

IBM Workplace Server Performance and Health Monitor

Installation and User's Guide

Version 1.0

Table of Contents

1. Preface.....	3
2. Installation.....	4
3. Accessing the Monitor.....	5
4. Configuring and Starting a Collection.....	6
5. Viewing the Status of a Collection.....	9
5.1 Summary.....	9
5.2 Current.....	9
5.2.1 Component details.....	9
5.2.2 Component summaries.....	10
5.2.3 Overall.....	10
5.3 History.....	10
5.4 Properties.....	10
5.5 Automatic refresh mode.....	10
6. Stopping a Collection.....	12
7. Uninstall.....	13
8. Advanced Topics.....	14
8.1 Installing in a network deployment.....	14
8.1.1 Set up the scheduler database tables.....	14
8.1.2 Install and update the application property file.....	15
8.1.3 Install and start the application.....	15
8.1.4 Restart the application servers.....	16
8.2 Security.....	17
8.2.1 Modifying roles.....	17
8.3 Component transaction details.....	18
8.4 Application property file.....	19
8.5 Tracing.....	21

1. Preface

The IBM® Workplace™ Server Performance and Health Monitor provides the ability to periodically measure the performance of selected Workplace server components, and generate notifications when errors are detected in those components. A single command installs and activates the monitor as a standard J2EE application on your Workplace server. Configuring and starting the monitor can be accomplished with a single mouse click, at which point the monitor is launched as a background WebSphere® thread where it runs unattended. This even includes restarting itself after a system or server outage. Reports are generated and retained automatically to provide a historical record of the Workplace server's performance and health. Workplace component failures are time-stamped and highlighted in the reports to allow you to quickly focus on problems and perform additional problem determination.

Supported Workplace components are shown below. For more details, see “Component transaction details” on page 19.

- Calendar
- Discussion Team Space
- Document Library
- Messaging
- Web Conference

Supported Workplace server levels are:

- Workplace Collaboration Services 2.6
- Workplace Services Express 2.6

2. Installation

The IBM Workplace Server Performance and Health Monitor is delivered in a .zip file, in which reside these files:

<i>File</i>	<i>Description</i>
wphm_guide.pdf	The Installation and User's Guide
install_wphm.sh	The shell script file used to install the monitor on i5/OS™ and Linux®
install_wphm.bat	The bat file used to install the monitor on Microsoft® Windows® servers
wphm.ear	The J2EE enterprise application
wphm.properties	The application property file

To install the monitor, first ensure that the Workplace server that you are going to monitor is started and functional. Then unzip the .zip file on your server's file system, change to the unzipped directory, then run the following command:

i5/OS

```
install_wphm.sh <was_install_root> <was_admin_id> <was_admin_password>
<instance_name>
```

Linux

```
./install_wphm.sh <was_install_root> <was_admin_id> <was_admin_password>
```

Windows

```
install_wphm.bat <was_install_root> <was_admin_id> <was_admin_password>
```

<i>Parameter</i>	<i>Description</i>
<was_install_root>	The directory where WebSphere is installed. For example: i5/OS: /qibm/proddata/webas5/pme Linux: /opt/WebSphere/AppServer Windows: c:\WebSphere\AppServer
<was_admin_id>	The WebSphere administrator's user ID
<was_admin_password>	The WebSphere administrator's password
<instance>	The instance name of the Workplace server (i5/OS only)

Here is an example invocation for i5/OS:

```
install_wphm.sh /qibm/proddata/webas5/pme wpsadmin wpsadmin wcs26dam
```

The install script is only supported in a single server environment. If you are installing on a Workplace server that is part of a network deployment, see "Installing in a network deployment" on page 15 for complete installation instructions.

3. Accessing the Monitor

The IBM Workplace Server Performance and Health Monitor provides an easy-to-use, browser-based interface for configuring a collection, starting and stopping a collection, viewing recent updates to the collection, and viewing historical data. To access the monitor, point your browser at this URL:

```
http://<workplace_server_host_name>:<internal_http_port>/wphm
```

Initially, only the WebSphere administrator is authorized to access the monitor. See “Modifying roles” on page 18 for details on how to authorize additional users.

Once you have authenticated successfully, the monitor's initial panel is displayed as described in “Configuring and Starting a Collection” on page 7 .

4. Configuring and Starting a Collection

The monitor's initial panel is used to configure and start a *collection*. A collection encompasses all of the activity, and all of the response time and error data that is accumulated from the time you click **Start Collection** until you click **Stop Collection** in the monitor's user interface. During this time, a background thread is scheduled to wake up periodically to run Workplace transactions which will probe the performance and health of the Workplace server. The response time and error data collected by this probing is recorded for later viewing and analysis.

The initial panel allows you to configure the basic properties of a collection.

<i>Basic Collection Property</i>	<i>Description</i>
Components	<p>The Workplace components to be monitored.</p> <ul style="list-style-type: none"> - Calendar - Discussion Team Space - Document Library - Messaging - Web Conference <p>These can be chosen in any combination, but at least one must be selected. Only those components that are available on the Workplace server will be shown.</p> <p>The default is for all available components to be selected.</p>
Collection Update Interval	<p>The interval, in minutes, that Workplace transactions will probe the performance and health of the Workplace server. The set of response time and error data recorded by this is referred to as a <i>collection update</i>.</p> <p>The default interval is 10 minutes. The minimum interval is 3 minutes and the maximum interval is 1000 minutes.</p>
E-mail Notification	<p>The monitor can send out e-mail alerts to a set of users in certain situations:</p> <ol style="list-style-type: none"> 1) An is error detected in one of the collection updates. 2) The Workplace server is ending. 3) The Workplace server has restarted. <p>To e-mail notifications, you must provide information on the SMTP server, and the e-mail to and from addresses.</p> <p>By default, e-mail notifications are disabled. It is recommended that you enable this and provide the required information. Note that the e-mail from-address is required, but is for information only, and that you can supply multiple comma-separated e-mail to-addresses.</p>

<i>Basic Collection Property</i>	<i>Description</i>
Probe user	<p>The background thread that drives the Workplace transactions must run under the user ID of a registered Workplace user. By default, the transactions will be run under the current user's ID. This is sufficient for initial testing, but in production it is recommended that you create a special user ID solely for this purpose.</p> <p>The basis for this recommendation is that, in the process of running the Workplace transactions, objects such as calendar entries, mail messages, documents, and discussion forums will temporarily become visible if the actual user signs in to Workplace. This could create confusion, and even disrupt the monitor if the user were to tamper with those objects. So the simplest solution is to register a special user and specify that user's ID and password here.</p> <p>No special authority is required for this user, but the user's mail account must be provisioned for the messaging tests to work. One way to do this is to sign in to Workplace as that user and click the Mail link before starting a collection for the first time.</p>

At this point you can start the collection or specify additional, more advanced collection properties.

<i>Advanced Collection Property</i>	<i>Description</i>
History logging	<p>In addition to providing a view of the recent response time and error data, the monitor can log collection update data to the local file system. The data is stored in two possible formats:</p> <ol style="list-style-type: none"> 1. html- for viewing with a browser 2. csv – for importing into analysis tools <p>By default, the directory in which the log files are stored is:</p> <pre style="text-align: center;"><was_home>/logs/WebSphere_Portal/wphm</pre> <p>You can change the default by specifying the desired directory as described in “Application property file” in page 20.</p> <p>To provide better management of the historical data, you can also choose to periodically archive the current log file. If you choose to archive, you can specify these frequencies:</p> <ul style="list-style-type: none"> - Hourly - Daily - Weekly - Monthly

<i>Advanced Collection Property</i>	<i>Description</i>
	<p>When the specified archive time period ends, the monitor will create a new log file, leaving the old one behind. To limit the number of retained log files, you can specify a limit, beyond which the oldest log files will be automatically deleted. The maximum limit is 1000.</p> <p>The default is for logging to be enabled, archived daily, with a retention maximum of 7 archive files. This will maintain the Workplace server's performance and health history for the past week.</p> <p>When specifying a log directory on i5/OS, make sure that user profile QEJBSVR has update access to that directory.</p>
Current collection updates	<p>The monitor will keep this number of most recent collection updates in memory for viewing through the Status panel. For collection update information beyond this point, you must enable history logging and view the data in the log files. The default is to maintain the most recent 10 collection updates. The maximum is 1000.</p>

There is an additional set of properties that typically will never need to be updated. They are maintained in the application property file. For more information on these settings, see “Application property file” on page 20.

Once the configuration panels have been filled in and the **Start Collection** button is clicked, the Workplace component probes are scheduled in the background, and the Collection Status panel is displayed, as described in “Viewing the Status of a Collection” on page 10. Since the background probes are disconnected from the user interface, you can end your browser session at any time, and the collection updates will continue to run on their scheduled intervals.

If there is a server or system outage while a collection is active, the collection will be restarted automatically when the server comes back up. The reactivated server will have the same properties as the collection that was active at the time of failure.

5. Viewing the Status of a Collection

The status panels provide the ability to view the status of an active collection along with the response time and error data recorded in the collection updates. There are four main tabs on the panel:

- Summary
- Current
- History
- Properties

Note that only a single collection can be active at any point in time for a Workplace server. If a collection is already active when you access the monitor, this panel is displayed. To configure a new collection, you must first stop the active collection.

5.1 Summary

When the **Summary** tab is clicked, the following information is displayed:

- The current health of each of the monitored components, coded in three colors:
 - Green: No errors were detected during the most recent collection update
 - Yellow: The health of the component is unknown.
 - Red: Errors were detected during the most recent collection update
- Status of the background thread that drives the Workplace transactions. This includes the last time it ran, the next scheduled time, the total number of runs, and its current status, which can be either “Idle” or “Running.”

5.2 Current

When the **Current** tab is clicked, the response time and error information from the most recent collection updates is displayed. You can see a summary of each monitored component, and the details within each monitored component. The number of collection updates displayed here is controlled by the “Current collection updates” collection property as described on page 9.

5.2.1 Component details

If you click a tab labelled with the name of one of the monitored components you will see the lowest level view of the Workplace server's performance and health. Each table row represents a single collection update and each cell represents the response time of a single transaction during that collection update. By scanning across the row, you can see the response times, in seconds, of the various transactions that took place during a collection update. By scanning up and down the column, you can see how a particular transaction response time varied across different collection updates. When a transaction fails for any reason, an error icon is displayed next to the response time. Clicking on that icon will display the message associated with the failure, along with a time stamp.

5.2.2 Component summaries

If you click on the **Components** tab you will see a column for each monitored component. The statistics presented here are the average response times of the set of transactions for each component during each collection update. If any error occurred in any of the transactions for a particular component, it will also be indicated with an error icon here.

5.2.3 Overall

Also on the “Components” tab is a column labelled “Overall.” This contains the average response time of all transactions run during a collection update. It provides the highest level view of the overall Workplace server's performance and health.

5.3 History

When the **History** tab is clicked, a panel is presented with links to the current log file, plus all of the archived log files. You can also access these log files, which are stored in the log file directory that was specified when the collection was configured, directly from the file system. The directory in which the log file is stored is specified by the “History logging” configuration property on page 8.

Html-formatted logs are most useful for viewing the historical performance and error statistics. These are the files that are displayed when you click the **History** tab. The statistics recorded in the html log file are the same as those displayed on the status panel, although they are formatted a bit differently. Instead of using an error icon to indicate a transaction failure, the table cell will be colored yellow or red, depending on the severity of the failure. Also, the bottom two rows of the table will contain two additional average response times. The first shows the average response time for each transaction from the time the log file was created until the most recent collection update recorded in the log file. The second shows the average response time for each transaction from the time the collection was started until the most recent collection update recorded in the log file. These can be useful for analyzing response time trends over a long period of time.

Csv-formatted files are better suited for importing into external analysis tools. Only the performance statistics are stored in these logs files; no error information is maintained. There is no viewer provided for csv files so they must be accessed directly from the log directory in the local file system.

5.4 Properties

When the **Properties** tab is clicked, a panel is presented which allows you to review the configuration properties that were defined when the collection was started. The properties are described in “Configuring and Starting a Collection” on page 7.

5.5 Automatic refresh mode

When viewing the status of a collection, you can enter “automatic refresh mode” by

clicking the button labelled “Start Automatic Refresh”. In this mode, the browser will periodically be updated with the latest collection status. You can still navigate around the status panels, but to stop the collection you must first exit this mode by clicking the button labelled “Stop Automatic Refresh”.

You can control the browser refresh rate, which will apply to all users, by modifying the “clientRefreshInterval” property as described on page 21. Also note that since the browser is periodically requesting updated information from the server, there will be more server resources consumed and the session will not time out.

6. Stopping a Collection

An active collection can be stopped by clicking the **Stop Collection** button on the status panel. The log files are left intact and can still be accessed from the local file system. The collection configuration properties are saved and will be restored as the default values when you configure a new collection.

7. Uninstall

To stop the monitor application and remove it from your server, follow these steps:

1. If an collection is active, stop it.
2. Sign in to the WebSphere administrative console. Go to **Applications -> Enterprise Applications**, scroll down until you find the application (WcsApiProbeAuimlEAR). Select it and Click **Stop**.
3. After the application (WcsApiProbeEar) is stopped, scroll down until you find the application (WcsApiProbeEar). Select it and Click **Uninstall**.
4. Save your modifications, then log out of the WebSphere administrative console.

The log files are not deleted by this process.

8. Advanced Topics

This chapter covers a set of advanced topics that are not essential to using the monitor in a typical environment.

8.1 Installing in a network deployment

In a network deployment, the monitor application is set up only once, but collections must be managed and run independently on the individual nodes. The monitor must be accessed using the target node's internal http port to ensure your session does not get switched over to another node.

As mentioned previously, the install script does not support Workplace servers that are part of a network deployment. The following manual steps are required to install and activate it.

1. Set up the scheduler database tables.
2. Install the property files.
3. Install and start the application.
4. Restart the application servers

Once these steps are complete, the monitor runs on the individual cluster nodes the same way it runs on a single server deployment.

8.1.1 Set up the scheduler database tables

For each application server node in the cluster, you must create a set of tables in the Workplace common schema on your cluster's database server. Templates for the SQL statements are specific to the database server platform and can be found in these two files:

```
<was_install_root>/scheduler/createTablespace<db_platform>.ddl  
<was_install_root>/scheduler/createSchema<db_platform>.ddl
```

On i5/OS, there is no need to deal with the createTablespace file, so the only file you need to deal with is:

```
/qibm/proddata/webas5/pme/scheduler/createSchemaDB2iSeries.ddl
```

Find the name of the common Workplace schema. It is specified by the LWPComSchema property in this file:

```
<workplace_home>/config/database/ddbuild.properties file.
```

For each node in the cluster, do the following:

- Make a copy of the .ddl files and change all occurrences of “@TABLE_PREFIX@” to a unique value (for instance, for the first cluster node you could use “WPHM_1”, for the second you could use “WPHM_2”).
- Create the required database tables by connecting to the Workplace common schema

- and running the modified SQL statements in the modified .ddl files.
- Sign on to the WebSphere administrative console and create a new Scheduler configuration for the WebSphere_Portal server on the current node (there should already be one named “lwpSchedulerResource”). You will have to adjust the scope specification to get to this point. The new configuration should be identical to the existing “lwpSchedulerResource” resource, except for these fields:
 - Table Prefix - This is string that you earlier used to replace “@TABLE_PREFIX@” (for instance, “WPHM_1” or “WPHM_2”).
 - Name - This is the name of the scheduler resource and can be the same as the table prefix.
 - Jndi Name - This also can be the same as the table prefix.
 - Save the new scheduler configuration
 - Ensure that the Workplace database user has authority to the new tables. For instance on i5/OS, you can run this command:


```
CHGAUT OBJ('/qsys.lib/<common_Workplace_schema>.lib/<table_prefix>*')
USER(<Workplace_db_user>) DTAAUT(*RWX) OBJAUT(*ALL)
```

8.1.2 Install and update the application property file

The application property file must be installed on each of the nodes.

- Copy the wphm.properties file, which was packaged in the .zip file, to this directory on each node:


```
<was_home>/WorkplaceServer/properties
```
- If on i5/OS, make sure QEJBSVR can access the file.
- Change the value for the following property to specify the node's scheduler resource JNDI name, which you created earlier. For instance, on the cluster's first node, you could specify:
 - `com.ibm.wphm.schedulerJndiName=WPHM_1`

8.1.3 Install and start the application

Installing and starting the application is performed from the central WebSphere administrative console.

- At the administrative console, go to **Applications -> Enterprise Applications -> Install Application**, and specify the downloaded wphm.ear file.
- Click **Next** on all the panels, taking the defaults on all panels except on these two panels:
 - “Map Modules to Application Server” - On this panel make sure that all modules are deployed on your WebSphere_Portal cluster.
 - “Map Security Roles to Users/Groups” - On this panel add at least one user or group to the “monitorAdmin” role to allow access to the monitor.
- At the end, click **Finish** to launch the application install
- Once completed, go to **Applications -> Enterprise Applications**, scroll down until you find the newly installed application (WcsApiProbeAuimlEar), then click on it.
 - Now scroll down and click on **Web Modules**

- Click on **WpsApiProbeAuiml.war**
- Change the Classloader Mode to **PARENT_LAST**
- Apply the change then save and synchronize the configuration.
- Go to **Applications** -> **Enterprise Applications**, scroll down until you find the newly installed application (WcsApiProbeEar). Select it and Click **Start**.

8.1.4 Restart the application servers

To activate the new scheduler resources, the application servers must be restarted. Once this is complete, you can access a node's monitor with this URL:

```
http://<workplace_server_host_name>:<internal_http_port>/wphm
```

8.2 Security

The monitor uses WebSphere's role-based security to enforce two security zones. Anonymous access is not allowed.

- Only those users and groups defined in the “monitorAdmin” role may access the monitor's user interface. By default, the only user in this role is the WebSphere administrator. See “Modifying roles” below for details on how to add users and groups to a role.
- Only those users defined in the “probeRunner” role may be used to run the Workplace transactions. In other words, only users in this role can be specified on the “Probe user” collection property on page 8. By default, all authenticated users are defined for this role. See “Modifying roles” below for details on how to add users and groups to a role.

8.2.1 Modifying roles

Follow these steps to modify the users and groups assigned to a role.

1. Sign in to the WebSphere Administrative Console.
2. Click **Applications** -> **Enterprise Applications**.
3. Scroll down until you find WcsApiProbeAuimlEAR. Click on its name.
4. Scroll down and click **Map security roles to users/groups**.
5. Click the role you want to modify, then either **Lookup Users** or **Lookup Groups**.
6. Fill in the search criteria, click **Search**.
7. Select the desired user or group, click >> to move it to the “Selected” box.
8. Click **OK** twice, then make sure you save the updated configuration.
9. Restart the WcsApiProbeAuimlEAR application by once again clicking **Applications** -> **Enterprise Applications**. Scroll down until you find WcsApiProbeAuimlEAR, then click **Stop**, followed by **Start**.

8.3 Component transaction details

This table shows which transactions are run for each Workplace component during a collection update.

<i>Component</i>	<i>Transactions</i>
Calendar	<ul style="list-style-type: none">• Add an appointment to the user's calendar• Update the appointment• Retrieve the appointment• Delete the appointment
Discussion	<ul style="list-style-type: none">• Create a team space based on the discussion template (Optional)• Create a discussion forum in the new team space• Post a new topic to the discussion forum• Post a reply to the new topic• Delete the reply• Delete the topic• Delete the discussion forum• Delete the team space (Optional)
Documents	<ul style="list-style-type: none">• Create a document library (Optional)• Create a folder in the document library• Create a document in the new folder• Delete the document• Delete the folder• Delete the document library (Optional)
Messaging	<ul style="list-style-type: none">• Send a mail message• Retrieve all mail folders• Refresh the inbox• Retrieve the message that was just sent• Delete the message
Web Conference	<ul style="list-style-type: none">• Create a new web conference (Optional)• Update the new web conference• Search for the new web conference• Delete the web conference (Optional)

8.4 Application property file

When the monitor is installed, a property file is copied to this location:

```
<was_home>/WorkplaceServer/properties/wphm.properties
```

If needed, you can modify these properties as described in the table below. Most of the modifications will take effect on the subsequent collection activation.

<i>Property (prefixed with “com.ibm.wphm.”)</i>	<i>Default Value</i>	<i>Description</i>
isCdoCreateDeleteEnabled	false	If this is set to true, then the collection updates will include, in addition to the normal transactions: 1) Discussion team space create and delete. 2) Document library create and delete. 3) Web Conference create and delete. These are heavyweight operations and are not recommended to be included, especially if the collections will be run for a long time; more than one day.
isAutoRestartEnabled	true	Allows the monitor to automatically restart the previous collection after a server restart. This relieves the administrator from having to remember to sign in to the monitor and restarting the collection after a system or server outage.
autoRestartFileName	autoRestart.ser	The name of the file that is used to store the auto-restart data that is used to launch a collection when the Workplace server starts.
autoRestartDirectoryName	blank	The name of the directory where the auto-restart data is stored. A blank value indicates to use the default directory: <was_home>/logs/<server_name>/wphm
htmlLogDirectoryName	blank	The name of the directory where the html log files are stored. A blank value indicates to use the default directory: <was_home>/logs/<server_name>/wphm
csvLogDirectoryName	blank	The name of the directory where the csv log files are stored. A blank value indicates to use the default directory: <was_home>/logs/<server_name>/wphm
htmlLogFileNameRoot	monitor_	The prefix for the collection html log file name. The suffix consists of a time stamp of when the log file was created.
csvLogFileNameRoot	csv_	The prefix for the collection csv log file name. The suffix consists of a time stamp of when the log file was created.
emailErrorNotificationSubject	IBM Workplace Server Performance and Health Monitor Notification	The text sent as the subject line of all e-mail notifications.
emailCollectionRestartMessage	An active collection has been automatically restarted	The text sent as the message body in e-mail notifications related to collection restarts.
emailTerminationMessage	An active collection has been terminated abnormally	The text sent as the message body in e-mail notifications related to abnormal terminations of the collection.
hideInitialDetailColumnsThreshold	13	The maximum number of columns initially displayed in the history log files.
emailReceiptPollInterval	5	The number of seconds between attempts to refresh the inbox and receive the message send during the message component test.
emailReceiptTimeout	60	The total number of seconds to wait on receipt of the message before giving up and declaring that an error has occurred.
schedulerJndiName	lwpResource	The WebSphere scheduler resource used to drive the periodic collection updates. By default, the one created at Workplace instance creation time is used. This only needs to be modified if the Workplace server is in a network deployment.
workManager	lwp/lwpSchedulerWork Manager	The WebSphere work manager resource is used to plug into the scheduler service. By default, the one created at Workplace instance creation time is used.
clientRefreshInterval	60	The interval, in minutes, that the browser will poll the monitor when automatic client refresh is enabled.

8.5 Tracing

The monitor supports the standard WebSphere tracing facility. You can enable tracing of monitor activity by specifying “com.ibm.wphm.*=all=enabled” in the diagnostic trace panel.