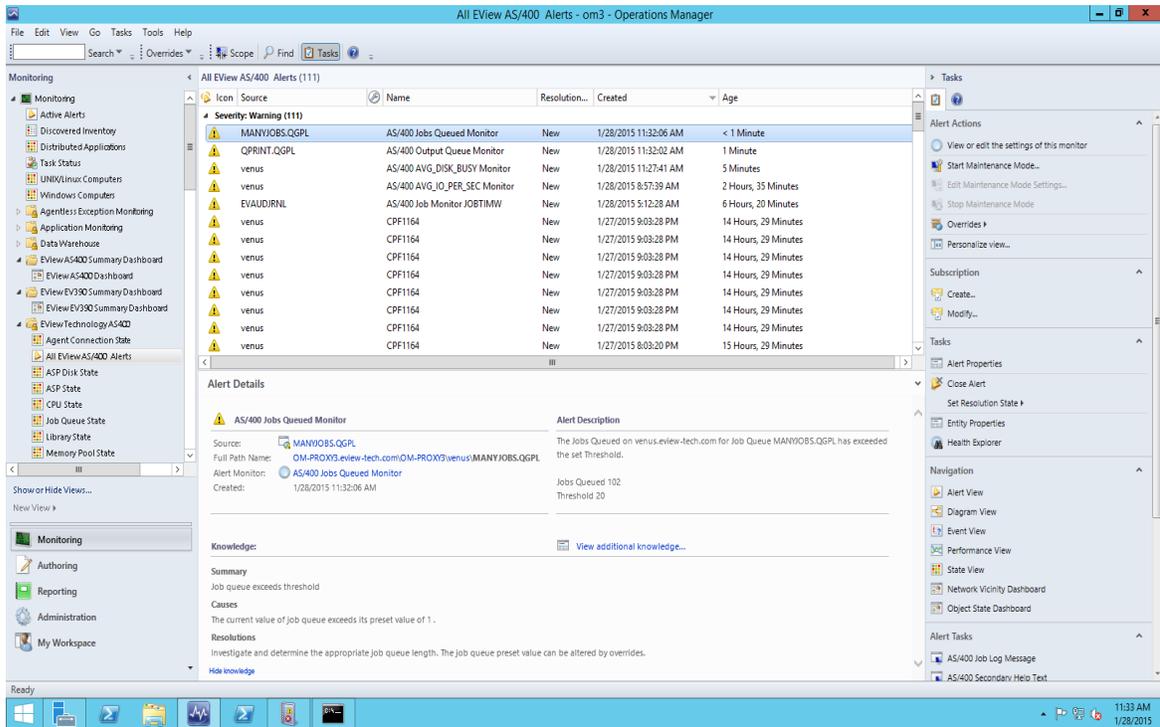
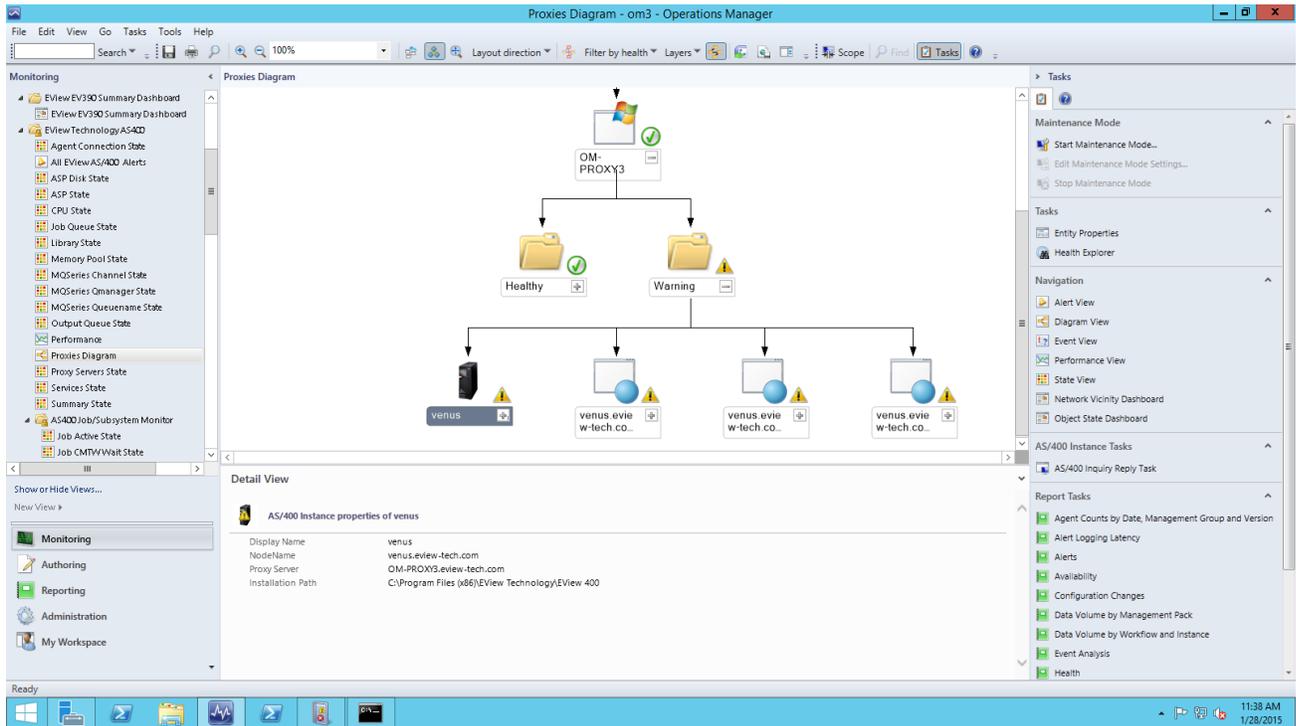


Figure 5-2 shows a SCOM diagram used to pinpoint alerts among all of the monitored iSeries agents.

Figure 5-2: EView/400i Alert Diagram

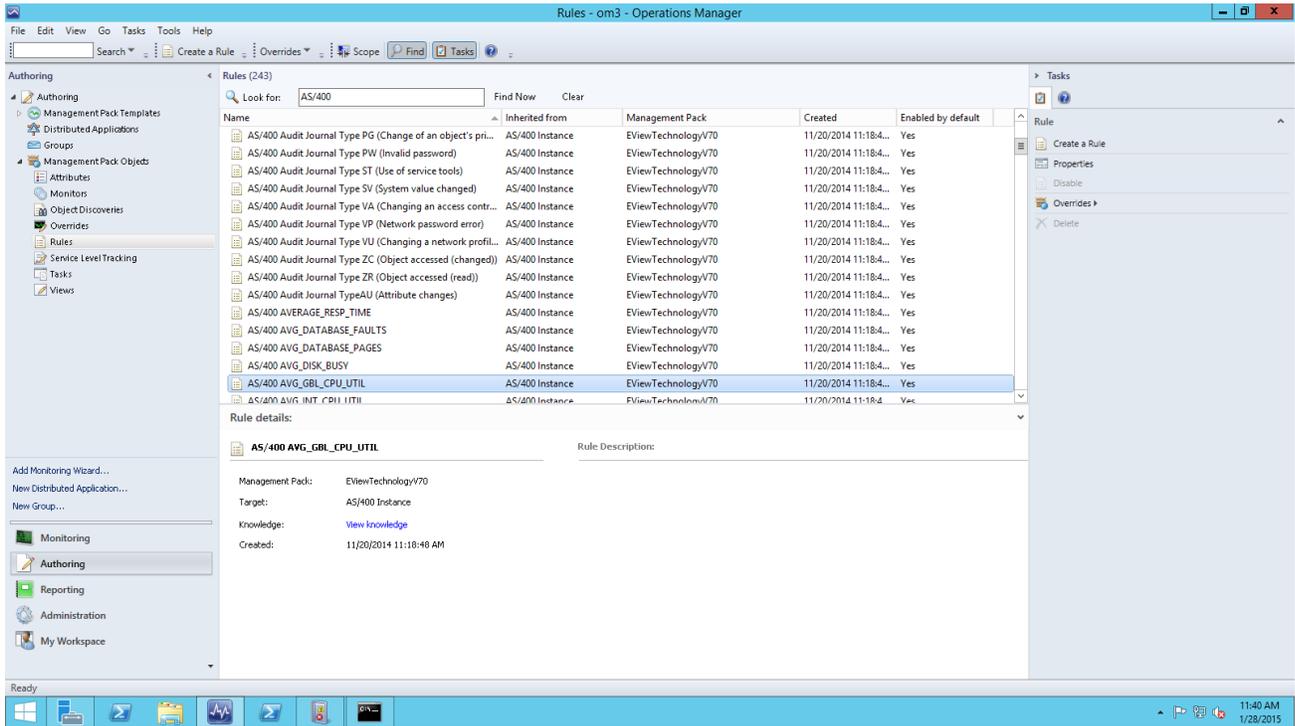


The Actions sub-pane shows available actions that can be taken for each alert. Inquiry messages from the iSeries QSYSOPR message queue can be answered from the SCOM operator's console by selecting an Action which opens a browser window to enter the response.

EView/400i in the Authoring Pane

The EView/400i Management Pack default installation contains over 200 pre-defined rules to generate alerts for various important iSeries messages and performance thresholds. Figure 5-3 shows some of the predefined EView/400i Management Pack rules.

Figure 5-3: EView/400i Management Pack Authoring



As with other SCOM alerts, EView/400i default rules can be overridden and modified to the needs of a site, and tasks can be created to respond to different alerts in different ways.