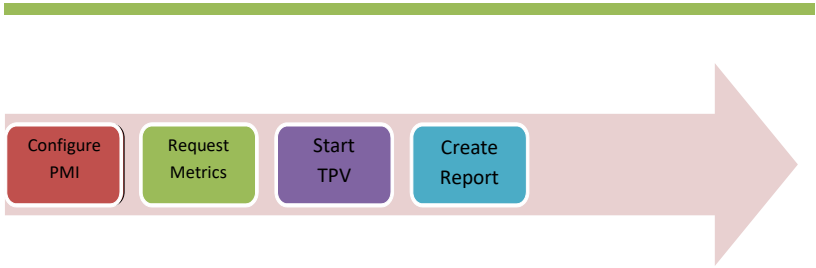
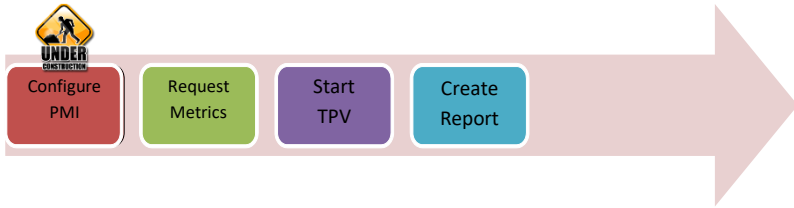


## Lab Exercise 16: MONITORING



1. **Configure PMI**
2. **Enable request metrics**
3. **Start Tivoli Performance Viewer**
4. **Create monitoring report**



## Task 1: Configure PMI

**Step 1:** Navigate to “Monitoring and Tuning>Performance Monitoring Infrastructure (PMI)” and click on the application server name you want to configure.

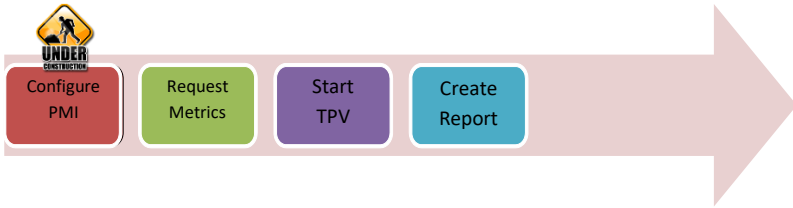
WebSphere Integrated Solutions console

Performance Monitoring Infrastructure (PMI)

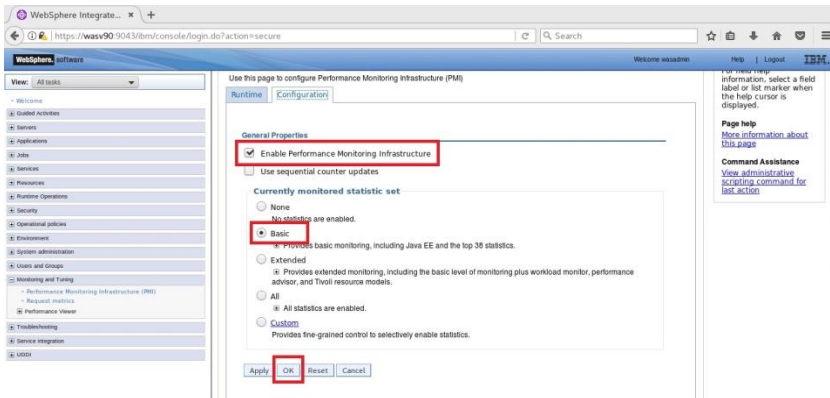
Use this page to configure Performance Monitoring Infrastructure (PMI)

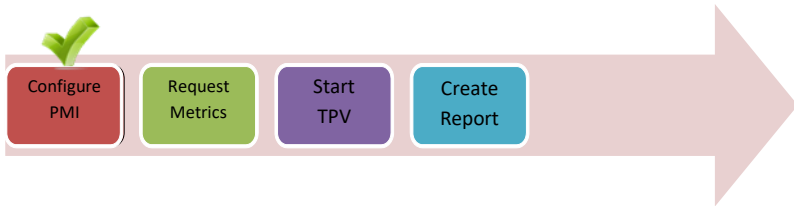
Preferences

Select	Name	Node	Host Name	Version
<input type="checkbox"/>	App_Server1	wasv90Node01	wasv90	ND 9.0.0.0
<input type="checkbox"/>	App_Server2	wasv90Node02	wasv90	ND 9.0.0.0
<input type="checkbox"/>	CDR	wasv90Node02	wasv90	ND 9.0.0.0
<input type="checkbox"/>	nodeagent	wasv90Node01	wasv90	ND 9.0.0.0
<input type="checkbox"/>	nodeagent	wasv90Node02	wasv90	ND 9.0.0.0
<input type="checkbox"/>	server1	wasv90Node01	wasv90	ND 9.0.0.0
<input type="checkbox"/>	server2	wasv90Node02	wasv90	ND 9.0.0.0
Total: 7				



**Step 2:** Select “Enable Performance Monitoring Infrastructure” and select statistics set as “Basic”, then click “OK”.





**Step 3:** Click “Save” to write changes to the master configuration file.

**Messages**

- Changes have been made to your local configuration. You can:
  - [Save](#) directly to the master configuration.
  - [Revert](#) changes before saving or discarding.

An option to synchronize the configuration across multiple nodes after saving can be enabled in [Preferences](#).

The server may need to be restarted for these changes to take effect.

**Performance Monitoring Infrastructure (PMI)**

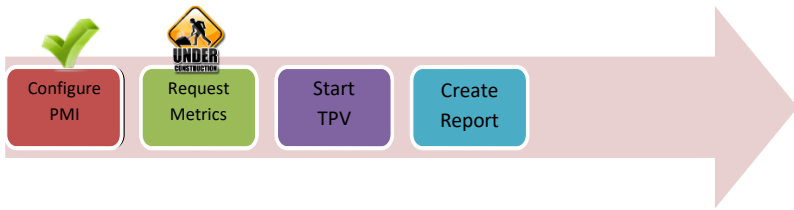
Use this page to configure Performance Monitoring infrastructure (PMI)

**Preferences**

You can administer the following resources:

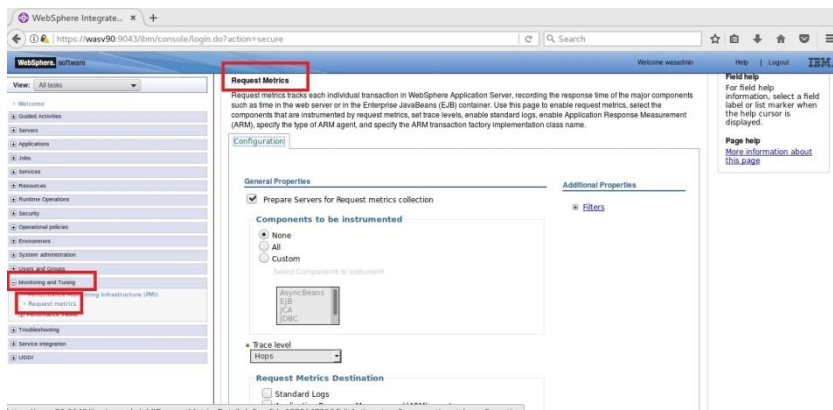
Select	Name	Node	Host Name	Version
<input type="checkbox"/>	App_Server01	wasv90Node01	wasv90	ND 9.0.0.0
<input type="checkbox"/>	App_Server02	wasv90Node02	wasv90	ND 9.0.0.0
<input type="checkbox"/>	CDR	wasv90Node02	wasv90	ND 9.0.0.0
<input type="checkbox"/>	nodeagent	wasv90Node01	wasv90	ND 9.0.0.0
<input type="checkbox"/>	nodeagent	wasv90Node02	wasv90	ND 9.0.0.0

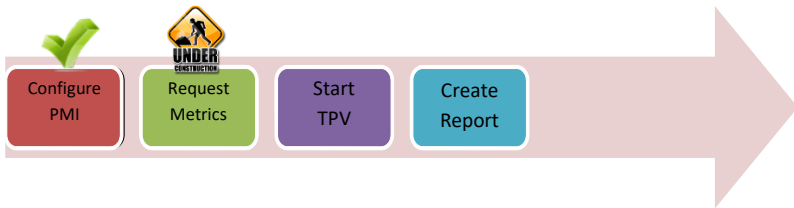
**Task 1 is complete!**



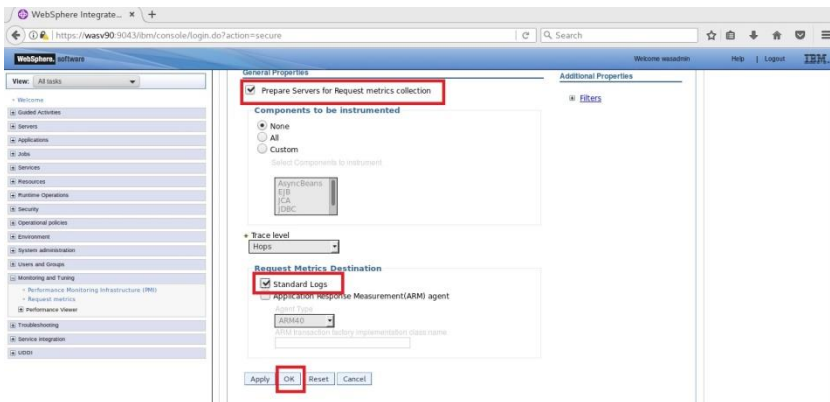
## Task 2: Enable Request Metrics

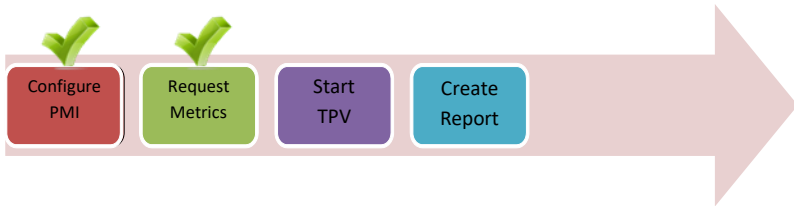
**Step 1:** Navigate to “Monitoring and Tuning>Request Metrics”.



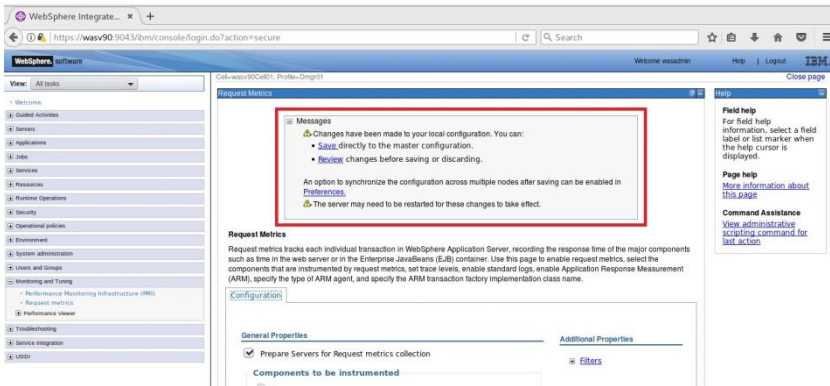


**Step 2:** Select “Prepare Servers for Request metrics collection” and mark “Standard Logs” as “Request Metrics Destination”, then click “OK”.





**Step 3:** Click “Save” to write changes.



**Task 2 is complete!**

**Step 1:** Navigate to “Monitoring and Tuning>Performance Viewer>Current activity”.

**Step 1:** Navigate to “Monitoring and Tuning>Performance Viewer>Current activity”.

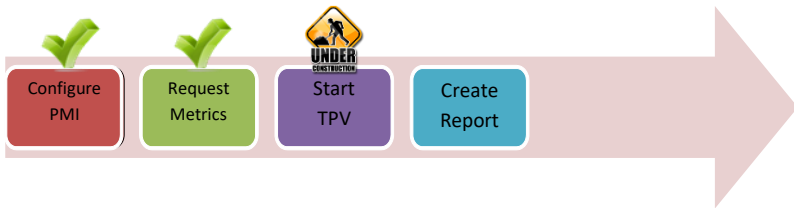
WebSphere Performance Center console showing the 'Host Performance Viewer' for 'Cell=wsv900c0ab1, Profile=Cmgrp1'.

The 'Host Performance Viewer' tab is active, displaying a table of monitored hosts. The table has columns: Select, Server, Node, Host Name, Version, and Collection Status. The table lists six hosts, all with 'Available' status. The 'server1' and 'server2' rows are highlighted.

Select	Server	Node	Host Name	Version	Collection Status
<input type="checkbox"/>	App_Server01	wsav90Node01	wsav90	ND 9.0.0	Available
<input type="checkbox"/>	App_Server02	wsav90Node02	wsav90	ND 9.0.0	Available
<input type="checkbox"/>	CDR	wsav90Node02	wsav90	ND 9.0.0	Unavailable, server stopped
<input type="checkbox"/>	nodeagent1	wsav90Node01	wsav90	ND 9.0.0	Available
<input type="checkbox"/>	nodeagent2	wsav90Node02	wsav90	ND 9.0.0	Available
<input type="checkbox"/>	server1	wsav90Node01	wsav90	ND 9.0.0	Available
<input type="checkbox"/>	server2	wsav90Node02	wsav90	ND 9.0.0	Available

Total 7





**Step 2:** Select the application servers that you want to start Tivoli Performance Viewer and then click “Start Monitoring”.

**Tivoli Performance Viewer**

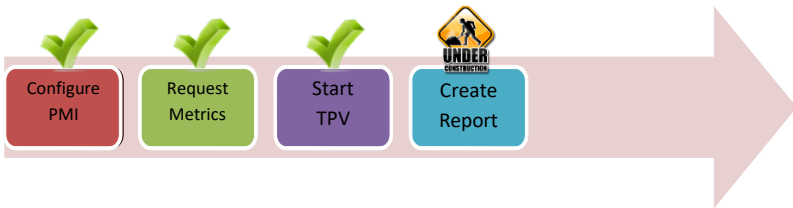
Specifies the server to monitor with Tivoli Performance Viewer. Select the check box for the servers that you want to monitor, and click Start Monitoring. Click the name of the server to display the activity page.

Preferences

☒ Start Monitoring ☐ Stop Monitoring

Select	Server	Node	Host Name	Version	Collection Status
<input type="checkbox"/>	App_Server01	wasv90Node01	wasv90	ND 9.0.0.0	Available
<input type="checkbox"/>	App_Server02	wasv90Node02	wasv90	ND 9.0.0.0	Available
<input type="checkbox"/>	CDU01	wasv90Node02	wasv90	ND 9.0.0.0	Unavailable, server stopped
<input type="checkbox"/>	nodeagent1	wasv90Node01	wasv90	ND 9.0.0.0	Available
<input type="checkbox"/>	nodeagent2	wasv90Node02	wasv90	ND 9.0.0.0	Available
<input checked="" type="checkbox"/>	server1	wasv90Node01	wasv90	ND 9.0.0.0	Available
<input checked="" type="checkbox"/>	server2	wasv90Node02	wasv90	ND 9.0.0.0	Available

Total 7



**Step 3:** Expect a similar success message as below.

**Messages**

- Monitoring has started for server1 on node wasv90Node01.
- Monitoring has started for server2 on node wasv90Node02.

**Tivoli Performance Viewer**

Specifies the server to monitor with Tivoli Performance Viewer. Select the check box for the servers that you want to monitor, and click Start Monitoring. Click the name of the server to display the activity page.

Start Monitoring Stop Monitoring

Select	Server	Node	Host Name	Version	Collection Status
<input type="checkbox"/>	App_Server01	wasv90Node01	wasv90	ND 9.0.0.0	Available
<input type="checkbox"/>	App_Server02	wasv90Node02	wasv90	ND 9.0.0.0	Available
<input type="checkbox"/>	QD01	wasv90Node02	wasv90	ND 9.0.0.0	Unavailable, server stopped
<input type="checkbox"/>	nodeagent	wasv90Node01	wasv90	ND 9.0.0.0	Monitored
<input type="checkbox"/>	nodeagent	wasv90Node02	wasv90	ND 9.0.0.0	Monitored
<input type="checkbox"/>	server1	wasv90Node01	wasv90	ND 9.0.0.0	Monitored
<input type="checkbox"/>	server2	wasv90Node02	wasv90	ND 9.0.0.0	Monitored
Total 7					

**Step 4:** You can check the values by clicking on the name of the application server under “Current activity”.

**Tivoli Performance Viewer - server1**

Use this page to view and refresh performance data for the selected server, change user and log settings, and view summary reports and information on specific performance modules.

Refresh View Module(s)

server1

- Activity
- Settings
- Summary Reports
- Performance Modules

Deselect All

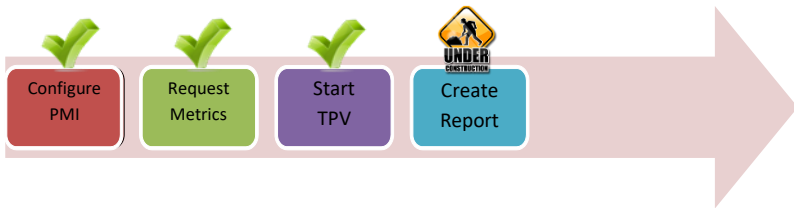
**Services Summary Report**

More information about this page

Start Logging

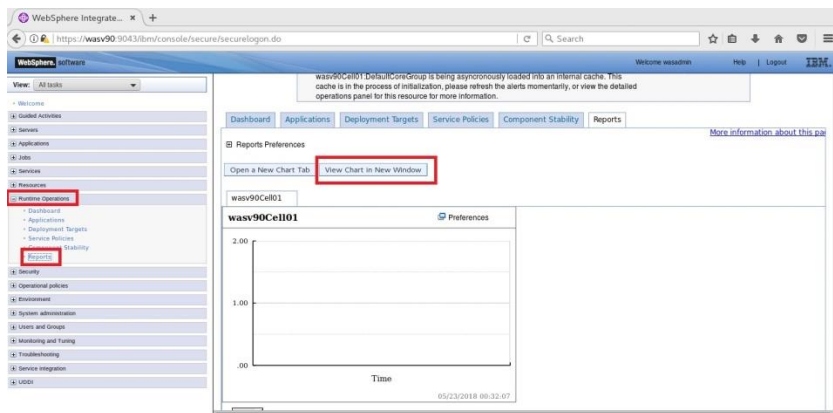
Name	Application	Total Requests	Avg Resp Time (ms)	Total Time (ms)	Time
Hello Pervasive Servlet	DefaultWebApplication.war	0	0	0	12:25 AM
HR Count Servlet	DefaultWebApplication.war	0	0	0	12:25 AM
Snoop Servlet	DefaultWebApplication.war	0	0	0	12:25 AM
ax.ws.rs.core.Application	DayTrader-EES4First.war	0	0	0	12:25 AM
rspservlet	ibmasyncorp.war	0	0	0	12:25 AM
Total 5					

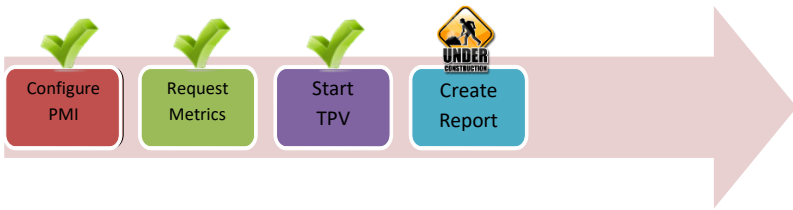
**Task 3 is complete!**



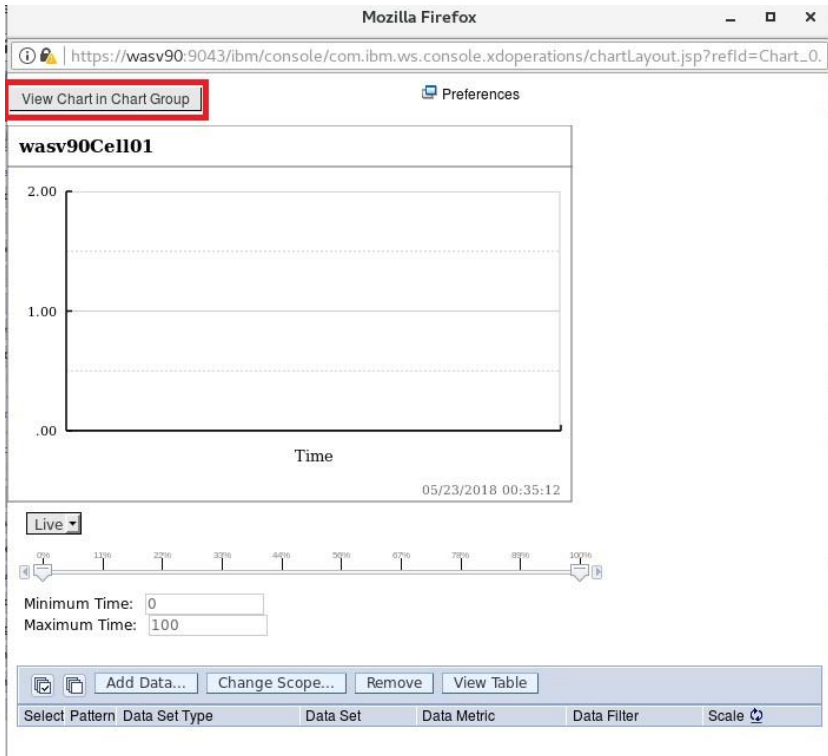
## Task 4: Create Monitoring Report

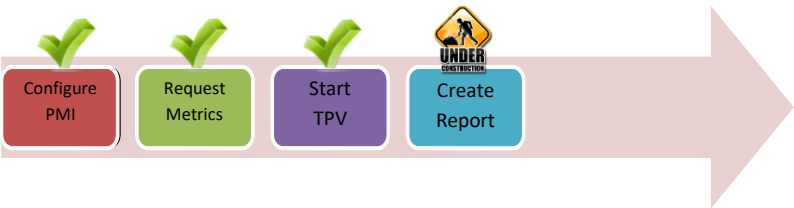
**Step 1:** Navigate to “Runtime Operations>Reports” and click on “View Chart in New Window”.





**Step 2:** Click “Change Scope” to define the report you want to get/





**Step 3:** Change the “Object Type” and the “Object Instance” as application server and application server instance. You can also choose the metrics and then click “OK”.

https://wasv903043/bm/console/com.ibm.ws.console.xdoperations/chartLayout.jsp?refId=Chart\_0.04175209146820258&contextType=XDOperations&curWindow=wasadmingraphFrame31&originalURL=...

Specify the scope from which all charted data is derived

Object type: Object instance

Application server: App-server02 [wasv90Cell01/wasv90Node02]

Organize the metrics by data set

You can further organize the metrics in the chart by selecting a specific data set. Alternatively, to view metrics from the scope of the chart, select "Use current scope as data set".

Data Set Type: Service Policy

Data Set: Default\_SP [wasv90Cell01]

Choose metrics from the selected data set to add to the chart

Available metrics:

- Average Throughput
- Average Response Times (ms)
- Percentile Response Time
- Average Wait Times in Queue (ms)

☐ Display data from the selected on demand routers only

OK Cancel

Minimum Time: 0

Maximum Time: 100

Select Pattern	Data Set Type	Data Set	Data Metric	Data Filter	Scale
----------------	---------------	----------	-------------	-------------	-------

**Task 4 is complete!**

## **SUMMARY**

IBM WebSphere Application Server provides strong infrastructures to gather monitoring data to be used in application environment management activities including performance tuning. PMI collects runtime application server and system data and provides interfaces to allow internal and external applications to reach the collected data. Request metrics provide help in tracking request flow and identifying the time elapsed for each of the major WebSphere Application Server components. In WebSphere Application Server version 8.5, Tivoli Performance Viewer (TPV) is integrated to the administrative console and it allows you to display the PMI data collected from application servers.

## REFERENCES

- [http://pic.dhe.ibm.com/infocenter/wtelecom/v7r1m0/index.jsp?topic=%2Fcom.ibm.twss.doc%2Fcom\\_perfmonitoring\\_c.html](http://pic.dhe.ibm.com/infocenter/wtelecom/v7r1m0/index.jsp?topic=%2Fcom.ibm.twss.doc%2Fcom_perfmonitoring_c.html)
- [http://publib.boulder.ibm.com/infocenter/tivihelp/v63r1/index.jsp?topic=%2Fcom.ibm.itcamt.doc\\_7.3%2Ftt%2Fdita%2Fconcept%2Fkto\\_dom\\_was.html](http://publib.boulder.ibm.com/infocenter/tivihelp/v63r1/index.jsp?topic=%2Fcom.ibm.itcamt.doc_7.3%2Ftt%2Fdita%2Fconcept%2Fkto_dom_was.html)
- [http://publib.boulder.ibm.com/infocenter/wsd400/v6r0/index.jsp?topic=/com.ibm.websphere.iseries.doc/info/ae/ae/tprf\\_tpvmonitor.html](http://publib.boulder.ibm.com/infocenter/wsd400/v6r0/index.jsp?topic=/com.ibm.websphere.iseries.doc/info/ae/ae/tprf_tpvmonitor.html)

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