

# Chapter 1. Fix Pack 0001 overview

Fix Pack 0001 is a fix pack for IBM® Tivoli® OMEGAMON® XE on z/VM® and Linux®, V4.1.2. This readme file provides details about installing the fix pack and information about changes to this release. OMEGAMON XE on z/VM and Linux, Fix Pack 0001, contains the fix pack components listed in Table 1.

Table 1. Fix Pack 0001 component fix packs

Fix pack name	Description
4.1.2-TIV-KVL-FP0001.PDF	Readme file for the monitoring agent.
4.1.2-TIV-KVL-FP0001.tar	Agent installation image. This fix pack also contains the application support files to be installed on the Tivoli Enterprise Portal Monitoring Server, on the Tivoli Enterprise Portal Server, and on the Tivoli Enterprise Portal desktop client for the platform appropriate to that component (Windows®, Linux, or UNIX®).
4.1.2-TIV-KVL-FP0001.zip	Windows application support installation image. Use this .zip file to install the application support files for the monitoring server, for the portal server, and for the desktop client on the Windows platform.

**Important:** Fix Pack 0001 is a complete refresh of this monitoring agent. If you have a prior installation of this monitoring agent, any customized situations or historical data that has been collected at the agent will not be migrated to the new installation.

You can obtain the fix pack files from the Support Web page at the following address:

<http://www.ibm.com/software/sysmgmt/products/support>

Select **IBM® Tivoli® OMEGAMON XE on z/VM and Linux** from the **Support for specific Tivoli products** list. You will be taken to the support page for this monitoring agent.

## What's new in this fix pack

Support has been added for SuSE Enterprise Linux Server (SLES) V11 to IBM Tivoli OMEGAMON XE on z/VM and Linux in this fix pack.

## Support for the z/VM operating system

See the following “Supported versions of the z/VM operating system” section for a complete list of the supported versions of the z/VM operating system. Prior to z/VM v5.3, the support used by this monitoring agent was provided in the Performance Toolkit as a Web download. In z/VM v5.3, this method was replaced and this function was delivered as part of the base product. Updates to this function are now delivered as part of the normal service stream for Performance Toolkit for z/VM v5.2, z/VM v5.3 and z/VM v5.4.

For details on the relevant APARs and their corresponding PTFs for this monitoring agent, see the support page documenting the formatted output collectors of the Performance Toolkit, located at the following address:

<http://www.vm.ibm.com/related/perfkit/pksegout.html>

## Supported versions of the z/VM operating system

Tivoli OMEGAMON XE on z/VM and Linux is supported on the following versions of the z/VM operating system.

Version of the monitoring agent	Version of the z/VM operating system and the Performance Toolkit for VM		
Version of OMEGAMON XE on z/VM and Linux	Version 5.2	Version 5.3	Version 5.4
Version 4.1.0 - Fix Pack 001	Supported	Not supported. You must install Version 4.1.0 - Fix Pack 003 or above of this monitoring agent.	Not supported. You must install Version 4.1.0 - Fix Pack 003 or above of this monitoring agent.
Version 4.1.0 - Fix Pack 002	Supported	Not supported. You must install Version 4.1.0 - Fix Pack 003 or above of this monitoring agent.	Not supported. You must install Version 4.1.0 - Fix Pack 003 or above of this monitoring agent.
Version 4.1.0 - Fix Pack 003	Supported	Supported - with the latest service level of the Performance Toolkit applied.	Supported - with the latest service level of the Performance Toolkit applied.
Version 4.1.1	Supported	Supported - with the latest service level of the Performance Toolkit applied.	Supported - with the latest service level of the Performance Toolkit applied.
Version 4.1.2	Supported, but with reduced functionality. See Note below.	Supported - with the latest service level of the Performance Toolkit applied.	Supported - with the latest service level of the Performance Toolkit applied.
Version 4.1.2 – Fix Pack 0001	Supported, but with reduced functionality. See Note below.	Supported - with the latest service level of the Performance Toolkit applied.	Supported - with the latest service level of the Performance Toolkit applied.

**Note:** To take advantage of the most recent features implemented, install the latest version of the Performance Toolkit and the latest version of the OMEGAMON XE on z/VM and Linux monitoring agent. Reduced functionality results if you run a prior version of either the Performance Toolkit or the OMEGAMON XE on z/VM and Linux monitoring agent.

## Support for SuSE Linux Enterprise Server

If you are using SUSE Linux Enterprise Server 11 for zSeries (64-bit mode) and want to install this agent on it, you must use OMEGAMON XE on z/VM and Linux; Version 4.1.2 Fix Pack 0001. See the *OMEGAMON XE on z/VM and Linux Planning and Configuration Guide* for further information on Linux requirements.

## Addition of Scaled Workload Virtual CPU Utilization

Version 4.1.2 Fix Pack 0001 adds the following four new attributes to the KVLUser Workload attribute group:

- Virtual CPUs – The number of virtual central processing units (CPUs) defined to the Virtual Machine. The value format is an integer.
- CP Scaled Percent – The percentage of total CPU used by the z/VM Control Program to manage this workload. The value format is in the range of 0.00 - 100.00. For example, the value 12.00 represents 12.00%. This value is scaled by the number of virtual CPUs and does not exceed 100% when multiple virtual processors are used.
- CPU Scaled Percent – The percentage of total CPU used by the system to manage this workload. The value format is a percentage value with two decimal places. For example, the value 12.00 represents 12.00%. This value is scaled by the number of virtual CPUs and does not exceed 100% when multiple virtual processors are used.
- Virtual CPU Scaled Pct – The percentage of virtual CPU utilization for the specified workload. The value format is a percentage value with two decimal places. For example, the value 12.00 represents 12.00%. This value is scaled by the number of virtual CPUs and does not exceed 100% when multiple virtual processors are used.

## New product-provided situations and modified existing product-provided situations

Situations are expressions embedded in IF-TRUE statements of system conditions that you want to monitor. This means that if the specified condition exists, then the situation is true and triggers an alert. A condition consists of an attribute, a value, and a comparison operator. When a situation is activated, the value of the attribute is compared with the value set for the condition to determine whether the condition is met. The following table contains the new situations that are included in this version of the monitoring agent. The topics below the table describe each situation and list the situation formula.

Navigator item	Situation name	Column name and initial conditional value	State	Runs at startup (Yes or No)
Workload	ZVM_User_Scaled_CPU_Critical	CPU Scaled Percent >= 90.00	Critical	No
Workload	ZVM_User_Scaled_CPU_High	CPU Scaled Percent >= 80.00 and CPU Scaled Percent < 90.00	High (Warning)	No
Workload	ZVM_Virtual_Scaled_CPU_Critical	Virtual CPU Scaled Percent >= 90.00	Critical	No
Workload	ZVM_Virtual_Scaled_CPU_High	Virtual CPU Scaled Percent >= 80.00 and Virtual CPU Scaled Percent < 90.00	High (Warning)	No

### ZVM\_User\_Scaled\_CPU\_Critical

Raises an alert when the percentage of total CPU used by the system to manage and run the workload is greater than or equal to 90 percent. The value reported is the percentage of total CPU used by the system to manage and run a workload. The value is scaled over the number of virtual processors in a multiprocessor configuration and does not exceed 100%. Review the data

that is shown in the All z/VM Workloads table in the “Workload workspace” in Chapter 3 of the User’s Guide. See also the Total CPU or %CPU value (if multiple virtual processors are defined) in the User Resource Details (USER userid) window of the Performance Toolkit. This window shows data for all the virtual processors defined to the virtual machine. It is possible that the high CPU utilization is caused by a looping user application or process. Examine the application in question for inefficient or defective code. It is also possible that the total CPU is high because there is legitimate processing work to be done that is causing high CPU utilization. A processor upgrade might be needed. Consider modifying the threshold for this situation if high CPU utilization is normal for this workload.

Situation Formula: \*IF \*VALUE KVLUser\_Workload.CPU Scaled Percent \*GE 90.00

### **ZVM\_User\_Scaled\_CPU\_High**

Raises an alert when the percentage of total CPU used by the system to manage and run the workload is greater than or equal to 80 percent and less than 90 percent. The value reported is the percentage of total CPU used by the system to manage and run a workload. The value is scaled over the number of virtual processors in a multi-processor configuration and does not exceed 100%.

Review the data that is shown in the All z/VM Workloads table in the “Workload workspace” in Chapter 3 of the User’s Guide. See also the Total CPU or %CPU value (if multiple virtual processors are defined) in the User Resource Details (USER userid) window of the Performance Toolkit. This window shows data for all the virtual processors defined to the virtual machine. It is possible that the high CPU utilization is caused by a looping user application or process. Examine the application in question for inefficient or defective code. It is also possible that the total CPU is high because there is legitimate processing work to be done that is causing high CPU utilization. A processor upgrade might be needed. Consider modifying the threshold for this situation if high CPU utilization is normal for this workload.

Situation Formula: \*IF \*VALUE KVLUser\_Workload.CPU Scaled Percent \*GE 80.00 \*AND \*VALUE KVLUser\_Workload.Scaled CPU Percent \*LT 90.00

### **ZVM\_Virtual\_Scaled\_CPU\_Critical**

Raises an alert when the percentage of total CPU used by the system to run the workload is greater than or equal to 90 percent. The value reported is the percentage of total CPU used by the system to run a workload. The value is scaled over the number of virtual processors in a multiprocessor configuration and does not exceed 100%.

Review the data that is shown in the All z/VM Workloads table in the “Workload workspace” in Chapter 3 of the User’s Guide. See also the Emulat. CPU or %EM value (if multiple virtual processors are defined) in the User Resource Details (USER userid) window of the Performance Toolkit. This window displays data for all the virtual processors defined to the virtual machine. It is possible that the high CPU utilization is caused by a looping user application or process. Examine the application in question for inefficient or defective code. It is also possible that the total CPU is high simply because there is legitimate processing work to be done that is causing high CPU utilization. A processor upgrade might be needed. Consider modifying the threshold for this situation if high CPU utilization is normal for this workload.

Situation Formula: \*IF \*VALUE KVLUser\_Workload.Virtual CPU Scaled Percent \*GE 90.00

### **ZVM\_Virtual\_Scaled\_CPU\_High**

Raises an alert when the percentage of total CPU used by the system to run the workload is greater than or equal to 80 percent and less than 90 percent. The value reported is the percentage of total CPU used by the system to run a workload. The value is scaled over the number of virtual processors in a multiprocessor configuration and does not exceed 100%.

Review the data that is shown in the All z/VM Workloads table in the “Workload workspace” in Chapter 3 of the User’s Guide. See also the Emulat. CPU or %EM value (if multiple virtual processors are defined) in the User Resource Details (USER userid) window of the Performance Toolkit. This window displays data for all the virtual processors defined to the virtual machine. It is possible that the high CPU utilization is caused by a looping user application or process. Examine the application in question for inefficient or defective code. It is also possible that the total CPU is high simply because there is legitimate processing work to be done that is causing high CPU utilization. A processor upgrade might be needed. Consider modifying the threshold for this situation if high CPU utilization is normal for this workload.

Situation Formula: \*IF \*VALUE KVLUser\_Workload.Virtual CPU Scaled Percent \*GE 80.00 \*AND \*VALUE KVLUser\_Workload.Virtual CPU Scaled Percent \*LT 90.00

The following table contains the existing situations that have been modified for this release.

Navigator Item	Name of Situation	Column Name and Initial Conditional Value	State	Runs at startup (Yes or No)
LPAR	ZVM_LPAR_Busy_Critical *	LPAR Busy >= 90.00 AND LPAR Weight < 65535	Critical	No
LPAR	ZVM_LPAR_Busy_High *	LPAR Busy Percent >=80 AND LPAR Busy Percent <90 AND LPAR Weight < 65535	High (Warning)	No
Real Storage	ZVM_Page_Used_Critical	Pct Page Space In Use >= 50	Critical	No
Real Storage	ZVM_Page_Used_High	Pct Page Space In Use >= 40 AND Pct Page Space In Use < 50	High (Warning)	No

\* In the LPAR workspace tabular views, the LPAR Weight column contains the string "DED" for partitions with dedicated processors. When you create a situation predicate or a threshold that tests the LPAR Weight attribute, use the numeric value 65535 instead of the string "DED". The LPAR Weight value of 65535 tests true for partitions with dedicated processors.

**Note:** If you previously customized the existing situations that are modified with this fix pack, you will lose the changes you made when these four situations are installed. To retain the changes you made to the existing situations, make a copy of each situation and rename each one so that your situations are not overwritten by the newly modified situations.

See the *IBM Tivoli OMEGAMON XE on z/VM and Linux User's Guide*, or the online help system for this monitoring agent for descriptions of the product-provided situations.

## Chapter 2. Installation instructions

The following table outlines the steps required to install the fix pack in your environment.

Table 2. Overall installation steps for Fix Pack 0001

Goal	Where to find information
Ensure that your monitoring environment is prepared for fix pack installation.	<i>IBM Tivoli OMEGAMON XE on z/VM and Linux Planning and Configuration Guide.</i>
Gather the information you need to perform the installation.	<i>IBM Tivoli OMEGAMON XE on z/VM and Linux Planning and Configuration Guide.</i>
Install IBM Tivoli Monitoring, V6.1.0, with Fix Pack 0007 (or later).	<i>IBM Tivoli Monitoring Installation and Setup Guide and the IBM Tivoli Monitoring Fix Pack 007 Readme.</i>
Install the IBM Tivoli OMEGAMON XE on z/VM and Linux monitoring agent, V4.1.2, with Fix Pack 0001.	<i>IBM Tivoli Monitoring Installation and Setup Guide, the IBM Tivoli OMEGAMON XE on z/VM and Linux Planning and Configuration Guide, and "Monitoring agent checklist" below.</i>
Install application support for the IBM Tivoli OMEGAMON XE on z/VM and Linux monitoring agent, V4.1.2, with Fix Pack 0001.	<i>IBM Tivoli Monitoring Installation and Setup Guide</i>
Install the IBM Tivoli Monitoring Agent on Linux OS, if you plan to use dynamic workspace linking. Also install application support for this agent. <b>Note:</b> Dynamic workspace linking between the IBM Tivoli OMEGAMON XE on z/VM and Linux monitoring agent and the IBM Tivoli Monitoring Agent on Linux OS is not supported when the Linux system defined for the Linux OS agent is running as a guest under a second-level z/VM system.	<i>IBM Tivoli Monitoring Installation and Setup Guide and the IBM Tivoli OMEGAMON XE on z/VM and Linux Planning and Configuration Guide.</i>
Install language support (optional) on each computer where the Tivoli Enterprise Portal Server is located.	See "Installing Language Support (optional)" below.
Install the Command Processor. This step is optional and required only if you intend to use the Take Action command feature.	<i>Program Directory</i> for this monitoring agent, and the <i>IBM Tivoli OMEGAMON XE on z/VM and Linux Planning and Configuration Guide.</i>

### Before you install the fix pack

Before you install this fix pack, install IBM Tivoli Monitoring, Version 6.1.0, with Fix Pack 0007 (or later) if that product at that level is not already installed.

**Note:** All base monitoring components must be at the same fix pack level. For example, you cannot have a Fix Pack 0003 portal server and a Fix Pack 0007 monitoring server.

**Note:** *ITMinstall\_dir* is the installation location for IBM Tivoli Monitoring and *user\_id* is the ID that was used to install the IBM Tivoli Monitoring components. If the *user\_id* was NOT root, then follow steps 1-4 below if installing on Unix.

1. Log in to the computer as *user\_id*.
2. Run the following command to change ownership of any root owned files to *user\_id*:

```
su - root -c "ITMinstall_dir/bin/UnSetRoot user_id"
```

3. Install the fix pack components on the computer, following the steps outlined in both the IBM Tivoli Monitoring and in the agent checklists.

4. Run the following command to reset the file permissions and file ownership as required:

```
su - root -c "ITMinstall_dir/bin/SetPerm -a"
```

## Monitoring agent checklist

The following checklist provides the high-level local installation steps for this monitoring agent.

Table 3. Checklist for locally installing the fix pack for IBM Tivoli OMEGAMON XE on z/VM and Linux

√	<p><b>Installation step</b></p> <p>1. Gather information about the monitoring components in your environment. See the <i>IBM Tivoli OMEGAMON XE on z/VM and Linux Planning and Configuration Guide</i>.</p> <p>2. To install the monitoring agent from the Support Web page for this product, perform the following steps:</p> <p>Download and install the 4.1.2-TIV-KVL-FP0001 fix pack image from the Support Web page. This step assumes that IBM Tivoli Monitoring, Version 6.1, with Fix Pack 0007, or later, is already installed.</p> <p>On Windows computers, download and extract the 4.1.2-TIV-KVL-FP0001.zip file into a temporary installation directory, and run the following commands:</p> <pre>cd install_dir\WINDOWS</pre> <p>where <i>install_dir</i> is the directory where you extracted the fix pack files.</p> <p><b>setup.exe</b></p> <p>On UNIX or Linux computers, download and extract the 4.1.2-TIV-KVL-FP0001.tar file into a temporary installation directory, and run the following commands from the command line:</p> <pre>cd install_dir</pre> <p><b>./install.sh</b></p> <p>where <i>install_dir</i> is the directory where you extracted the fix pack files.</p> <p>For any of these platforms, continue with the installation and configuration of the monitoring agent by following the instructions outlined in the <i>IBM Tivoli Monitoring Installation and Setup Guide</i>. See also the <i>IBM Tivoli OMEGAMON XE on z/VM and Linux Planning and Configuration Guide</i>.</p> <p>3. Be sure to install the application support for this monitoring agent on the monitoring server, on the portal server, and on the desktop client on the appropriate platform. For the Linux and UNIX platforms, use the 4.1.2-TIV-KVL-FP0001.tar file to install the application support on the appropriate platform for each component. For the Windows platform, use the 4.1.2-TIV-KVL-FP0001.zip file to install application support for the monitoring server, the portal server, and the desktop client.</p> <p>See the <i>IBM Tivoli Monitoring Installation and Setup Guide</i> for details on installing the application support for these components.</p> <p><b>Note:</b> If you plan to use dynamic workspace linking, an important feature of this product, be sure to install the IBM Tivoli Monitoring: Linux OS agent. You must also install the application support for the IBM Tivoli Monitoring: Linux OS agent. Using application support, you can link to specific IBM Tivoli Monitoring: Linux OS workspaces from some of the Tivoli OMEGAMON XE on z/VM and Linux monitoring agent workspaces. See the <i>IBM Tivoli Monitoring Installation and Setup Guide</i> for details on installing this monitoring agent and on installing the application support for this agent.</p>
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## Installing Language Support (optional)

If you want the OMEGAMON XE monitoring agents' workspaces, online help, and expert advice to be displayed in a language other than English, you can install language support for each monitoring agent on all workstations where a Tivoli Enterprise Portal Server is located and where IBM Tivoli Monitoring language support has already been installed.

If IBM Tivoli Monitoring language support has not yet been installed, you must install it before installing monitoring agent language support. Language support is available only on the platforms

that were supported for IBM Tivoli Monitoring V6.1 GA. See the *IBM Tivoli Monitoring: Installation and Setup Guide* for instructions.

To install monitoring agent language support, complete the following steps:

1. Insert the monitoring agent language pack CD into the CD-ROM drive of a workstation where the Tivoli Enterprise Portal Server is located. For Linux systems, mount the CD if necessary.
2. Launch the installation program.

**Windows:** The installation program starts automatically. If it does not, go to the Windows directory on your CD-ROM drive and double-click the **setup.exe** file.

**Linux for Intel:** Run the `./setupLinux.bin` command.

**Linux for System z:** Run the `./setupLinux390.bin` command.

3. Select the language to be used during the installation, and click **OK**.
4. Read the text that welcomes you to the installation, and click **Next** to continue.
5. Read the software license agreement, select **I accept the terms of this license agreement**, and click **Next**.
6. Under **Language Pack Installation**, expand the **Supported Languages** node and select one or more languages from the list. Click **Next**.
7. Review the installation summary and click **Next**. Language support files are installed, and a message instructs you to restart the Tivoli Enterprise Portal desktop client and the Eclipse Help Server.
8. Click **Next**, and then click **Finish**.
9. Stop and restart the following components:
  - Tivoli Enterprise Portal Server
  - Eclipse Help Server
  - Tivoli Enterprise Portal desktop or browser client

For instructions on specifying the language to be displayed for users, see *IBM Tivoli Monitoring: Administrator's Guide*.



## Chapter 3. Documentation changes

The following documentation changes were made in support of this fix pack:

### *IBM Tivoli OMEGAMON XE on z/VM and Linux Planning and Configuration Guide*

- Added a reference to SUSE Linux Enterprise Server V11 for zSeries.
- Using the LPAR Weight Attribute in Thresholds and Situation Predicates.  
In the LPAR workspace tabular views, the LPAR Weight column contains the string "DED" for partitions with dedicated processors. When you create a situation predicate or a threshold that tests the LPAR Weight attribute, use the numeric value 65535 instead of the string "DED". The LPAR Weight value of 65535 tests true for partitions with dedicated processors.

### *IBM Tivoli OMEGAMON XE on z/VM and Linux User's Guide*

- Revised description of the following ZVM\_User\_CPU\_Critical attribute:  
Raises an alert when the percentage of total CPU used by the system to manage and run the workload is greater than or equal to 90 percent. The value reported is the percentage of total CPU used by the system to manage and run a workload. Review the data in the All z/VM Workloads table in the "Workload workspace" on page 45. See also the %CPU value in the User Resource Usage (USER) screen of the Performance Toolkit. This data for all the virtual processors defined to the virtual machine. It is possible that the high CPU utilization is caused by a looping user application or process. Examine the application in question for inefficient or defective code. It is also possible that the total CPU is high because there is legitimate processing work to be done that is causing high CPU utilization. A processor upgrade be needed. Consider modifying the threshold for this situation if high CPU utilization is normal for this workload. \*IF \*VALUE KVLUser\_Workload.CPU Percent \*GE 90.00.
- In the Summary of predefined situations section, the following line was added:
- See above descriptions of new sample situations and modifications of existing situations.
- In the KVLUser Workload attributes section, the following text was added:

Virtual\_CPUs: The number of virtual central processing units (CPUs) defined to the Virtual Machine. The value format is an integer.

CP\_Scaled\_Percent: The percentage of total CPU used by the system to manage this workload. The value format is a percentage value with two decimal places. For example, the value 12.00 represents 12.00%. Note: This value is scaled by the number of virtual CPU's and will not exceed 100% when multiple virtual processors are used.

CPU\_Scaled\_Percent: The percentage of total CPU used by the system to manage and run this workload. The value format is a percentage value with two decimal places. For example, the value 12.00 represents 12.00%. Note: This value is scaled by the number of virtual CPU's and will not exceed 100% when multiple virtual processors are used.

Virtual\_CPU\_Scaled\_Pct: The percentage of virtual CPU utilization for the specified workload. The value format is a percentage value with two decimal places. For example, the value 12.00 represents 12.00%. Note: This value is scaled by the number of virtual CPU's and will not exceed 100% when multiple virtual processors are used.

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