
IBM Tivoli Composite Application Manager for Application Diagnostics version 7.1

Changing the managing server data collector monitoring level



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In this IBM Tivoli® Composite Application Manager for Application Diagnostics version 7.1 training module, you learn how to change the Managing Server Data Collector monitoring level.

Assumptions

Before you proceed, you must have:

- Knowledge of the features and components of IBM Tivoli Composite Application Manager for WebSphere® and J2EE
- A user ID that has administrative authority to maintain and update the Managing Server (MS) Visualization Engine (VE)

The module developer assumes that you can understand the basic administrative topics of ITCAM for Application Diagnostics. Additionally, you should already be familiar with the features and components of ITCAM for WebSphere and J2EE and have a user ID that has been assigned Managing Server administrative role privileges.

Objectives

After you have completed this training module, you can perform these tasks:

- Explain to others what a Managing Server (MS) Data Collector (DC) does
- Explain to others what the MS DC monitoring level is
- Name the available MS DC monitoring levels
- Name features and information available at each MS DC monitoring level
- Adjust the MS DC monitoring level of these four items:
 - Monitoring on Demand
 - Modify Server Settings
 - MS System Properties
 - Misbehaving Transaction Trap

When you complete this module you will understand what a D C monitoring level is, the available monitoring levels, the Features and Information available at different levels, and, finally, how to adjust the monitoring level from the Managing Server Virtualization Engine.

Data Collector (DC) monitoring levels (1 of 2)

Managing Server Data Collector monitoring levels have these characteristics:

- The monitoring level for a DC defines the amount of data collected
- The higher the monitoring level, the more details that are collected
- The more details collected the larger the performance overhead introduced by the DC
- The available monitoring levels are:
 - Level One (Normal Production Mode)
 - Level Two (Problem Determination Mode)
 - Level Three (Tracing Mode)

The monitoring level for a server defines the amount of data collected for it. A higher monitoring level causes more details to be collected and the larger the performance overhead that is introduced by the Data Collector. The available monitoring levels are Level One (Production Mode), Level Two (Problem Determination Mode), and Level Three (Tracing Mode).

Data Collector (DC) monitoring levels (2 of 2)

Different features and information is available at different levels:

- Common and available to all levels is Availability Management, System Resources
- Level One – Request:
 - CPU information
 - Elapsed time
- Level Two – Component (JDBC/SQL, EJB, CICS®, RMI):
 - Level One information for component
 - Method profiling
- Level Three – Java method (entry/exit):
 - Level Two information for Java methods
 - Certain traps and alerts require Level Three capture method tracing

Different information is provided at the different monitoring levels. Common to all levels is Availability Management and System Resource data.

L1 Level 1 Production mode: this monitoring level provides availability management, system resources, and basic request-level data. This monitoring level has a low impact on the CPU overhead per transaction and is appropriate for servers that are not malfunctioning.

L2 Level 2 Problem determination mode: this monitoring level provides production level monitoring plus advanced request data, including external component and CPU information, as well as additional monitoring fields and functions. Under problem determination mode, you can view component traces. These are traces that show J2EE request-related events that are made to external services. Use this level when you suspect a problem or need to capture data about external events but do not need all the method-level data. When you select L2, you are given the option to check MP for Method Profiling. This feature allows you to determine how often the data collector will aggregate method data and send the data to the managing server: 1-999 minutes. You can view the method profile reports on the Method Profiling Management page.

L3 Level 3 Tracing Mode: this is the most powerful monitoring level, therefore only this level uses all reporting elements available. For example, in L3, the server activity display shows additional data for the following columns: Accumulated CPU, Last Known Class Name, Last Known Method, and Last Known action. In addition, on the Request Detail page, the method trace with SQL statements are also available. L3 has inherently higher overhead than the other monitoring levels. Use this level for servers that have been selected for diagnostics and detailed workload characterization.

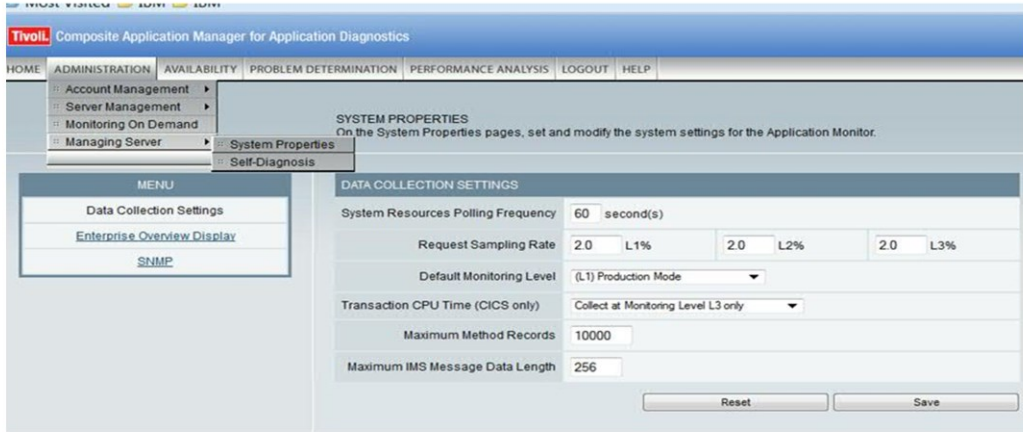
Adjusting the DC monitoring level (1 of 9)

- There are several ways that the Data Collector (DC) monitoring level can be adjusted from the Managing Server (MS).
- In the System Properties pages, you can set defaults for:
 - Server data collection
 - Baseline settings for the Enterprise Overview display in the VE
 - SNMP settings

There are several ways that the Data Collector DC monitoring level can be adjusted from the Managing Server. First; In the System Properties pages, you can set defaults for server data collection, baseline settings for the Enterprise Overview display in the Visualization Engine, and SNMP settings.

Adjusting the DC monitoring level – system properties pages (2 of 9)

To view the System Properties pages, from the top navigation, click **Administration > Monitoring Server > System Properties**



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Here you set the default for all server DCs. In this example, the default monitoring level is set at Level One.

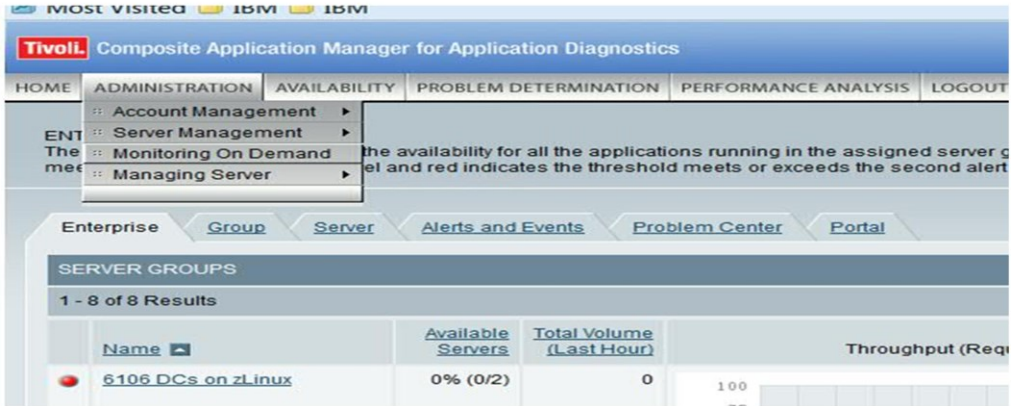
Adjusting the DC monitoring level – monitoring on demand pages (3 of 9)

In the Monitoring on Demand (MOD) pages, you can view and adjust the monitoring level for all servers. You can also schedule adjustment of this level to occur at fixed times.

Second, in the Monitoring on Demand pages, you can both view and adjust the monitoring level for all servers and schedule adjustment of this level to occur at fixed times.

Adjusting the DC monitoring level – monitoring on demand pages (4 of 9)

To view the Monitoring on Demand pages, from the top navigation, click **Administration > Monitoring on Demand**



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To get to the Monitoring on Demand pages, go to the top navigation menu and click Administration > Monitoring on Demand.

Adjusting the DC monitoring level – monitoring schedule page (5 of 9)

On the Monitoring Schedule page, click the **Schedule Change/Override** button (far right of panel) for the Group/Server name to display the Modify Server Settings page

MONITORING ON DEMAND (MOD) CONSOLE
The Console page displays the schedule name, the current monitoring level and the current sampling rate. If you change the schedule, override the MOD level, or change the sampling rate, the data collected

MONITORING SCHEDULE

1 - 18 of 18 Results

Group/Server	Platform	Schedule Name	Current Level	Current Sampling	Current CPU Level	Schedule Change/Override
6106 DCIS ON ZLINUX						
TYT4078Cae01 TYT4078Node01 server1(AppIn01)	zLinux	--	Unavailable	Unavailable	N/A	
TYT4078Cae01 TYT4078Node01 server2(AppIn01)	zLinux	--	Unavailable	Unavailable	N/A	
ADX 61						
reg-07fNode01 Cell reg-07fNode01 server1(AppIn03)	ADX	--	Unavailable	Unavailable	N/A	
LINUX TOMCAT6029 J2EE DC						
icam124.9fab.austin.ibm.com.tomcat60instance	iLinux	--	Unavailable	Unavailable	N/A	
LINUX X86 TCAM124 WAS7011						
icam124Node02Cell.icam124Node02.server1(AppIn02)	iLinux	--	OK	2%	N/A	
SOLARIS10SPARC_BIOSB402						
gwahr.9fab.austin.ibm.com.default	Solaris	--	Unavailable	Unavailable	N/A	
gwahr.9fab.austin.ibm.com.default	Solaris	--	Unavailable	Unavailable	N/A	
WEBLOGIC1033SOLARIS10						
10330048333.mgwhr.9fab.austin.ibm.com.4-03-03-03-03-03-03-03	Solaris	--	Unavailable	Unavailable	N/A	
10330048333.mgwhr.9fab.austin.ibm.com.05-03-03-03-03-03-03-03	Solaris	--	Unavailable	Unavailable	N/A	

Modify Server

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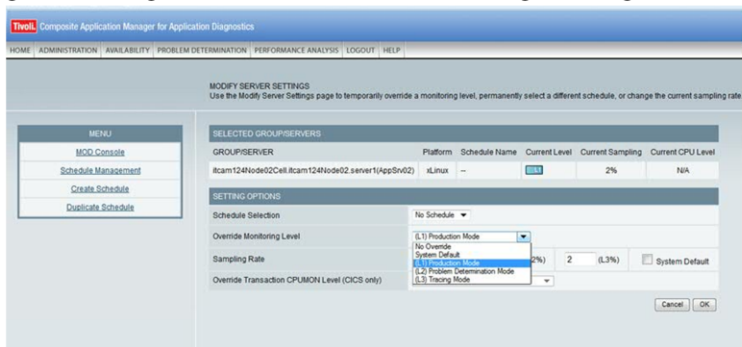
On the Monitoring Schedule click the Schedule Change/Override button for the Group/Server name to display the Modify Server Settings page. The black arrow points to a Group/Server name Schedule Change/Override button. For z/OS® Data Collectors, and to change the monitoring level for a specific Data Collector, push the Schedule Change/Override button for the WebSphere Application Server Control Region to display the Modify Server Settings page.

Adjusting the DC monitoring level – modify server settings page (6 of 9)

Use the Modify Server Settings page to perform these actions:

- Change the monitoring level for the selected DC
- Select a different schedule
- Change the current sampling rate.

Overriding a monitoring level lasts until the next monitoring level begins.



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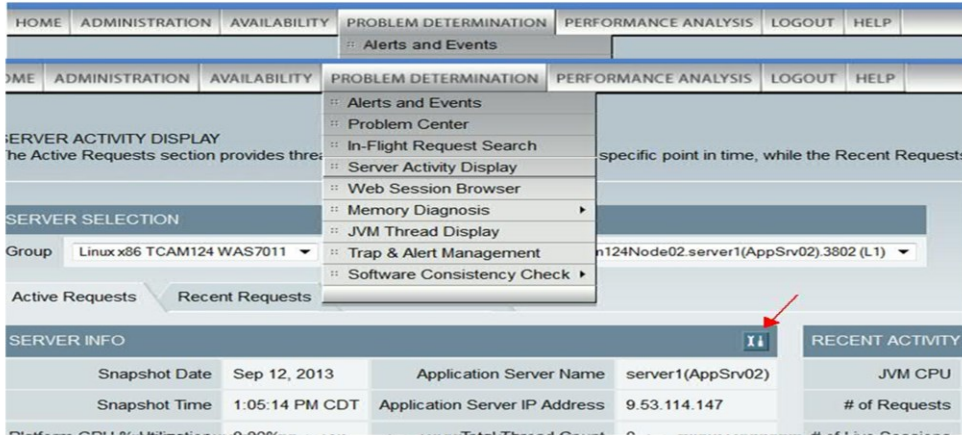
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The third way to change the monitoring level is by using the Modify Server Settings page. Here you change the monitoring level for the selected DC, select a different schedule, or change the current sampling rate. Overriding a monitoring level lasts until the next monitoring level begins, as determined by the schedule.

Adjusting the DC monitoring level – activity display page (7 of 9)

You can also access the Modify Server Settings page from the **toolbox icon** on the Server Activity Display page.



The red arrow in the bottom right corner points to the toolbox icon button. Pressing this button takes you to the Modify Server Settings page.

Adjusting the DC monitoring level – Modify Settings initial setup requirement (8 of 9)

Level Three monitoring requires initial setup on the DC side prior to use of the Modify Settings page. See the warning message below.

The screenshot displays the 'MODIFY SERVER SETTINGS' interface. At the top, there is a navigation bar with options: ADMINISTRATION, AVAILABILITY, PROBLEM DETERMINATION, PERFORMANCE ANALYSIS, LOGOUT, and HELP. Below this is a 'MENU' section with links for 'MOD Console', 'Schedule Management', 'Create Schedule', and 'Duplicate Schedule'. The main area is titled 'MODIFY SERVER SETTINGS' and includes a sub-header: 'Use the Modify Server Settings page to temporarily override a monitoring level, permanently select a different schedule, or change the current sampling rate.' A table lists 'SELECTED GROUP/SERVERS' with columns: GROUP/SERVER, Platform, Schedule Name, Current Level, Current Sampling, and Current CPU Level. The table contains one entry: 'itcam124Node02Cell.itcam124Node02.server1(AppIn02)' on 'xLinux' platform with 'No' schedule, 'L3' current level, '2%' current sampling, and 'N/A' current CPU level. Below the table are 'SETTING OPTIONS' with several dropdown menus and checkboxes. A warning dialog box is open, providing instructions on how to configure the data collector for Level 3 monitoring.

Note that with this third method, use of the Modify Server Settings page, Level Three monitoring requires that initial setup be done on the Data Collector side. As you see in the slide, you receive a warning message that tells you additional data collector configuration steps should have been completed for the capture of Level Three data using this method.

Adjusting the DC monitoring level – misbehaving transaction trap (9 of 9)

- Misbehaving Transaction Trap: An application trap that is set based upon resident time of a Misbehaving Transaction.
- Misbehaving Transaction Traps possess these characteristics:
 - When the resident time of a request violates the specified level in the trap definition, the monitoring level for that specified request switches from Level One or Level Two to Level Three
 - A method trace is captured for all the subsequent resident time violations of that request
 - You can configure the DC to return to either Level One Level or Level Two after the threshold is reached a certain number of times within a given time period
 - Provides a dynamic means of collecting method trace detail as detail is collected at the time of problem occurrence
 - Note: For additional information on Misbehaving Transactions and Misbehaving Transaction Traps, refer to the ITCAM for Application Diagnostics User Guide - Setting an Application Trap using the Resident Time - Misbehaving Transaction target type

A fourth way of adjusting the monitoring level is by using what is called a Misbehaving Transaction Trap. A Misbehaving Transaction Trap is an application trap that is set based upon resident time of a misbehaving transaction.

With this target type, when the resident time of a request violates the specified level in the trap definition, the monitoring level for that specified request switches from either Level One or Level Two to Level Three. For all the subsequent resident time violations for that request the method trace detail is captured. You can configure the data collector to return to either Level One or Level Two after the threshold has been reached a certain number of times within a given time period. This target type also provides a dynamic means of collecting method trace detail as the detail is collected at the time the problem is actually occurring. For additional information on Misbehaving Transactions and Misbehaving Transaction Traps, refer to the ITCAM for Application Diagnostics User Guide - Setting an Application trap using the Resident Time - Misbehaving Transaction target type.

Documentation links

IBM Tivoli Composite Application Manager for Application Diagnostics, Version 7.1.0.2

- User Guide - System Properties:

http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/com.ibm.itcamfad.doc_7101/itcam_71_msve_help/system_properties.html

- User Guide - Monitoring on Demand:

http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/com.ibm.itcamfad.doc_7101/itcam_71_msve_help/MOD.html

- User Guide - Misbehaving Transaction

http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/com.ibm.itcamfad.doc_7101/itcam_71_msve_help/Setting_a_Resident_Time_misbehaving_Transaction_Application_Trap.html

- Technote 1609483 - Setting an Application Trap using Resident Time

<http://www-01.ibm.com/support/docview.wss?uid=swg21609483>

This page provides helpful links to documentation that references this topic.

Summary

Now that you have completed this training module, you can perform these tasks:

- Explain to others what a Managing Server (MS) Data Collector (DC) does
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Now that you have completed this training module, you understand the various levels of Data Collector monitoring and what metrics are provided at each level.

You understand how to adjust the Managing Server D C monitoring level using: Monitoring on Demand, Modify Server Settings, System Properties Page, and by setting a Misbehaving Transaction Trap.

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