

HP Business Availability Center

for the Windows and Solaris operating systems

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Using End User Management

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Welcome to This Guide

This guide describes how to work with the End User Management Administration interface to configure and maintain Real User Monitors and Business Process Monitors in HP Business Availability Center, and how to work with the End User Management application.

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How This Guide Is Organized

The guide contains the following parts:

Part I General and Administration

Describes how to work with End User Management Administration including understanding and working with the monitor tree, defining and managing view settings, and working with Global Replace. Also describes working with End User Management reports, as well as the End User Management status snapshot and user reports.

Part II Business Process Monitor

Describes how to create and manage Business Process Monitor profiles and monitors in HP Business Availability Center, as well as the Business Process reports, summary reports, and network tools.

Part III Real User Monitor

Describes how to create and manage Real User Monitors in HP Business Availability Center, as well as the Real User Monitor reports.

Part IV User Interface

Describes the pages and dialog boxes that are part of the Real User Monitor Administration and Real User Monitor reports user interfaces.

Who Should Read This Guide

This guide is intended for the following users of HP Business Availability Center:

- HP Business Availability Center administrators
- HP Business Availability Center application administrators
- HP Business Availability Center end users

Readers of this guide should be knowledgeable about navigating and using enterprise applications, and be familiar with HP Business Availability Center and enterprise monitoring and management concepts.

Getting More Information

For a complete list of all online documentation included with HP Business Availability Center, additional online resources, information on acquiring documentation updates, and typographical conventions used in this guide, see the *HP Business Availability Center Deployment Guide* PDF.

Part I

General and Administration

1

Using End User Management Administration

End User Management Administration enables you to reduce the time spent managing your monitoring environment by providing a convenient, Web-enabled interface for viewing and administering Business Process and Real User Monitor profiles and monitors.

This chapter describes:	On page:
About Using End User Management Administration and the Monitor Tree	16
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About Using End User Management Administration and the Monitor Tree

Your monitor deployment is presented in End User Management Administration as a dynamic hierarchy in the form of a user-defined, monitor tree. You use the monitor tree as the starting point for all your monitor configuration and administration activities.

You create and customize the monitor tree in End User Management Administration to reflect your monitoring enterprise. For details, see “End User Management Administration Overview” on page 16. You begin with the enterprise node which is the default, top level of every monitor tree and contains all the other objects in the monitoring environment. For details, see “Understanding Monitor Tree Objects” on page 23.

You can access the pages for adding and editing different objects in the monitor tree by navigating through the monitor tree itself and its menus, or within the Contents tab. For details, see “Navigating and Performing Actions in the Contents Tab and the Monitor Tree” on page 25.

Adding user-defined containers to the monitor tree helps you organize your data collector, profile, and monitor configurations. For details, see “Managing Containers in the Monitor Tree” on page 28.

End User Management Administration Overview

End User Management Administration is a Web-based, centralized solution for configuring the various monitor types that collect performance data for HP Business Availability Center. It provides an intuitive and customizable interface with multiple view options, based on a hierarchical tree view. The hierarchy can be built to reflect the monitoring structure of your HP Business Availability Center deployment.

You use End User Management Administration and the monitor tree to:

- ▶ organize performance monitoring data for your entire enterprise. For details on the various monitor tree objects, see “Understanding Monitor Tree Objects” on page 23.
- ▶ navigate across multiple monitors and profiles and drill down to monitor configuration details. For details, see “Navigating and Performing Actions in the Contents Tab and the Monitor Tree” on page 25.
- ▶ create relationships with existing configuration items in the Universal CMDB. For details, see “Configuration Items and End User Management Monitor Objects” on page 26.
- ▶ create user-defined containers to organize monitoring objects. For details, see “Managing Containers in the Monitor Tree” on page 28.
- ▶ create and manage Business Process profiles and transactions. For details, see “Managing Business Process Profiles” on page 91.
- ▶ manage Real User Monitor engine settings and probes, define server names and host aliases, and configure the Real User Monitor to report specific page, transaction, event, and end-user data. For details, see “Real User Monitor Administration” on page 247.
- ▶ customize the display of monitor information with filter settings. For details, see “Setting Views” on page 33.
- ▶ make changes to multiple monitor configurations across multiple servers with a single action using global search and replace. For details, see “Using Global Replace” on page 39.

Working with End User Management Administration

The End User Management Administration interface displays a number of elements that you use to manage the monitoring objects in your environment and customize the display of monitoring information. The interface is divided vertically into two main areas:

- ▶ the monitor tree (for details, see “Understanding Monitor Tree Objects” on page 23)
- ▶ the content area (for details, see “Navigating and Performing Actions in the Contents Tab and the Monitor Tree” on page 25)

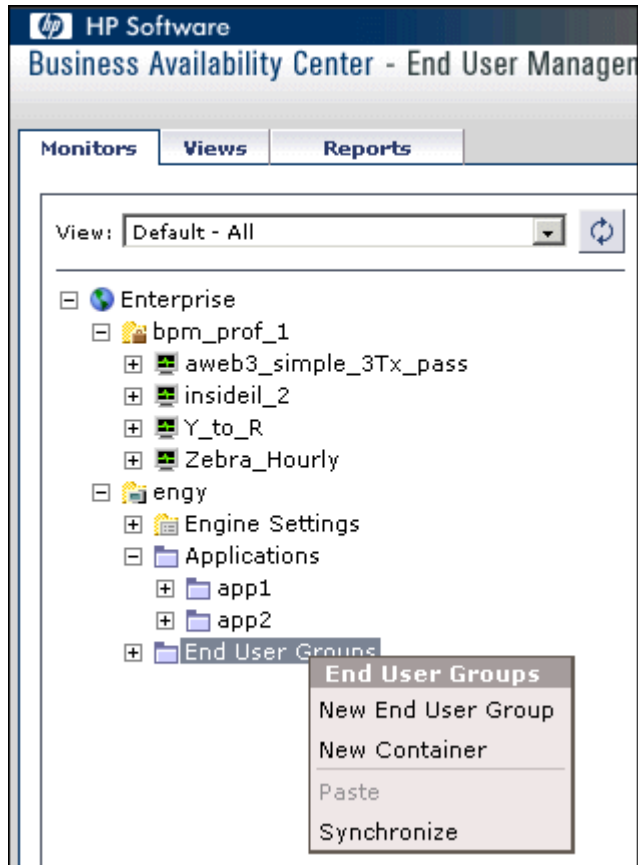
The controls and action menus in these two areas of the End User Management Administration interface provide you with multiple paths for managing objects in your monitoring environment.

For example, to edit a monitor configuration, you can use the **Edit** option in the action menu for the monitor in the monitor tree or you can click the edit icon to the right of the monitor name in the monitors panel of the Contents view tab.



Monitor Tree

The monitor tree displays object containers in a hierarchical or filtered view. You use this tree to navigate to specific object containers and perform actions by using context-sensitive, right-click menus. The following is an example of the monitor tree showing several objects and an example of a right-click action menu.



Contents Area

The contents area displays view panels and tables that you use to view the detailed content of object containers, and manage configuration settings for monitors. You control the information displayed by the content area using one of the view tabs along the top of the area. The view tabs available depend on the object or element selected in the monitor tree and include:

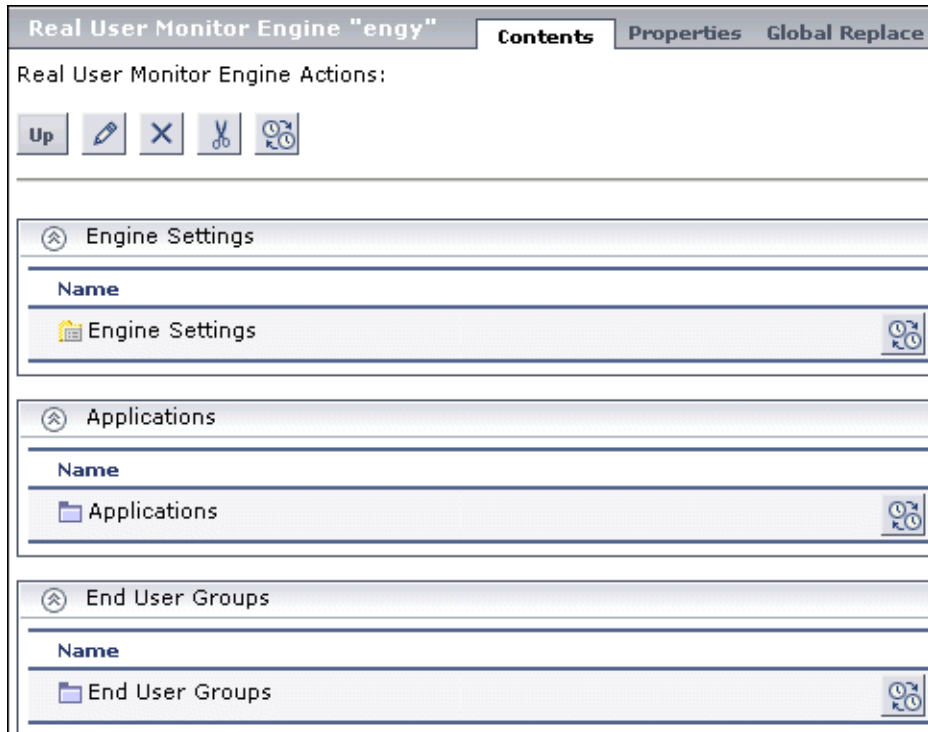
- Contents View
- Properties View
- Data Collectors
- Global Replace

The following sections provide an overview of these views.

Contents View

The Contents view displays the objects that are children of a node in the tree. The Contents view also provides features you use to manage objects. This includes actions that are available in the tree action menus as well as actions that can be performed on a group of objects.

The following is an example showing the tables in the Contents tab for a Real User Monitor engine.



Properties View

You use the Properties view tab to view and edit configuration properties or settings for objects in the monitoring environment. The specific properties vary according to which object is selected in the monitor tree. The default Properties view is a read only view of the settings for the applicable object. You click the **Edit** button to be able to make changes to the settings.

The following is an example of the Properties tab for a Real User Monitor engine. This view contains collapsible panels you use to view and edit configuration settings.

Real User Monitor Engine "engy" Contents **Properties** Global Replace

Up

⊕ Main Settings

Engine name* engy

Description

IP address* 1.1.1.1

Report data
only for
defined
applications

⊖ Advanced Settings

⊖ Category Settings

Edit

Data Collectors

You use the Data Collectors tab to assign monitors to host locations for Business Process profiles. For more information, see “Using the Data Collectors Tab” on page 99.

Global Replace

The Global Replace tab provides a tool for making changes to multiple objects in a single operation. For more information, see “Using Global Replace” on page 39.

Understanding Monitor Tree Objects

The monitor tree of End User Management Administration represents the organization of systems and services in your network environment. The root node of the tree is the enterprise container. Only one enterprise node exists in the monitor tree. You add all other elements to the tree under the enterprise node.



There are two classes of elements in the monitor tree. These are:

- Containers
- Objects

Containers

Containers enable you to organize the display of monitor configuration information according to location or organizational relationship. Container elements are user-defined and represent locations, organizations, servers, agents, and other hierarchies within the infrastructure. The containers you create are native to End User Management Administration. Every End User Management Administration tree includes the enterprise container as its default, top-level container, containing all the other objects in the tree.

The following table presents the containers in the monitor tree.







Container	Icon	Description
Enterprise		Each tree has one enterprise container as its root node, representing the entire monitoring infrastructure.
Container		A container used to organize the display of information based on any criteria. For details, see “Managing Containers in the Monitor Tree” on page 28.




With the exception of the enterprise container, multiple instances of containers can be added to the monitor tree. Each container may be added as a child within another container or directly under the enterprise node.

Objects

Object elements are configuration and control objects in your monitoring infrastructure. Objects can either be created within, or imported to, the monitor tree. Existing objects, such as Real User Monitor engines, cannot be created in End User Management Administration but are imported into the monitor tree for configuration.

The following table lists the objects that may appear in the tree. It also lists to which parent item in the tree the object belongs and how the object can be added to the monitor tree.

Icon	Object Description	Parent	Add to Tree by:
Business Process Objects			
	Business Process Profile	Enterprise or container	Creating
	Any monitor belonging to a Business Process profile	Business Process profile	Creating
Real User Monitor Objects			
	Real User Monitor engine	Enterprise or container	Adding to End User Management Administration
	Real User Monitor settings	Real User Monitor engine	Automatically added with engine object
	Real User Monitor container for Probes, Servers, Host Aliases, Applications, Pages, End Users, and Transactions	Real User Monitor engine or settings directory	Automatically added with engine object
	Real User Monitor Probes, Pages, and End Users	Real User Monitor container	Automatically added with engine object

Icon	Object Description	Parent	Add to Tree by:
	Real User Monitor Transactions	Real User Monitor container	Automatically added with engine object
	Global HTTP Error Event	Real User Monitor engine or settings directory	Automatically added with engine object
	Application or Page Event	Real User Monitor application or page directory	Automatically added with engine object

For details on:

- ▶ Business Process objects, see “Managing Business Process Profiles” on page 91.
- ▶ Real User Monitor objects, see “Real User Monitor Administration” on page 247.

Navigating and Performing Actions in the Contents Tab and the Monitor Tree

There are several ways to navigate the monitor tree, perform actions, and edit object properties.

The monitor tree itself enables you to highlight any object within the tree and right-click the object to access a menu of options for that object. For example, if you right-click the enterprise node, you select from a menu listing only those actions that can be performed on the enterprise node.

The Contents tab enables you to view all the objects within any of the containers or profiles in the monitor tree, including the enterprise node itself. When an object that includes child objects is highlighted, the Contents tab lists all of the child objects according to their type. For example, if a Business Process profile is highlighted in the monitor tree, the Contents tab lists all the monitors included in that profile, organized according to type of monitor.

Additionally, the Contents tab enables you to select actions for each object type. The actions applicable to the highlighted object appear as optional buttons at the top of the Contents page. The actions applicable to the child objects of the highlighted object appear as optional buttons in the area listing the objects of that type.

Accessing Object Properties for Editing

You can select from the following options when accessing an object's properties for editing:

- ▶ In the monitor tree, right-click the object and choose **Edit** in the profile's menu.
- ▶ In the Contents tab you can either:
 - ▶ highlight the appropriate object in the monitor tree and click the **Edit** button at the top of the Contents page.
 - ▶ click the **Edit** button next to the appropriate object where it appears under object type in the Contents page.



Configuration Items and End User Management Monitor Objects

When an object is added to End User Management Administration, that object creates a corresponding configuration item (CI) in the HP Universal configuration management history database. For details on understanding configuration items, see “Configuration Management Database (CMDB) Concepts” in *Reference Information*.

The End User Management Administration objects that populate the Universal CMDB include both actual monitors and the groups or profiles in which they are created. Actual monitors, for example transaction monitors and Real User Monitor transactions and pages, are represented in the Universal CMDB as monitor CIs. Monitor CIs receive data from the data collectors and use the data to calculate Key Performance Indicator (KPI) status. Profiles in End User Management Administration are represented as group CIs in the Universal CMDB and receive KPI status from the monitor CIs created by the monitors they are running.

You can also create relationships between an End User Management Administration object and any existing, logical CI in the Universal CMDB. This relationship enables the monitor or profile to pass KPI status to the CI to which it is attached.

You can create this relationship:

- ▶ using the Modeling tab in Universal CMDB Administration. For details, see “Attaching Existing CIs” in *IT World Model Management*.
- ▶ using End User Management Administration. For details, see below.

Attaching CIs While Creating Objects in End User Management Administration

You can attach an existing CI to the monitor object you are creating. You can attach one or more configuration items to the following types of End User Management Administration objects:

- ▶ Business Process profile
- ▶ Business Process transaction monitor
- ▶ Real User Monitor page
- ▶ Real User Monitor transaction

To attach a configuration item to a monitor object in End User Management Administration:

- 1** While adding a monitor object, expand the Configuration Item Attachment Settings area.
- 2** Click **Select CIs**. The Select CIs dialog box opens.
- 3** Select a view in the left pane that includes the CI you want to attach to the monitor object. For details on selecting and working with views, see “View Explorer” in *Reference Information*.
- 4** Select a CI from the listed CIs in the view by clicking in the selection box to the left of the CI name.

To make your selections, you can also use the buttons at the bottom of the pane for **Select All**, **Clear All**, and **Invert Selection**.

- 5 Click the right-hand arrow button to move the selected CIs from the left pane to the right pane.
- 6 Click **OK** to attach the selected CIs to the monitor object. The CI name and type are listed in the Configuration Item Attachment Settings area for this monitor object.

You can view and edit the relationship you created in the IT Universe Manager in Universal CMDB Administration. For details, see “Topology Map” in *IT World Model Management*.

Note: The monitor CI appears in the views as a child object to the original CI only if, in the original CI’s properties, the **Include Related Elements** option is selected. For details, see “Include Related CIs” in *IT World Model Management*.

Managing Containers in the Monitor Tree

You can organize monitoring information in terms of physical location, operational purpose, line-of-business, organizational unit, or any other classification that is applicable to your enterprise.

For example, you could add three containers named Europe, America, and Asia representing different locations. Within the America location container, you could create four other containers North, East, South, and West. Within each of these container locations, you can add multiple containers, representing different departments in your organization. These containers can then be used to organize your organizations profiles and monitors.

You can add a container directly to the enterprise node or into any container.

When you delete a container, you also delete all the contents of that container. For example, if you have a container into which Real User Monitor pages have been added, deleting the container also deletes the Real User Monitor pages from the monitor tree.

To add a container to the monitor tree:

- 1** Access End User Management Administration by selecting **End User Management** in the Admin menu. Select from the following options:
 - ▶ Right-click the container into which you want to add a container. The container's menu opens. Select **New Container**.
 - ▶ Highlight the enterprise container into which you want to add a container and click the **New Container** button at the top of the Contents page.

The New Container page opens.



- 2** Under **Main Settings**, enter the name for the container you want to create.
- 3** Optionally, you can enter a description for the container in **Advanced Settings**. This description is available only when editing or viewing the properties of the container.
- 4** Click **OK**. The new container is added to the monitor tree.

To edit a container:

- 1** Access the Edit Container page (for details, see “Accessing Object Properties for Editing” on page 26).
- 2** Edit the fields as required.
- 3** Click **OK** to apply the changes.

To delete a container:

Select from the following options:

- ▶ Right-click the container in the monitor tree and select **Delete** from the menu.
-  ▶ In the Contents tab, click the **Delete** button next to the container you want to delete.
-  ▶ With the container you want to delete highlighted, click the **Delete** button at the top of the Contents tab.

Note: When you delete a container, all its contents are also deleted from the monitor tree.

Synchronizing Profile Data

Business Process profile information is stored in the profile database and the management database used by your HP Business Availability Center platform. When working with profiles in End User Management Administration, you can synchronize the information stored in the databases with the profile information in your monitor tree. This procedure checks that the data related to profiles in both End User Management Administration and the profile database are consistent.

If you have gotten an error message telling you to synchronize or you think you may be having functionality issues because of a lack of synchronization with the databases, follow the procedure for synchronization.

Note: Synchronization should be performed only by advanced users. If you are not an advanced user, contact Customer Support before performing the synchronization.

For Business Process profiles, you can either synchronize at the profile level, the container level, or synchronize all the profiles at once for the whole enterprise. Only containers containing profile settings can be synchronized.

To synchronize profile settings with the profile database:

- 1** Access End User Management Administration by selecting **End User Management** in the Admin menu. Select from the following options:
 - ▶ Right-click the enterprise node, the container, or the selected profile that you want to synchronize. The container action menu is displayed. Select **Synchronize**.
 - ▶ Alternatively, highlight the enterprise node, the container, or the selected profile that you want to synchronize and select the **Synchronize** button in the Contents tab.



If the object highlighted is a Business Process profile that has descendant objects, but no direct child objects, that are not synchronized, the synchronization progress bar indicates that synchronization has begun.

If the object highlighted is a Business Process profile and has direct child objects that are not synchronized with the database, the Synchronize page opens.

- 2** In the Main Settings area of the Synchronize page, all the profiles and monitors that are not synchronized with your monitor tree are listed by type. You can select from the following options:
 - ▶ select individual profiles and/or monitors to synchronize
 - ▶ select **Import all** under any object type to synchronize all the profiles or monitors listed for that type
 - ▶ select **Synchronize Enterprise children** to synchronize all the objects in the monitor tree with the profile database
- 3** Click **OK**.

2

Setting Views

Setting views in End User Management Administration enables you to create views that customize the monitoring information displayed in the monitor tree. These views allow you to select the objects that appear in the monitor tree based on the database information stored for all monitor tree objects.

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About Setting Views

When administrating monitor deployment, an extensive monitor tree displaying every object added to it could prove difficult to manage. End User Management Administration enables you to select which objects in the tree you want to view, based on various filter criteria. You can define multiple views with different filter conditions that can be applied for varying configuration tasks.

For example, you can create a view to display only Real User Monitor engines that are monitoring specific applications. The result of this filter displays a tree with all the applicable Real User Monitor engines directly under the enterprise node.

For details on views, see the next section.

Defining and Managing View Settings

You define and manage view settings by accessing the Views tab at the top of End User Management Administration.

You can define views:

- ▶ **based on object type only.** For example, you can define a view that includes all Business Process profiles, regardless of their properties. In this view, the monitor tree lists all the Business Process profiles defined in the enterprise.
- ▶ **based on object type and the properties configured for the selected object types.** For example, you can define a view that includes all Real User Monitor engines monitoring the same application, giving you a view of only those monitors monitoring the selected application.
- ▶ **to appear in a flat list.** A flat list lists all objects meeting the view's selection criteria as child objects to the enterprise node, regardless of its parent object.
- ▶ **to appear as a hierarchy.** The hierarchy option lists all objects with their respective parent objects even if the parent object does not meet the view's selection criteria.
- ▶ **to include all child objects of a selected object.** This is done by making your selections recursively.
- ▶ **to represent object properties.** This is done by using regular expressions to represent object properties if basing your selections on an object's properties.

If you have any views defined, they appear in the drop-down list above the monitor tree in the Monitors tab. You select the view from the list and the monitor tree displays only those objects defined in your view selection.

To add a new view filter:

- 1** Access End User Management Administration by selecting **End User Management** in the Admin menu.
- 2** Click the **Views** tab at the top of the screen. The Views page opens listing all the views that have been defined for the monitor tree.
- 3** Click **New View**.
- 4** In the Main Settings area, enter a view filter name in the **Name** field. This name appears in the list of available views above the monitor tree.
- 5** Select whether you want your view to appear as a flat list or in a hierarchy.
- 6** In the Filter by Types area:
 - ▶ Select the **Show shared properties** option to display in the Filter by Property Values area only those properties that are shared by all the object types selected in this Filter by Types list.
 - ▶ Select the **Show all properties** option to display in the Filter by Property Values area all properties associated with all the object types selected in this Filter by Types list.
- 7** Select one or more object types by which you want to filter your view. The Filter by Types list presents every object type within its respective hierarchy as they are represented in the monitor tree, including those that may not have been defined or added to your tree.
- 8** Optionally, select **Recursive Selection** to automatically select all child objects of a selected object.

Note: If you have selected **Recursive Selection** and want to remove a selected object from the selection, you must clear the selection of the object which you do not want to appear in the view and clear **Recursive Selection**. If you do not clear **Recursive Selection**, all objects within that parent object appear in the view even if you have cleared that object from the selection.

For example, to configure a view displaying all Business Process profiles except for a specific transaction monitor, select **Recursive Selection**, select the Business Process profile object type, clear the selection for the specific transaction monitor, and then clear **Recursive Selection**.

- 9** Click **Apply Selection**. A scroll bar opens on the right-hand side of the page. Use the scroll bar to scroll down to view the Advanced Settings and Filter by Property Values area.
- 10** Optionally, expand the Advanced Settings area and enter a description for this view. This description is available only in the Views page and when editing the view.
- 11** Optionally, expand the Filter by Property Values area to further refine your view by selecting properties for the object type(s) selected in the Filter by Types area.
 - ▶ If you selected the **Show shared properties** option in the Filter by Types area (step 6), only those properties that are common to all of the selected object types are listed in the Filter by Properties area. Each set of properties is displayed in an expandable table.
 - ▶ If you selected the **Show all properties** option in the Filter by Types area (step 6), all of the properties that are associated with all of the selected object types are listed in the Filter by Properties area. Each set of properties is displayed in an expandable table.
- 12** Select the check box to the left of the property by which you want to filter your view and enter or select a value for the property. You can select multiple properties.

For example, if you want to filter the view using a threshold setting, expand the **Threshold Settings** area. All the thresholds applicable to the selected objects are listed. Select the required thresholds and enter the values you want for the view.

Note: There are properties that cannot be used for filtering a view. These are listed in the Filter by Properties area but with a message indicating that they are unavailable.

- 13** Click **OK** to save the view setting. The name of the view filter is added to the view list on the Views page and to the available views at the top of the monitor tree.

To select a view by which to filter the monitor tree:

- 1** Access End User Management Administration by selecting **End User Management** in the Admin menu.
- 2** Click the **Monitors** tab at the top of the screen. The Monitors page opens.
- 3** From the View list, select the view you want to use to filter the monitor tree.

Note: If a view is selected and you are adding a new object to the tree, the new object appears only if the object's type is included in the view filter selection. Even if the object type is listed as a parent object because one of its child objects is selected, a new object of the same type does not appear in the tree if its object type is not in the selection.

To edit a view setting:

- 1** Access End User Management Administration by selecting **End User Management** in the Admin menu.
- 2** Click the **Views** tab at the top of the screen. The Views page opens listing all the views that have been defined for the monitor tree.

- 3 Select the check box next to the name of the view filter you want to edit from the views list.

To make your selections, you can also use the buttons at the bottom of the area for **Select All**, **Clear All**, and **Invert Selection**.

- 4 Click the **Edit** button.
- 5 Edit as required the Main Settings to edit the name of the view, Filter by Types area to change the object types selected for the view, and Filter by Properties area to edit the properties of the objects selected in the view. For details on how to edit these fields, see “To add a new view filter:” on page 35.
- 6 Click **OK** to save the changes to the view.

To delete a view setting:

- 1 Access End User Management Administration by selecting **End User Management** in the Admin menu.
- 2 Click the **Views** tab at the top of the screen. The Views page opens listing all the views that have been defined for the monitor tree.
- 3 Select the check box next to the name of the view filter you want to delete from the views list.

To make your selections, you can also use the buttons at the bottom of the area for **Select All**, **Clear All**, and **Invert Selection**.

- 4 Click the **Delete** button. The view is removed from the list of views on the Views page and in the list of views to select above the monitor tree.

3

Using Global Replace

Global Replace enables you to change and update configurations across the entire monitoring infrastructure. In one action, you can update any combination of settings and properties in the monitor tree.

This chapter describes:	On page:
About Global Replace	39
Working with Global Replace	40
Performing a Global Replace Operation	45

About Global Replace

Global Replace is a search and replace function for changing monitor, alert, group, and other configuration settings and properties. You determine the scope of the search and replace operation by selections made in the following control features:

- Monitor tree and current view
- **Select by Type** object list
- **Selected Objects** tree menu

The current node selected in the monitor tree and any view filter determine the types of objects available for selection by the other two controls. The **Select by Type** controls the objects available to the **Selected Objects** controls. Both these are features displayed in the content area when the **Global Replace** tab is selected.

You can refine your selection by applying a view to the monitor tree before performing the Global Replace. The objects appearing in the current view are then the only objects from which you can select while working with Global Replace. For details about creating and applying views, see “Setting Views” on page 33.

Global Replace is also useful for enabling or disabling groups of monitors or alerts associated with multiple monitors.

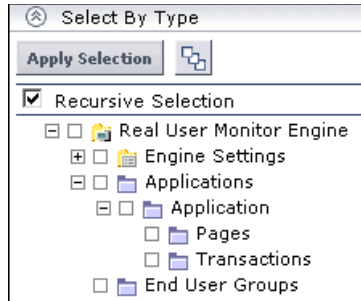
Working with Global Replace

The Global Replace contents area displays two sections by default, with a third section displayed when one or more classes of objects are selected. These sections are:

- ▶ **Select by Type.** An expandable menu tree you use to select the class or type of objects that will be targets for the replace operation. This menu tree mirrors the current view setting and selection in the monitor tree.
- ▶ **Selected Objects.** An expandable menu tree you use to select the specific objects for the Global Replace. This menu tree mirrors the current view setting and selection in the monitor tree.
- ▶ **Configuration Settings.** The configuration settings for objects selected in the **Selected Objects** tree. The default category is the **Main Settings**. Other settings are included in the area below Main Settings. The available settings in each section depend on the current **Property Selection** and **Replace Mode** options.

Working with the Select by Type Panel

The Select by Type panel includes an expandable Select by Type object menu tree that presents a hierarchy of object types. You expand the object menu tree to access specific object types such as groups and monitors. You expand the menu tree by clicking the plus icon to the left of an object name. The following figure shows an example of the Select by Type object menu tree for the Real User Monitor node expanded to the first level of object types.



The **Recursive Selection** option enables the automatic selection of all child nodes when a parent node is selected in the Select by Type tree menu. You use this to include all objects within an object type hierarchy. For example, to perform a global replace operation on all Real User Monitors, the Recursive Selection option recursively selects all Real User Monitors when you check the box to the left of the **Real User Monitor** object type in the menu tree.

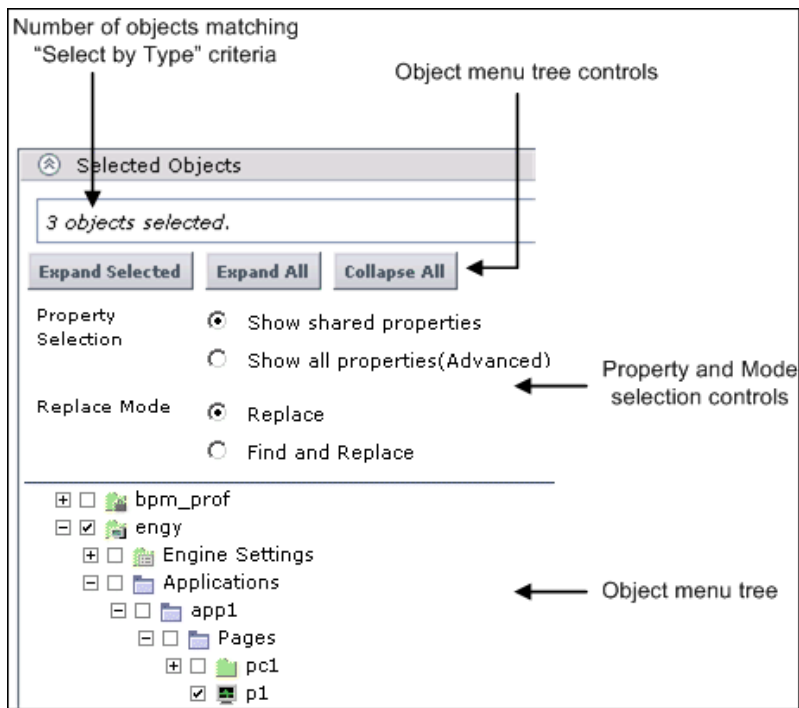
The first step in performing a global replace operation is to select the type of objects that you want as targets. For example, if you want to change the setting for reporting data for defined applications only for all Real User Monitors, the target object type for the replace operation would be **Real User Monitor Engine**.

You select more specific target objects by expanding the applicable node in the menu tree. For example, to replace snapshot collection settings for applications, expand the **Real User Monitor** object node and check the box next to **Application**.

Once you have selected the object types you want as targets for the replace operation, you click the **Apply Selection** button to locate all objects of that type that are currently configured. The objects are then available for review in the Selected Objects panel.

Working with the Selected Objects Panel

The Selected Objects panel displays information and controls that you use to verify the targets of the replace operation and refine the selection of target objects and properties. The following figure describes an example of the Selected Objects area.



The text area at the top of the panel displays the number of objects in the current context that match the criteria. The object menu tree displays the specific objects and names as they are configured in End User Management Administration.

Note: The Selected Objects panel is only populated after you make selections in the Select by Type area and apply the selection. If a message “0 objects selected” is shown, you should review your selections in the Select by Type section and click the **Apply Selection** button.

The following describes the controls and options in the Selected Object panel.

Object Tree Controls

The Selected Object panel includes three buttons you use to control the object selection tree. The following describes these controls.

- ▶ **Expand Selected.** Expands the tree to show currently selected objects. The object nodes will be those that match the criteria of the Select by Type and those objects that have not be deselected previously. This option is useful if there are a large number of objects in the tree but you have deselected several of them. Using the **Collapse All** button followed by the **Expand Selected** button will re-display the tree with only the updated selection of objects displayed.
- ▶ **Expand All.** Expands the tree to show all object types matching the criteria selected in the Select by Type panel.
- ▶ **Collapse All.** Collapses the Selected Objects tree.

Property Selection

The Property Selection options provide a basic selection of which object properties will be available for a replace operation. This is applicable when more than one type of object is selected for the replace operation. The options are:

- ▶ **Show shared properties.** Include only those properties which are shared or common to all of the selected object types.
- ▶ **Show all properties.** Include all properties for the selected object types.

Replace Mode

In Replace Mode, select **Replace** to search the target objects and replace the selected properties with the values entered in the configuration settings fields. Existing configuration properties are completely replaced with the values entered in the Global Replace tab.

Note: The **Find and Replace** option has been deprecated and is no longer applicable.

Selected Object Menu Tree

You use the Selected Object menu tree to further refine and control which objects will be included as targets for the replace operation. By default, all objects that match the applied **Select by Type** criteria are selected in the Selected Objects tree.

In some cases, you may want to exclude some of the selected objects from the replace operation. To exclude an object in the **Selected Objects** tree from the replace operation, clear the box next to the object. To include an object that was previously excluded in the **Selected Objects** tree, you select the check box to the left of the object name. You may need to click the Expand All button to display deselected objects.

Working with Configuration Settings in Global Replace

You can use Global Replace to select any combination of objects in the hierarchy of containers and objects available in the monitor tree. Configuration settings can be changed for virtually every object type in the monitor tree. These include containers, profiles, monitors, groups, containers, and alerts.

Note: Global Replace works best if you select objects that share the configuration setting you want to replace or modify.

Each object type in the monitor tree has properties or attributes assigned to that object type. When you select objects in the **Selected Objects** tree, Global Replace automatically compares the objects for settings and properties that are common among all of the selected objects. The common configuration settings are then listed. Depending on the degree of commonality, the common settings are organized into subsections with **Main Settings** listed first.

Performing a Global Replace Operation

Performing a global replace operation requires several steps. The following is an overview of the steps you use to change configuration settings using Global Replace:

- 1** Decide what settings you want to change and to which class or type of objects these settings apply.
- 2** Select the node in the monitor tree that encompasses the scope you want to include in the replace operation. You may also create a view to filter object types in the monitor tree.
- 3** In the Global Replace tab, select the applicable object type or types in the Select by Type panel and apply the selection.
- 4** Review the **Selected Objects** and select the appropriate **Property Selection** and **Replacement Mode** options.
- 5** Check the configuration settings to be replaced, enter the applicable values for the settings, and apply the changes.

Changing Configuration Settings for Multiple Objects

Use the following steps to change configuration settings for multiple objects with Global Replace using the Replace mode.

To replace configuration settings for multiple objects:

- 1** Highlight the monitor tree element that includes the objects you want to include in the global replace operation.
- 2** Select the **Global Replace** tab. The Global Replace screen is displayed.

- 3** Select the type or types of objects you want to modify from the **Select by Type** menu.
- 4** Click **Apply Selection** to register the selection. The **Selected Objects** tree is populated with all matching objects.
- 5** Expand the **Selected Objects** tree and review the objects targeted for the replace operation. Clear objects you want to exclude from the replace operation, if necessary.
- 6** Choose the applicable **Property Selection** mode and verify that the **Replace** mode is selected. The configuration settings entry fields are updated below the **Selected Objects** tree.
- 7** Select the check box to the left of the configuration setting or settings that you want to change. Enter the new configuration settings in the text box for the selected setting.

For example, to change the monitoring condition for selected pages configured for Real User Monitor, you expand the **Main Settings** section (if necessary), check the box to the left of the **Monitoring conditions** setting field and select the required monitoring condition from the dropdown list.

- 8** Click **Apply** to start the global replace operation. A Global Replace screen is displayed with information about the success of the replace operation or any errors that were encountered. The monitor tree is updated after a short delay.

4

Introduction to End User Management Reports

HP End User Management reports enable you to proactively monitor network and application performance and availability in real time, from the end-user perspective, so you can resolve issues before customers experience problems.

This chapter describes:	On page:
Overview of End User Management Reports	47
End User Management Reports	49

Overview of End User Management Reports

You use the End User Management application to view and analyze reports based on performance data collected by HP Business Availability Center data collectors and stored in the HP Business Availability Center database.

End User Management reports enable you to:

- ▶ detect end-user business process issues before customers are impacted
- ▶ track alerts for user performance and availability issues
- ▶ proactively identify end-user performance and availability trends that need IT attention
- ▶ assess business impact and prioritize resolution efforts, escalating user problems to the correct IT groups

- ▶ prioritize IT response based on customer/business impact
- ▶ manage the customer's Quality of Experience (QoE), and gain real-time visibility into the QoE of real users

You access End User Management reports from the End User Management application in the Applications menu.

For details on working with HP Business Availability Center reports, see “Working in Reports” in *Reference Information*.

For details on configuring reports in HP Business Availability Center, see “End User Management Report Configuration” on page 145.

Report Access and Permissions

The availability of report data for a specific user is dependent on the profile access permissions granted that user. Furthermore, access to specific data within a profile can also be limited by the administrator using report filters. For details on granting permissions, see “Permissions Management” in *Platform Administration*.

For details on setting report filters, see “Report Filters” on page 147 and “Filtering Individual Reports” on page 148.

Data Aggregation

HP Business Availability Center uses data aggregation to make data handling and management more efficient and to improve the speed and performance of report generation. For more information on data aggregation in HP Business Availability Center, see “Data Aggregation” in *Reference Information*.

End User Management Reports

The following reports are available:

Reports	Description	For Details, See...
End User Management Snapshot Status	Displays a summary of the five worst transactions and locations for Business Process Monitor for the last day. For Real User Monitor, End User Management displays the five worst sessions (that is, the least available) and the slowest applications.	“Status Snapshot” on page 51
Summary reports	Displays reports that provide an overall snapshot of the health of your monitored environment. Report data is based on Business Process Monitor data.	“Summary Reports” on page 207
Business Process reports	Displays reports that provide an in-depth look at the health of your monitored environment and help you diagnose and pinpoint the root cause of performance problems. Report data is based on Business Process Monitor data.	“Business Process Reports” on page 155
Real User Monitor reports	Displays reports that help you monitor the experience of real users who access your application. Report data is based on Real User Monitor data.	“Real User Monitor Reports” on page 285

Reports	Description	For Details, See...
Network and Tool reports	<p>Displays reports that help you identify problems along the network.</p> <p>Report data is based on WebTrace/Traceroute monitor data.</p>	“Network Reports and Tools” on page 229
User Reports	<p>Enables creating and viewing reports that are tailored to the specific monitoring requirements of your organization or business unit, and displaying those reports.</p> <p>Report data is based on Business Process Monitor, WebTrace/Traceroute Monitor, Real User Monitor, SiteScope, and custom data.</p> <p>Enables searching for and viewing reports in the report repository.</p>	“User Reports” on page 55

5

Status Snapshot

This chapter describes the End User Management Status Snapshot.

This chapter describes:	On page:
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Working With Status Snapshot	53

Overview of Status Snapshot

Status Snapshot displays a summary of the following data:

- ▶ for Business Process Monitor, the five worst transactions and locations (that is, the least available) across all profiles, for the last day
- ▶ for Real User Monitor, the five least available applications (that is, the applications with the highest number of sessions ending in error) and the five slowest applications, for the last day

From the data in the graphs, you can drill down to the Transaction Analysis, Location Analysis, and Session Analyzer reports.

This section includes the following topics:

- ▶ “How End User Management Calculates Status Snapshot” on page 52
- ▶ “Editing Settings With the Infrastructure Settings Manager” on page 52

How End User Management Calculates Status Snapshot

For Business Process Monitor, End User Management calculates the Status Snapshot by data aggregation, once an hour (by default). For Real User Monitor, End User Management calculates the Status Snapshot on raw data.

The calculated data resides in the cache and remains there until an hour has passed and a user has accessed Status Snapshot. When these two criteria are fulfilled, End User Management empties the cache and calculates the data again. If a user attempts to access the Status Snapshot when the cache is empty, a message is displayed until new data is processed.

You can verify the date and time that data was last calculated by looking at the Status Snapshot title:



Editing Settings With the Infrastructure Settings Manager

Caution: Many of the settings in the Infrastructure Settings Manager should not be modified without first consulting Customer Support, HP Managed Software Solutions Support, or your HP Professional Services representative. Modifying certain settings can adversely affect the performance of HP Business Availability Center.

Administrators with an advanced knowledge of HP Business Availability Center can customize the End User Management setting that defines the time (in seconds) to hold cached calculated data for the Status Snapshot. For details, see “Defining the Time to Hold Cached Calculated Data for the Status Snapshot Report” on page 151.

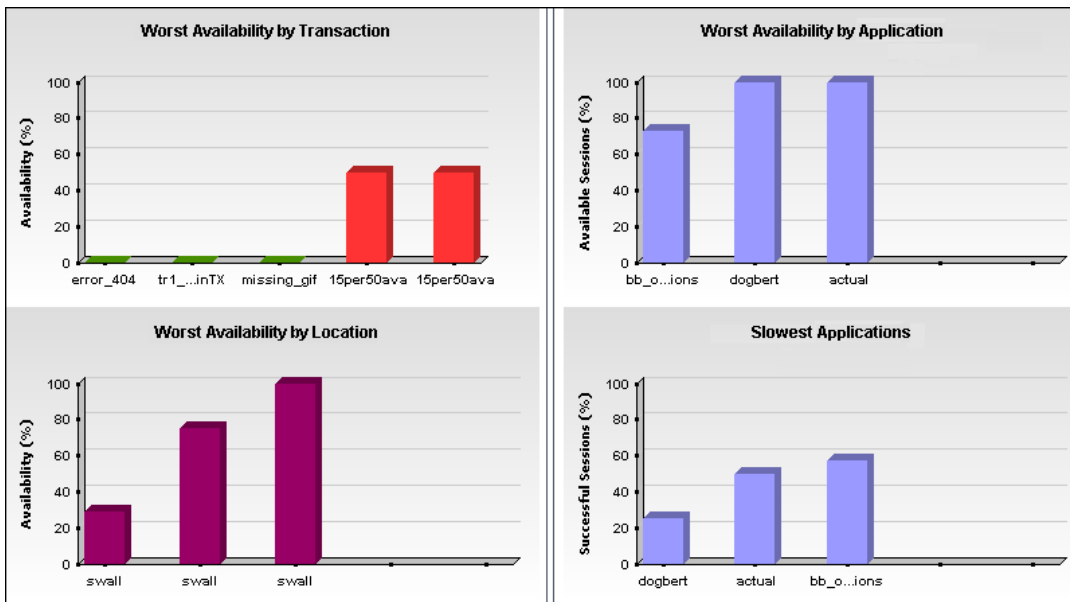
Note for HP Managed Software Solutions customers: To access the **End User/System Availability Management – Timing** table, select the Customer Settings tab.

Working With Status Snapshot

Status Snapshot shows data organized in graphs for Business Process Monitor and Real User Monitor.

To work with Status Snapshot:

- 1 Select **Applications > End User Management > Status Snapshot**.



- 2** Hold the pointer over a bar in a graph to view a tooltip showing:
 - ▶ **For Business Process Monitor.** Average response time and average availability for each transaction or location
 - ▶ **For Real User Monitor.** Availability and performance for each application and for the slowest applications.
- 3** Click a bar to drill down to the analysis report.
 - ▶ For details on the Transaction Analysis report, see “Transaction Analysis Report” on page 166.
 - ▶ For details on the Location Analysis report, see “Location Analysis Reports” on page 175.
 - ▶ For details on the Session Analyzer report, see “Session Analyzer Report” on page 486.
- 4** Transactions and sessions are color coded according to the transaction performance thresholds. For details, see “Transaction Threshold Settings” on page 106.

6

User Reports

User reports is a feature common to the HP Business Availability Center applications. You configure and view user reports from the User Reports tab.

For complete details on creating, viewing, and administering user reports, see “User Reports” in *Custom Reporting and Alerting*.

Part II

Business Process Monitor

7

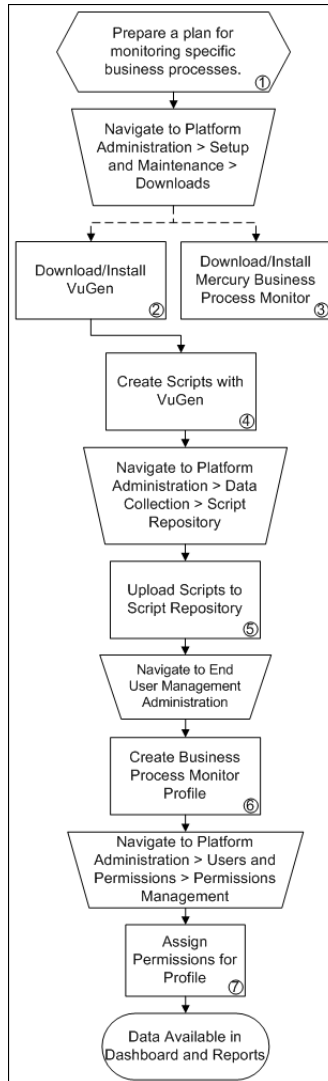
Business Process Monitor Administration Tasks

This chapter describes step-by-step process flows for working with Business Process Monitors in HP Business Availability Center.

This chapter describes:	On page:
Collect Data on the Performance of a Specific Business Process	60

Collect Data on the Performance of a Specific Business Process

The flowchart below describes the process required to set up and use Business Process Monitor to collect data on the performance of specific business processes. The numbered elements are referenced in the table on the following page, which provides additional details about the steps and a reference to more information.



Ref. No.	Comment
1	<p>Prepare a plan that maps out the specific applications and business processes for which you want to collect data. Consider the locations from where you want to emulate end users accessing the application. Include information about the monitored IT infrastructure components associated with the applications (for example, servers being monitored by SiteScope that are running a Web-based application against which you plan to run Business Process Monitor scripts).</p>
2	<p>Download HP Virtual User Generator (VuGen), the primary recording tool for use with Business Process Monitor, and install on machines of administrators responsible for script recording. For more information, see the HP Virtual User Generator documentation.</p> <p>In certain circumstances you may need to record scripts with another HP recording tool such as QuickTest Professional. For more information, see “Understanding the HP Business Availability Center Platform and Components” in the <i>HP Business Availability Center Deployment Guide</i> PDF.</p>
3	<p>Download and save the Business Process Monitor installation file (for Windows or Solaris) to a local or network drive. Install Business Process Monitor on machines designated to run scripts recorded with HP script recording tools such as HP Virtual User Generator. You can run multiple Business Process Monitors from multiple platforms. For more information, see the <i>Business Process Monitor Administration</i> PDF.</p>
4	<p>Create scripts that include transactions that reflect the business processes for which you planned to collect data, and save them to a local or network drive. For more information, see <i>Using End User Management</i> and the HP Virtual User Generator documentation.</p>

Ref. No.	Comment
5	<p>In the Central Repository Service, organize your uploaded scripts into folders. Scripts can also be uploaded to the Central Repository Service while creating a profile in End User Management Administration. For more information, see “Central Repository Service” in <i>Platform Administration</i>.</p>
6	<p>Once defined, the profile and its monitors are added as CIs to the CMDB and are automatically attached to the End User Monitors View, from where they can be added to other views (if End User Monitors View is not updated, perform a synchronization in Source Manager). During profile creation, you can associate the profile or its monitors with existing CIs using Configuration Item Attachment Settings (for example you can associate the profile with an existing logical CI representing an application whose business processes are being monitored by Business Process Monitor). For more information, see “Creating Business Process Profiles” on page 63.</p>
7	<p>Profile permissions set in the Monitors context in the Permissions Manager do not affect the permissions to view that profile in views defined in IT Universe Manager. Permissions for views must be set separately. For more information, see “Permissions Management” in <i>Platform Administration</i>.</p>

8

Creating Business Process Profiles

The Business Process Monitor collects data by running Business Process profiles. You create Business Process profiles in End User Management Administration using a wizard to create the profile, add monitors, and configure settings. For details on managing Business Process profiles in End User Management Administration, see “Managing Business Process Profiles” on page 91.

This chapter describes:	On page:
About Creating Business Process Profiles and Monitors	64
Planning Profiles	64
Using the Business Process Profile Wizard	66
Launching the Business Process Profile Wizard	67
Defining Profile Properties	69
Adding Transaction Monitors	76
Setting Transaction Thresholds	76
Adding WebTrace Monitors	79
Selecting Data Collectors	80
Assign Data Collectors and Configure Settings	81
Configuring Data Collector Settings	83
Confirming Profile Configurations	90

About Creating Business Process Profiles and Monitors

The Business Process Monitor collects availability and performance data from various points throughout the infrastructure, as well as from external locations, as defined in the Business Process profiles created using End User Management Administration. The profiles run transactions which perform the business processes you want to monitor and WebTrace monitors to collect server/network performance data.

Before creating profiles for the Business Process Monitor to run, it is important to establish a monitoring strategy for the organization. This includes following some basic profile planning guidelines as well as setting up your data collectors and platform. For details, see “Planning Profiles” on page 64.

Once you have planned out your profiles, you begin the process of creating the profiles and their monitors in End User Management Administration. You create profiles and monitors, and configure their settings using the Business Process Profile Wizard. For details, see “Using the Business Process Profile Wizard” on page 66.

Planning Profiles

You should consider how to most effectively manage application performance before creating and running profiles. The information described below can assist you with effective profile planning.

Establish a Baseline

Measuring your baseline is essential for knowing the normal performance of your application. For example, your company may have a service level agreement to deliver transactions in eight seconds or less, 99% of the time. Having a baseline helps you know how your site typically performs and determine whether a performance problem is an isolated incident or a sign of a significant downward performance trend. One way to collect baseline data is to create an initial set of profiles that obtain data continuously over a predefined time period.

Monitor Essential Transactions

The Business Process Monitor emulates real user actions using specific URLs or pre-recorded transactions that perform typical business processes in your application. Consider the following when determining the type of transactions to use:

- ▶ Establish the main applications or lines of business whose performance you want to monitor.
- ▶ Determine the business functions whose failure could cause harm to your company, for example, transactions that have significant impact on the business (such as purchases), heavy throughput transactions (such as home page download), or transactions integrated with legacy systems, since these integrations increase the risk for application failures.
- ▶ Identify transactions that hit the different components within your application infrastructure (servers and physical devices), for example, transactions high in database I/O (such as search requests), since those tend to stress the system.
- ▶ Monitor transactions that affect typical end-user experience, for example, links that users commonly follow or transactions associated with new promotions.
- ▶ Select transactions that enable you to verify and reinforce service level agreements, for example, mission-critical transactions that typically exhibit heavy throughput, high impact on the system and high database I/O, or transactions describing increased user actions (such as clicking on many links or visiting many parts of your site).
- ▶ Record transactions that interact with specific parts of your network infrastructure. For example, define a transaction that exercises just the Web server, another that interacts with the Web server and application server, and a third that interacts with the Web server, application server, and database server.

Monitor from Different Locations

To obtain an accurate assessment of end-user experience, you should monitor from a variety of locations. If possible, select locations where customers are located. Monitoring from a variety of locations also enables you to better track and compare network performance from different Internet backbone locations and service providers.

Before You Begin

Before you begin profile creation, make sure you:

- ▶ start the Business Process Monitor on the host machines designated to run Business Process profiles – for details, see the *Business Process Monitor Administration* PDF.
- ▶ record scripts which are added to create transaction monitors for Business Process profiles – for details, see the HP Virtual User Generator documentation and “QuickTest Professional Recording Tips” on page 129.
- ▶ add the recorded scripts to the Central Repository Service either while saving in your scripting tool or using Platform Administration – for details, see “Central Repository Service” in *Platform Administration*.
- ▶ configure required administration settings, including database connections and permissions – for details, see “Database Administration” and “Permissions Management” in *Platform Administration*.

Using the Business Process Profile Wizard

End User Management Administration presents monitor objects in the monitor tree in hierarchy form and uses containers to organize configuration data for profiles and monitors. A Business Process profile can be added directly to the enterprise node or into a container. For details, see “Understanding Monitor Tree Objects” on page 23 and “Managing Containers in the Monitor Tree” on page 28.

Business Process profiles and transactions monitors can be added to the monitor tree only by running the Business Profile Wizard. Once these monitor objects are added to the monitor tree, you can edit their properties using the right-click menu in the menu tree or the Contents tab. For details, see “Navigating and Performing Actions in the Contents Tab and the Monitor Tree” on page 25.

You use the Business Process Profile Wizard to:

- ▶ create Business Process profiles
- ▶ add transaction monitors to profiles

You can perform the following actions either during profile creation using the wizard or after profile creation by editing properties in End User Management Administration:

- ▶ set transaction thresholds
- ▶ add WebTrace monitors to profiles
- ▶ select data collectors to run the monitors
- ▶ configure data collector settings (group name, schedule, advanced settings)

Once a profile is created or transactions are added to a profile, you can modify them using the monitor tree, Contents tab and Properties tab in End User Management Administration. For details, see “Managing Business Process Profiles” on page 91.

Launching the Business Process Profile Wizard

You launch the Business Process Profile Wizard when you create Business Process profiles and add transaction monitors to profiles. You can perform these actions only by using the Business Process Profile Wizard.

Launching the Wizard to Create Business Process Profiles

You can create an empty profile and at a later stage add transaction or WebTrace monitors to it.

To begin creating Business Process profiles:

Access End User Management Administration by selecting **End User Management** in the Admin menu. Select from the following options:

- ▶ In the monitor tree, right-click the enterprise node or container into which you want to add a new Business Process profile and choose **New Business Process Profile** in the container's menu.
- ▶ In the Contents tab, highlight the container into which you want to add the profile and click the **New Business Process Profile** button at the top of the page.

The Business Process Profile Wizard opens to the Define Profile Properties page.

Launching the Wizard to Add Monitors to Profiles

When you add transaction monitors to an existing profile, you do so using the Business Profile Wizard.

To add transaction or WebTrace monitors to an existing profile:

Access End User Management Administration by selecting **End User Management** in the Admin menu. Select from the following options:

- ▶ In the monitor tree, right-click the Business Process profile to which you want to add a new transaction monitor and choose **New Transaction Monitor** in the profile's menu.
- ▶ In the Contents tab highlight the appropriate profile in the monitor tree, and click **New Transaction Monitor**.

The Add Transaction Monitor page of the wizard opens.

Defining Profile Properties

The first page that opens in the Business Process Profile Wizard is the Define Profile Properties page. To create a profile and to continue in the wizard, you must enter the mandatory information required in this page. Mandatory fields are marked with a red asterisk.

To create a Business Process profile:

- 1** Enter the following fields:
 - **Profile name.** Enter a descriptive name that will assist in identifying the profile in the monitor tree, in the Dashboard, and in reports.
 - **Profile description.** The profile description appears in reports as the tooltip for the profile name. For details on entering meaningful descriptions, see “Adding Descriptions for Reports” on page 109.
- 2** Select a **Profile database** for storing this profile’s information. The list includes all the profile databases defined for this Business Availability Center installation.

If you want to create a new profile database, click the **Database Management** link which will take you to the page in Platform Administration where you can create a new profile database.

For details on creating a profile database, see “Database Administration” in *Platform Administration*.

Note to HP Managed Software Solutions customers: In this step, you must select a **Package Name**, rather than a profile database. If no package exists, a message appears at the top of the page with a link to the Customer Policy dialog box where you can create a package. If a package exists and you want to modify it or create a new one, you can use the **Customer Policy** link below the package field to open the Customer Policy dialog box. For details, see “Package Information” in *Platform Administration*.

- 3** Select a **GMT offset**—the time zone, in relation to GMT, that Business Availability Center uses when aggregating data collected by this profile.

For example, if you want Business Availability Center to aggregate data collected by the profile based on Pacific Time, enter -8, since Pacific Time is GMT-8 hours. For a reference list of GMT time zones for locations throughout the world, see “GMT Time Zones” in *Reference Information*.

- 4** Optionally, click the **Downtime/Event Scheduling** link to access the Downtime/Event Schedule page in Platform Administration. You can define downtime or event schedules for when Business Availability Center is automatically instructed not to run the profiles.

You do this to exclude periods of time in which downtime or other events may skew the results of collecting data for reports and Dashboard status. You can assign multiple profiles to one downtime/event schedule. For details, see “Defining Downtime and Other Influencing Events” in *Platform Administration*.

- 5** Optionally, click **Add CIs** to attach a CI to this profile. You can create these relationships between profiles and any existing, logical CI in the CMDB. This relationship enables the monitor or profile to pass KPI status to the CI to which it is attached.

For details, see “Configuration Items and End User Management Monitor Objects” on page 26.

- 6** Click **Next** to continue.

At this stage, you can also click **Finish** to create an empty profile.

The next stage of the wizard is to add transaction monitors to the profile you just created. Continue to “Adding Transaction Monitors” on page 71.

Adding Transaction Monitors

Once you have added a profile, the next stage in creating the profile's content is to select, and configure properties for, the transaction monitors that you want your data collectors to run. The transaction monitors are the scripts that contain the transactions.

You record scripts using one of the Business Availability Center recording tools. For details on recording scripts for Business Process profiles, see the HP Virtual User Generator documentation. Before adding scripts to transaction monitors, you must upload the script to the Central Repository Service. For details, see “Central Repository Service” in *Platform Administration*.

When you add a transaction monitor to an existing profile by highlighting a profile in the monitor tree and clicking the **New Transaction Monitor** button, you open the Add Transaction Monitor page of the wizard and add the monitor using the wizard and the procedure below.

Note: If a transaction in an HP Virtual User Generator script is renamed, Business Availability Center considers it as a new transaction. A new BPM Transaction from Location CI is created in the CMDB using the new name, and the CI with the old transaction name is removed after it stops receiving samples. If the CI is included in a Service Level Management agreement, you will not see historical data for it (from before the transaction name change).

The process for selecting a script differs for HP Managed Software Solutions customers. For details, see the procedure on page 74.

To add a transaction monitor to a profile:

- 1 Expand the top-level folder of the Central Repository Service, appearing in the center-left pane. This top level is called **Root** by default.




- 2 Expand each sub-folder until the script that you want to add to the transaction monitor is displayed. In the example, the script named CVuser contained in the **BPM** sub-folder has been selected.
- 3 When a script is selected, its details are displayed below the Central Repository Service tree in the pane. You can see the script's name, description, creation date (date the script was first checked into the Central Repository Service), modification date (date the script was last checked into the Central Repository Service), and latest version number.

Script Details:	
Name:	tx_5
Description:	
Creation Date:	2/7/06 12:00 AM
Modification Date:	2/7/06 1:55 PM
Version:	1.1.1

Note: You can also use the **Central Repository Service** link to access the Central Repository Service where you can create folders, add scripts, control script versions, and view script and version properties. For details, see “Central Repository Service” in *Platform Administration*.

- 4 Move the selected script to the right pane using the right-facing arrow. You can select multiple scripts using the CTRL key. The right pane lists all scripts selected for this monitor in the order that the profile will run the scripts.

Name	Version	Path
<input type="checkbox"/> tx_5_10_15	1.1.1	/FIST CRS Folder
<input type="checkbox"/> tx_5	1.1.1	/FIST CRS Folder



- 5 In the right pane, specify the version number of the script that you want your profile to run. The latest version that was most recently checked into the Central Repository Service is the version selected by default.

- 6 Optionally, set the order that the profile runs the scripts using the arrow buttons.



- a Select the check box next to the script whose position you want to change.
- b Click one of the arrows to either move the script lower or higher in the list of scripts.

- 7 Optionally, set the transaction breakdown settings.

- a Select the check box next to the script whose breakdown settings you want to modify.
- b Click the **Edit Breakdown Settings** button. The Edit Breakdown Settings dialog box opens.
- c Select **Enable breakdowns** to generate transaction breakdown data when running the selected monitor.
 - If you have enabled breakdowns, select **Report additional error information** to include date, time, location, and error messages for failed transactions.
 - If you have enabled breakdowns, select **Perform component breakdown** to save complete page component breakdown data for a sampling of transaction instances. By default, Business Availability Center saves page component breakdown data to the database once per every four transaction instances.



- d** Select **Enable Diagnostics breakdown** to view the performance status of transactions that are monitored by Diagnostics. This data is available in Diagnostics reports only if you have a valid HP Diagnostics license. For details, see the *HP Diagnostics Installation and Configuration Guide*.
 - e** Select **Enable Siebel breakdown** to see Siebel Application Response Measurement (SARM) data in Business Availability Center.

For more details on these options, see “Enable/Disable Transaction Breakdown for the Transaction Monitor” on page 104.
 - f** Click **OK** to save your breakdown settings and return to the wizard.
- 8** Optionally, add a description or attach CIs to the transaction monitors.
- a** Select the check box next to the script to which you want to add a description or attach an existing CI.



- b** Click the **Properties** button. The Script Properties dialog box opens.
 - ▶ To add a description for the transaction monitor, enter text in the **Description** field.
 - ▶ To attach an existing CI, click **Add CIs** to open the Select Related CIs dialog box. For details, see “Configuration Items and End User Management Monitor Objects” on page 26.
 - c** Click **OK** to save your changes and close the Script Properties dialog box.
- 9** Click **Next** to continue.

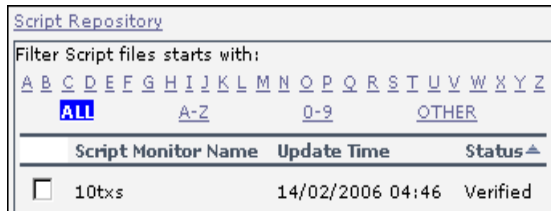
The next stage of the wizard is to set transaction thresholds for the transactions in the scripts just added to the profile you created. Continue to “Setting Transaction Thresholds” on page 76, in the next section.

To add a transaction monitor to a profile for HP Managed Software Solutions customers:

- 1** Select a script in the center-left pane listing the existing scripts in the HP Managed Software Solutions Script Repository. The list of scripts includes the script name, the last update time, and the verification status of the script.

Note: If there are no scripts in the HP Managed Software Solutions Script Repository, a message appears with a link to access the repository.

- 2 Optionally, click the **Script Repository** link to access the HP Managed Software Solutions Script Repository to view details of available scripts or verify unverified scripts. Only those scripts that have passed verification status can be added to a transaction monitor. For details, see “HP Managed Software Solutions Script Repository” in *Platform Administration*.
- 3 To filter your selection, click one of the links above the list to display only those scripts beginning with that letter, number, or symbol (**Other**). To revert to the complete list, click **ALL**.



- 4 Move the selected script to the right pane using the right-facing arrow. You can select multiple scripts using the CTRL key. The right pane lists all scripts selected for this monitor in the order that the profile will run the scripts.
- 5 To continue, follow steps 6 on page 73 through 9 on page 74 in the procedure for adding a transaction monitor to a profile on page 74.

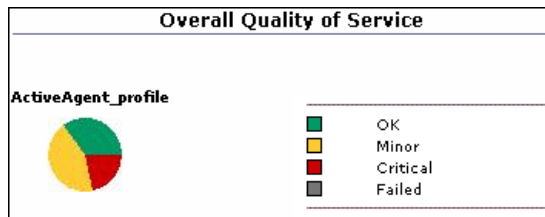
Setting Transaction Thresholds

Transaction thresholds are performance boundaries that organize transaction response time data in a meaningful way, enhancing validation of service level agreements. There are three color-coded transaction threshold ranges: OK, Minor, and Critical. The color codes are used in Dashboard and in the reports that display transaction performance data. The color-coding enables quick pinpointing of problem areas that need further analysis.

Range	Color Code
OK	Green
Minor	Yellow
Critical	Red

A fourth transaction threshold range enables classifying transactions as outliers. Outliers are transactions whose response time exceeds a defined time range. You can specify whether outlier transactions are treated as failed transactions or ignored completely in reports.

In the following example of an Overall Quality of Service chart, 35 percent of all transactions had response times in the OK range (colored green), 42 percent of response times were in the Minor range (colored yellow), and 23 percent were in the Critical range (colored red). When viewing the chart, these percentages are available in a tooltip that is displayed when you place your cursor over each section. The tooltip also specifies the number of outlier transactions.



Business Availability Center automatically sets default transaction threshold values for each transaction in the profile. If required, you can modify the default threshold values. The default transaction thresholds are as follows:

Range	Default Threshold
OK	8 seconds
Poor	12 seconds
Outlier	45 seconds

When setting transaction thresholds, you should take into account factors such as application performance under ideal conditions, competitors' performance, generally accepted performance standards, service level agreements, and end-user feedback.

Further, you should consider the alert trigger criteria you specify in your alert schemes. For example, if you set up an alert scheme to trigger a high priority alert whenever the response time of a transaction is greater than 15 seconds, you may want to set the Poor range for that transaction to 15 seconds or more.

In the Transaction Threshold Settings area, you can:

- ▶ configure how Business Availability Center treats outlier values (only while setting transaction thresholds for all of a profile's transaction monitors—the option is not available at the transaction monitor level)
- ▶ modify default threshold values for specific transactions
- ▶ update threshold values for more multiple transactions (useful when updating values for multiple transactions that have the same values)

To configure Transaction Threshold settings:

- 1** To instruct Business Availability Center to ignore outlier transactions (and not include the data in Dashboard or in reports), select **Ignore outlier data in Dashboard and reports**.

This is a profile-wide setting, so it is available only for all the transactions within the profile.

- 2** Select the check box next to the transactions whose thresholds you want to modify.

To make your selections, you can also use the buttons at the bottom of the area for **Select All**, **Clear All**, and **Invert Selection**.

- 3** Click the **Edit Transaction Threshold** button. The Edit Transaction Thresholds dialog box opens.

- 4** Modify the values as required:

- **OK** – If the transaction response time is less than this value, it's status is OK.
- **Critical** – If the transaction response time is greater than this value, it's status is Critical.
- **Outlier** – If the transaction response time is greater than this value, the run of the transaction is considered outlier. If you selected to ignore outlier values in step 1 on page 78, any transaction that takes longer than this value to complete is ignored in Dashboard and in reports. If you did not select to ignore outlier values and if the transaction response time is greater than this value, it's status is Failed.

If you selected multiple transactions in step 2 on page 78, any changes you make modify the thresholds for all the transactions selected.

- 5** Click **OK** to save your changes and close the Edit Transaction Thresholds dialog box.
- 6** Review the table listing each transaction and its current threshold settings to ensure that they reflect the way the response times should be reported.
- 7** Click **Next** to continue.

The next stage of the wizard is to add WebTrace monitors to the profile. Continue to “Adding WebTrace Monitors” on page 79, in the next section.

Adding WebTrace Monitors

WebTrace monitors record the specific route taken from the data collector to the destination Web server or IP address, including the specific gateway servers at each hop.

The WebTrace reports provide information on network performance, which helps you analyze application performance issues. For example, by entering the addresses of the servers receiving the HTTP requests recorded in the profile's Business Process transaction monitors, you can later verify whether poor transaction response times are being caused by problems along the network. For details on the WebTrace report, see “WebTrace by Location Report” on page 231.

You define the locations from which you want to run WebTrace, and specify one or more destination Web sites. Business Availability Center executes the WebTrace between the location of the defined data collector instance and the designated destinations.

To add a WebTrace monitor to the profile:

- 1** In the Add WebTrace Monitor page of the wizard, click the **Add WebTrace Monitor** button.
- 2** In the **Destination** field that opens in the table, enter a destination Web server to specify the Web server on which you want the trace to be performed. Do not include the string `http://` or `https://` when typing the server address.

Note: WebTrace monitors do not support destination servers that begin with a numeric digit. IP addresses are supported.

- 3** To define additional WebTrace monitors, repeat steps 1 on page 79 and 2 on page 79.
- 4** Click **Next** to continue.

The next stage of the wizard is to select the data collectors that run the transaction monitors and WebTrace monitors assigned to the profile. Continue to “Selecting Data Collectors” on page 80, in the next section.

Selecting Data Collectors

The table of available data collectors lists all data collector instances confirmed for this installation of Business Availability Center. You can assign any, or all, of the monitors added to the profile to any, or all, of the data collector instances listed. The table also lists the host name of the data collector instance and the version number of the data collector software.

By default, once a monitor is added and a data collector selected, all the monitors are scheduled to be run by all the data collectors. You can modify which data collectors run which monitors in the next step in the wizard. For details, see “Assign Data Collectors and Configure Settings” on page 81.

To select data collectors for running transaction and WebTrace monitors:

- 1** In the list of **Available Data Collectors**, select the data collectors to run the monitors you have added to this profile.

To make your selections, you can also use the buttons at the bottom of the area for **Select All**, **Clear All**, and **Invert Selection**.

Note to HP Managed Software Solutions customers: You can use the **Package Information** link to view and edit the details of your current package and running data collectors. You can also use the **Customer Private Pops** link to view any data collectors running for only your company.

The list of data collectors includes the version number of the data collector software and indicates whether it is privately run for your company (Private Pop).

- 2** Click the right arrow to move the data collectors to the list of **Selected Data Collectors**.

To remove data collectors from the selected list, select the data collector and click the left arrow.

- 3** Click **Next** to continue.

The next stage of the wizard is to assign monitors to the selected data collectors and configure settings for the data collector instances. Continue to “Assign Data Collectors and Configure Settings” on page 81, in the next section.

Assign Data Collectors and Configure Settings

In the Assign Data Collectors page you can:

- ▶ view details for the data collectors selected in the Select Data Collectors page (for details, see page 81)
- ▶ modify the list of monitors each data collector runs (for details, see page 82)
- ▶ configure the data collectors’ settings (for details, see “Configuring Data Collector Settings” on page 83)

Viewing Data Collector Details

The table in the Assign Data Collectors page lists the following parameters for each data collector instance:

- ▶ **Location.** Location of the data collector instance as defined on the data collector machine.
- ▶ **Host.** Host alias of the data collector instance as defined on the data collector machine.
- ▶ **Group.** The group name assigned to the host location on the Business Process Monitor or in End User Management Administration.
- ▶ **Version.** Version of the data collector software installed on the data collector machine.

- ▶ **Schedule.** The schedule configured for the profile to run on the selected data collector (only relevant for monitors running on a Business Process Monitor).
- ▶ **Assigned Monitors.** A listing of all the selected profile's monitors currently scheduled to run on the data collector host location. By default, only the first monitor and last monitor appear on screen. Clicking the link of the monitors' names brings you to the Assigned Monitors dialog box where you can modify the monitors to run on this data collector.

Note to HP Managed Software Solutions customers: The table also indicates whether the data collector is run privately for your company (a Private Pop).

Assigning Monitors to Run on Data Collector Instances

Once you have added transaction and WebTrace monitors to a profile and selected the data collectors, by default, every monitor is assigned to run on every data collector. You can modify this list to assign specific monitors to run on data collector instances.

To modify the list of monitors running on a data collector instance:

- 1** Click the monitors link in the Assigned Monitors column of the table. The Assign Monitors for:<data collector name> dialog box opens.
- 2** In the list of **Selected Monitors**, select the monitors that should not run on this data collector instance. You can select multiple monitors by pressing CTRL and selecting the monitors.
- 3** Click the left arrow to move the monitor to the list of **Available Monitors** and remove it from the list of monitors the data collector runs.

To add a monitor to a data collector's list of monitors to run, select the monitor from the list of **Available Monitors** and click the right arrow.

- 4** Click **OK** to save your changes and close the Assign Monitors for <data collector name> dialog box.

5 You can either:

- ▶ Click **Next** to continue in the wizard to the Summary page. For details, see “Confirming Profile Configurations” on page 90.
- ▶ Configure the settings for the data collector instances. For details, see “Configuring Data Collector Settings” on page 83, in the next section.

Configuring Data Collector Settings

In the Assign Data Collectors page of the wizard, you can configure the following settings:

- ▶ group name (for details, see “Editing the Group Name” on page 83)
- ▶ schedule for Business Process profiles (for details, see “Editing the Schedule for Business Process Profiles” on page 84)
- ▶ advanced properties for running Business Process profiles (for details, see “Configuring Advanced Properties for Running Business Process Profiles” on page 89)

Note: These settings are saved to the data collector only if you complete the steps in the wizard and click **Finish**. If you click **Cancel** during the wizard, any changes you make to group name, schedule, or advanced properties will not be saved.

Editing the Group Name

When assigning group names, keep in mind that you can later organize and break down reports on application performance according to the groups you choose. You should therefore assign group names to locations/hosts according to the criteria you are most interested in tracking.

For example, if you assign different transaction monitors checking different business processes to different locations, you can assign group names related to the business process being emulated from each location. Another example would be to organize based on meaningful groups used by your organization, such as Internet Service Providers (ISPs), network connection, browser type, and department.

To edit the group name of a data collector instance:

- 1** In the table, select a data collector instance.
To make your selections, you can also use the buttons at the bottom of the table for **Select All**, **Clear All**, and **Invert Selection**.
- 2** Click **Edit Group**. The Data Collector Group dialog box opens.
- 3** Enter the name of the group as you want it to appear in reports. If you selected multiple data collector instances in step 1 on page 84, the group name you enter is the group name for all selected data collector instances.
- 4** Click **OK** to save your changes and close the Data Collector Group dialog box.

Editing the Schedule for Business Process Profiles

Defining a scheduling scheme for Business Process profiles is optional, as Business Availability Center automatically assigns a default scheduling scheme to each data collector instance. You can modify these settings to suit the individual needs of your organization.

The current schedule for the data collector instance is listed in the table. If no changes were made, the default schedule for the data collector to run all its transaction monitors is every 15 minutes, all week, all day, with a GMT offset of -1.

You can define multiple schedules for a profile running on a specific data collector instance. This enables you to run the profile using different schedules at different times. For example, you can have the profile run every 15 minutes during the working week and every hour during weekends.

Tip: When determining how often to run a Business Process profile, you should consider the following:

- ▶ How soon you want to know if the system is down. If the default wait of 15 minutes is too long, schedule the profile to run more frequently.
- ▶ How much load the system can handle. If the script run by the profile creates a high load on the system, schedule the profile to run less frequently so that the script does not cause system performance degradation.
- ▶ How much data is required for SLAs or reports. For example, if an SLA requires an application to be hit by a script from a specific location once every 15 minutes, it may not add any value to run a profile more frequently.
- ▶ How much load can the Business Process Monitor and Business Availability Center handle. If you schedule a profile to run very frequently, it increases the load on the Business Process Monitor and Business Availability Center. This may affect the performance of all the scripts run on the overloaded Business Process Monitor and the performance of Business Availability Center.
- ▶ How closely the script is meant to emulate real users. If the users being emulated by the script only work specific hours, it may only be necessary to schedule the profile to run from one or two hours prior to the start of this time period, to one or two hours after the end of this time period.

To define a scheduling scheme:

- 1** In the table, select a data collector instance.

To make your selections, you can also use the buttons at the bottom of the area for **Select All**, **Clear All**, and **Invert Selection**.

- 2** Click **Edit Schedule**. The Profile Schedules dialog box opens and displays the current schedule settings.



- 3 To create a schedule, click **New Schedule**. To edit an existing schedule, click the **Edit** button next to the schedule. The Profile Schedule dialog box opens containing the same editable fields.

Profile Schedules

Frequency and Recurrence Range

Every 15 minute(s), all week, all day

Custom frequency and recurrence

Frequency: Every: 15 Minutes

Days: From: Monday To: Sunday

Hours: From: 12:00 AM To: 12:00 AM

Time Zone

Data collector time

Offset from GMT: -12 : 00

Start Offset

BPM default

User defined: 0 seconds

OK Cancel

- 4 Set the schedule properties:
- Frequency for running the profile
 - Days of the week on which to run the profile
 - Hours in the day during which to run the profile

Tip: If there are no special considerations to take into account, it is recommended that you use the default scheduling scheme: **Every 15 minutes, all week, all day**

5 Select the time zone properties:

- ▶ Choose **Data collector time** to have the data collector instance base its scheduling on the data collector machine's time clock. Note that, depending on the data collector location, local time may vary among machines.
- ▶ Choose **Offset from GMT** to have the data collector instance base its scheduling on the time zone you set. Specify a time zone in relation to GMT (for a reference list of GMT time zones for locations throughout the world, see "GMT Time Zones" in *Reference Information*).

For example, if you want the data collector instance to run profiles based on Pacific Time, you would type **-8**, since Pacific Time is GMT-8 hours.

Choosing **Offset from GMT** enables you to synchronize transaction run times among hosts.

- 6 Set a **Start Offset** option to delay the scheduled running of the profile. This enables the optimal distribution of script runs over time and minimizes the parallel running of many scripts. For details, see “Profile Page” in the *Business Process Monitor Administration* PDF.
 - Choose **BPM default** to use the start offset automatically assigned in the Business Process Monitor for each profile that has this setting.
 - Choose **User defined** and set the amount of seconds the Business Process Monitor should offset the running of this profile.
 - If you define the start offset value as 0, then no offset is applied for the profile and the profile run will start at the time specified in the profile schedule.
 - If you define the start offset as -1, or do not enter a value, then the Business Process Monitor that runs the profile allocates a start offset, as described above.
 - If you enter a positive value, the profile will be run that many seconds later than the schedule configured for the profile. For example, if the profile is scheduled to run every hour, beginning at noon and you enter 5 seconds as the user-defined start offset, the profile will begin running at 12:00 and 5 seconds, and continuing running every hour, at the hour plus 5 seconds.
- 7 Click **OK**. The schedule is added/updated in the Profile Schedules dialog box.
- 8 Repeat steps 2-7 to assign multiple schedules to this profile.

Note: When setting multiple schedules on a profile, keep in mind that if the schedules overlap at any time, the profile will be run according to both schedules. The exception is if the profile is still running when a second schedule is set to start; in which case, the iteration of that profile will not run and the data collector skips that scheduled iteration.

- 9 Click **OK** to save all your schedules and close the Profile Schedules dialog box.

Configuring Advanced Properties for Running Business Process Profiles

You set the run mode, step, and time out properties for the Business Process profile in the Advanced Properties dialog box. These properties instruct the Business Process Monitor on how to run the scripts in the profile.

For details on the specific run mode options and setting the step value, see the *Business Process Monitor Administration* PDF.

To configure advanced properties for Business Process profiles:

- 1 In the table, select a data collector instance.

To make your selections, you can also use the buttons at the bottom of the area for **Select All**, **Clear All**, and **Invert Selection**.

- 2 Click **Advanced Properties**. The Advanced Properties dialog box opens.

The screenshot shows a dialog box titled "Advanced Properties". It contains the following elements:

- Run Mode:** A dropdown menu currently set to "Classic".
- Step (Seconds):** A text input field containing the value "-1".
- Time Out (Seconds):** A text input field containing the value "-1".
- Buttons:** "OK" and "Cancel" buttons at the bottom left.

- 3 Select a run mode from the available options.
- 4 If you select **Stepped** as the run mode option, set the **Step** value in seconds. (If **Stepped** is not selected as the run mode, this setting is disabled.)
- 5 Set the **Time Out** value in seconds.

This value determines the time limit after which the data collector (Business Process Monitor) running all the monitors added to this profile will timeout each of the scripts or WebTrace schemes if they are still running. This setting overrides the timeout value set on the data collector itself (default value on the Business Process Monitor is 15 minutes). If this value is set to -1 (default value), the timeout value on the Business Process Monitor is used.

- 6 Click **OK** to save the Advanced Properties settings and close the dialog box.
- 7 Click **Next** to continue.

The next stage of the wizard is to confirm the details of the profile and monitors you just created. Continue to “Confirming Profile Configurations” on page 90, in the next section.

Confirming Profile Configurations

In the Summary page of the wizard, you view the profile you just created and all the monitors that have been added to it.

For example, if you created a profile named `Springfield_Processes`, as in the example below, the Summary page displays the profile as the root object in a tree hierarchy with any monitors that have been added to the profile as the profile’s child objects, including the individual transactions.

Name	Type
Springfield_Processes	Business Process Profile
www.mydomain.com	WebTrace
Random_Availability	Transaction Monitor
tx Rand Availability	Transaction

The object icons are the same as those displayed that in the monitor tree. This same hierarchy appears in the monitor tree once you finish the wizard.

To verify details and save the profile and/or monitors:

- 1 Read through the summary and verify that the details are correct.

To make any changes to the profile or monitors, click **Back**.

- 2 Click **Finish** to save.

Updating your new profile may take a few moments, depending on how many monitors you selected and the size of the scripts added as transaction monitors.

The Finish page opens displaying the status of the profile and/or monitors you created and indicating if there were any errors during creation.

- 3 Click **OK** to return to End User Management Administration and view the created objects in the monitor tree.

9

Managing Business Process Profiles

The Business Process Monitor collects data by running Business Process profiles. You manage Business Process profiles using the monitor tree in End User Management Administration.

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About Managing Business Process Profiles

Business Process profiles and transaction monitors are created using the Business Process Profile wizard. For details, see “Creating Business Process Profiles” on page 63. Once created, these profiles and monitors are represented in the monitor tree in End User Management Administration. To make any changes to these profiles and monitors, you must use the monitor tree, Properties tab, and Contents tab.

You use End User Management Administration to:

- ▶ edit Business Process profiles (for details, see “Editing Business Process Profiles” on page 93)
- ▶ edit Business Process profile transaction monitors (for details, see “Editing Business Process Transaction Monitors” on page 94)
- ▶ reassign monitors to run on host locations (for details, see “Host Assignment Settings” on page 101)
- ▶ configure settings for the profile and the transaction monitor (for details, see “Configuring Profile, Host, and Monitor Settings” on page 98)
- ▶ edit WebTrace destinations for Business Process profiles (for details, see “Editing WebTrace Monitors” on page 111)
- ▶ specify Single URL monitors (HP Managed Software Solutions customers only) (for details, see “Specifying Single URL Monitors for Business Process Profiles” on page 112)
- ▶ copy and paste configuration settings for profiles and monitors (for details, see “Replicating Profiles and Monitors” on page 120)
- ▶ start and stop the running of Business Process profiles (for details, see “Starting and Stopping Business Process Profiles” on page 121)

You use the monitor tree to navigate through containers and elements in the tree structure and drill down to monitor and other configuration settings. For details on the different hierarchy elements, see “Using End User Management Administration” on page 15.

You can customize your view of the monitor tree to list only those elements with which you are working. For details, see “Setting Views” on page 33.

In addition, End User Management Administration enables you to change configurations across multiple profiles and transaction monitors using **Global Replace**. For details, see “Using Global Replace” on page 39.

Editing Business Process Profiles


End User Management Administration uses containers to organize configuration data for profiles. For details on working with containers, see “Using End User Management Administration” on page 15. For details on understanding the process of creating profiles, configuring settings, and adding monitors, see “About Managing Business Process Profiles” on page 92.

To create Business Process profiles, use the Business Process Profile wizard. For details, see “Creating Business Process Profiles” on page 63. For details on managing Business Process profiles and how to access the profile for editing, see “Maintaining Business Process Profiles” on page 116.

To edit Business Process profiles:

- 1** Access End User Management Administration by selecting **End User Management** in the Admin menu.
- 2** Access the profile you want to edit. For details, see “Accessing Object Properties for Editing” on page 26.
- 3** In the **Main Settings** area, edit the following information:
 - ▶ **Profile name.** A descriptive name that identifies the profile in the monitor tree, in the Dashboard, and in reports.
 - ▶ **Profile description.** The profile description appears in reports as the tooltip for the profile name. For details on entering meaningful descriptions, see “Adding Descriptions for Reports” on page 109.

Note: If an existing profile’s description is edited, the old description appears until the cache is refreshed (maximum 60 minutes).

- ▶ **Profile database name.** The database for storing profile information. This setting cannot be edited once it is set.
 - ▶ **GMT offset.** The time zone, in relation to GMT, that HP Business Availability Center uses when aggregating data collected by this profile. For example, if you want HP Business Availability Center to aggregate data collected by the profile based on Pacific Time, enter -8, since Pacific Time is GMT-8 hours. For a reference list of GMT time zones for locations throughout the world, see “GMT Time Zones” in *Reference Information*.
 - ▶ Click the **Downtime/Event Schedule** link to open the page for managing downtime events and schedules. For details, see “Creating and Assigning Downtime/Event Schedules to Profiles” on page 120.
- 4** In the **Script Order** area, you can change the order of the scripts included in the profile. Select the check box adjacent to the script whose order you want to change and use the up/down arrows to change the order of the script.
- 
- 5** For details on how to set transaction thresholds, see “Configuring Profile, Host, and Monitor Settings” on page 98.
- 6** Click **OK** to save the settings.

Editing Business Process Transaction Monitors

Transaction monitors are the scripts that contain the transactions. Business Process profile transaction monitors are added to a Business Process profile only by using the Business Process Profile wizard. For details, see “Adding Transaction Monitors” on page 71.

For details on configuring the settings for transaction monitors, see “Configuring Profile, Host, and Monitor Settings” on page 98.

Note: If a transaction in an HP Virtual User Generator script is renamed, Business Availability Center considers it as a new transaction. A new BPM Transaction from Location CI is created in the CMDB using the new name, and the CI with the old transaction name is removed after it stops receiving samples. If the CI is included in a Service Level Management agreement, you will not see historical data for it (from before the transaction name change).

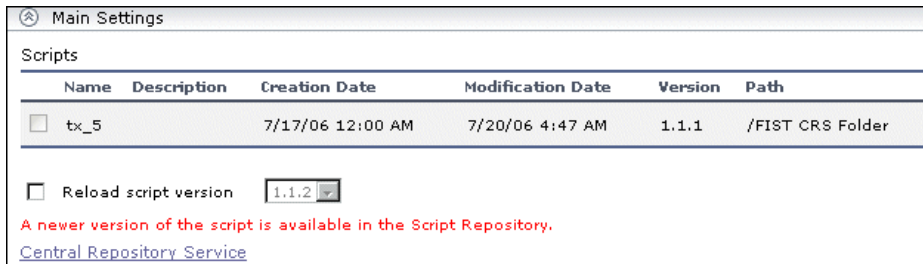
To edit a Business Process transaction monitor:

- 1** Access End User Management Administration by selecting **End User Management** in the Admin menu. Select from the following options:
 - In the monitor tree, right-click the transaction monitor you want to edit and choose **Edit** in the monitor's menu.
 - In the Contents tab highlight the appropriate transaction monitor in the monitor tree, and click the **Edit** button.

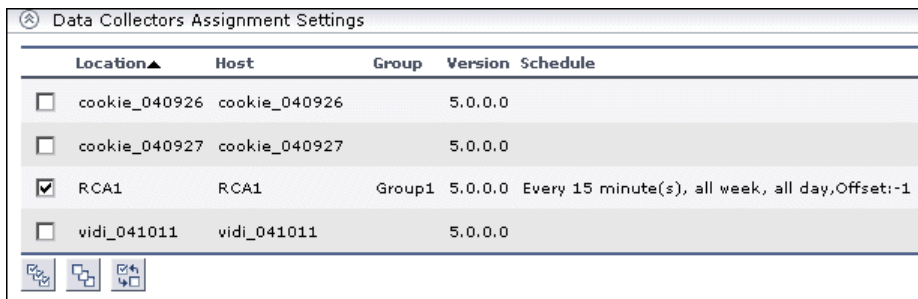


2 In the **Main Settings** area, select from the following options:

- ▶ If an updated version of a transaction monitor’s script exists in the Central Repository Service, a notification appears. You can update the version of a transaction monitor script by selecting the **Reload Script Version** check box and clicking **OK**. For details on updating the version of a transaction monitor’s script, see “Updating Versions of a Transaction Monitor Script” on page 126.
- ▶ Click on the **Central Repository Service** link to access the Central Repository Service where you can create folders, add scripts, control script versions, and view script and version properties. For details, see “Central Repository Service” in *Platform Administration*.



3 In the **Data Collector Assignment Settings** area, select the Business Process Monitor instances, on which to run this monitor. By default, all the Business Process Monitor instances are listed. You can assign Business Process Monitor instances at a later stage by editing the profile, but for the transaction monitor to run, at least one instance must be assigned.



To make your selections, you can also use the buttons at the bottom of the area for **Select All**, **Clear All**, and **Invert Selection**.

You can also assign monitors to Business Process Monitor instances using the Data Collectors tab (for details, see “Host Assignment Settings” on page 101) or from the Contents tab (for details, see “Assigning Data Collector Locations to Monitors” on page 121).

Note to HP Managed Software Solutions customers: The Data Collector Assignment Settings area lists all the locations in your package. Optionally, you can click the **Package Information** link and the **Customer Private Pops** link to view and modify package and location information. For details, see “Package Information” in *Platform Administration*.

4 In the **Transaction Breakdown Settings** area, select from the following options:

- ▶ Select **Enable breakdown** to generate transaction breakdown data when running the selected Web or TCP monitor.
 - ▶ If you have enabled breakdown, you can select **Report additional error information** to include date, time, location, and error messages for failed transactions.
 - ▶ If you have enabled breakdown, you can select **Perform component breakdown** to save complete component (page components for Web based protocols and TCP components (requests) for non-Web based protocols) breakdown data for a sampling of transaction instances. By default, HP Business Availability Center saves component breakdown data to the database once per every four transaction instances.
- ▶ Select **Enable Diagnostics breakdown** to see J2EE and .Net data. This data is available in Diagnostics reports only if you have a valid HP Diagnostics license. For details, see the *HP Diagnostics Installation and Configuration Guide*.
- ▶ Select **Enable Siebel breakdown** to see Siebel Application Response Measurement (SARM) data in Business Availability Center for Siebel Applications.

For more details on these options, see “Enable/Disable Transaction Breakdown for the Transaction Monitor” on page 104.

- 5 For details on how to set transaction thresholds, see “Transaction Threshold Settings” on page 106.
- 6 For details on what to include in the description, see “Adding Descriptions for Reports” on page 109.
- 7 Click **OK** to save the settings.

For details on editing the profile and monitor properties, see “Configuring Profile, Host, and Monitor Settings” on page 98.

Configuring Profile, Host, and Monitor Settings

Once transaction monitors are added to profiles, there are several configuration settings that must be defined according to the needs of your organization.

When adding Business Process profiles, these configurations are done within the Business Process Profile wizard. For details, see “Creating Business Process Profiles” on page 63. To change any of the settings configured within the Business Process Profile wizard, use the procedures described in the sections referenced below.

- ▶ Once you have created transaction monitors, you can select which monitors to run on which data collector’s host locations using the Data Collectors tab.
- ▶ Also in the Data Collectors tab, you define data collector configurations for Business Process profiles, including group names, schedules, and advanced properties at the host location level.
- ▶ You determine threshold settings per monitor or, alternatively, for all the monitors running within a profile.
- ▶ You determine transaction breakdown settings and add descriptions to reports at the monitor level.

Location and Profile Settings

- ▶ Host Assignment Settings – For details, see page 101.
- ▶ Data Collector Configurations – For details, see page 103.

Profile or Transaction Monitor Settings

- ▶ Transaction Threshold Settings – For details, see page 106.

Note: While you can configure transaction thresholds at either the profile level or the transaction level, you can select or clear the ignore outlier value option only while editing the profile because this is a profile-wide setting.

Transaction Monitor Settings

- ▶ Enable/Disable Transaction Breakdown for the Transaction Monitor – For details, see page 104.
- ▶ Adding Descriptions for Reports – For details, see page 109.

Using the Data Collectors Tab

The Data Collectors tab appears as an option when a Business Process profile is highlighted in the monitor tree. You use the Data Collectors tab to assign monitors to host locations.

Note: When using the Business Process Profile wizard to create profiles or add transaction monitors, the process of assigning monitors to host locations is one of the steps in the wizard. For details, see “Assign Data Collectors and Configure Settings” on page 81. You can modify the assignments by using the Data Collectors tab and the procedures described below.

You can assign any, or all, of the monitors added to the profile to any, or all, of the host locations configured for the platform. This gives you a complete picture of all the monitors running within the profile and which Business Process Monitor instances, are running which monitors.

Business Process profile Data Collectors tab:

Business Process Profile "fist...ile_1"						Contents	Properties	Data Collectors	Gl		
Location▲	Host	Group	Version	Schedule	Assigned Monitors						
<input type="checkbox"/>	labm1bac18_labm...	labm1bac18_labm...	6.1.0.0		(None)						
<input type="checkbox"/>	labm1bac18_labm...	labm1bac18_labm...	6.1.0.0		(None)						
<input type="checkbox"/>	wall_labm1bac22_1	wall_labm1bac22_1	Group1	5.0.0.0	Every 15 minute(s), all week, all day,Offset:15	tx	5	10	15;	tx	fe
<input type="checkbox"/>	wall_labm1bac22_2	wall_labm1bac22_2	Group1	5.0.0.0	Every 15 minute(s), all week, all day,Offset:15	tx	5	10	15;	tx	fe

The table in the Data Collectors tab for Business Process profiles lists the following parameters for each host location:

- **Location.** Location of the Business Process Monitor instance as defined on the data collector machine.
- **Host.** Host alias of the Business Process Monitor instance as defined on the Business Process Monitor machine.
- **Group.** The group name assigned to the host location on the Business Process Monitor or in End User Management Administration.
- **Version.** Version of the Business Process Monitor software installed on the Business Process Monitor machine.
- **Schedule.** The schedule configured for the profile to run on the selected Business Process Monitor.
- **Assigned Monitors.** A listing of all the selected profile's monitors currently scheduled to run on the Business Process Monitor instance's host location. By default, only the first monitor appears on screen. To view all the monitors, expand the list using the plus sign button next to the first monitor that appears. If none of the profile's monitors are scheduled to run on the Business Process Monitor instance, **(None)** appears as a link. Clicking this link brings you to the Assigned Monitors dialog box where you can assign monitors to run on the host.

The Data Collectors tab enables you to manage:

- “Host Assignment Settings” on page 101
- “Data Collector Configurations” on page 103

Host Assignment Settings

Within the Data Collectors tab, you can assign multiple monitors to run on selected data collector host locations. The monitor types that can be assigned to a location and that are listed in the Assigned Monitors column in the Data Collectors tab include:

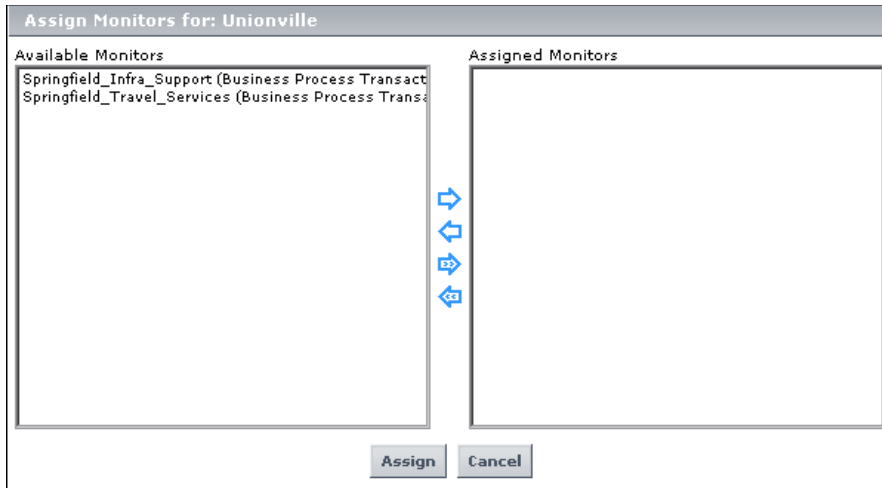
- Transaction monitors
- WebTrace monitors
- Single URL monitors (Business Process profiles for HP Managed Software Solutions customers only)

The monitors that appear in the **Assigned Monitors** column act as a link to a dialog box in which you can assign multiple monitors to run on, or remove monitors from running on, the selected host location and according to the host location’s currently configured schedule.

To assign monitors to run on specific Business Process Monitor host locations:

- 1** In the monitor tree, highlight the profile for which you want to edit the list of monitors running on specified host locations or groups.
- 2** Click the **Data Collectors** tab.
- 3** Navigate to the data collector host location or group for which you want to change the assigned monitors and in the **Assigned Monitors** column of that host location or group, click the link of the list of assigned monitors. If no monitors are running on this host, the link is the word **None**.

The Assign Monitors dialog box opens.



- 4 Select the monitors that you want to assign to run on the selected data collector location or group from the **Available Monitors** list, and use the upper arrow to move your selection(s) to the **Assigned Monitors** list. You can select multiple monitors using the CTRL key or click the **Add All** arrow to select all the monitors.
- 5 Click **Assign** to confirm your selections and close the Assign Monitors dialog box.

To remove a specified monitor from the selection:

- 1 In the Assign Monitors dialog box, select the monitor you want to remove from the **Assigned Monitors** list, and use the lower arrow to remove the recipient. After removing, the recipient appears in the **Available Monitors** list. You can select multiple recipients using the CTRL key or click the **Remove All** arrow to select all the monitors.
- 2 Click **Assign** to confirm and close the Assign Monitors dialog box.

Data Collector Configurations

In the Data Collectors tab, you can edit the settings for selected profiles by clicking the appropriate button at the bottom of the page. Select the profiles for editing by selecting the check box adjacent to the profile's location. You can edit the following settings:

- ▶ group name (for details, see “Editing the Group Name” on page 83). Click the **Edit Group** button.
- ▶ schedule for the Business Process Monitor data collector (for details, see “Editing the Schedule for Business Process Profiles” on page 84). Click the **Edit Schedule** button.
- ▶ advanced properties for running Business Process profiles (for details, see “Configuring Advanced Properties for Running Business Process Profiles” on page 89). Click the **Advanced Properties** button.

Note: These settings are originally configured while working in the Business Process Profile wizard.

Configuring Profile and Monitor Settings Using the Properties Page

The following configurations and settings are defined for Business Process profiles while adding transaction monitors in the Business Process Profile wizard (for details, see “Adding Transaction Monitors” on page 71 and “Setting Transaction Thresholds” on page 76). You can edit them using the properties page in End User Management Administration:

- ▶ Enable/Disable Transaction Breakdown for the Transaction Monitor (for details, see below)
- ▶ Transaction Threshold Settings (for details, see page 106)
- ▶ Adding Descriptions for Reports (for details, see page 109)

Enable/Disable Transaction Breakdown for the Transaction Monitor

You specify whether you want HP Business Availability Center to generate transaction breakdown data when running the selected transaction monitor. You use transaction breakdown data to analyze relative server/network distribution time (for details, see “Understanding the Transaction Breakdown Reports” on page 176).

You select the transaction breakdown settings while editing a transaction monitor. For details, see step 4 in “Editing Business Process Transaction Monitors” on page 94.

- ▶ Select **Enable breakdowns** to enable transaction breakdown for the selected script. Note that HP Business Availability Center performs transaction breakdown by default.
- ▶ Clear **Enable breakdowns** to disable transaction breakdown. Disabling this option decreases the amount of data that is sent from the Business Process Monitors to the profile database.

Note: Transaction breakdown supports the Web and TCP scripts that use the protocols configured in the Business Process Monitor **agent1.cfg** file. For details on the agent1.cfg file, see “Business Process Monitor Configuration Files” in the *Business Process Monitor Administration* PDF.

Enable/Disable Reporting of Additional Error Information

If **Enable breakdowns** is enabled, you can select **Report additional error information** to specify that you want HP Business Availability Center to report transaction breakdown error details (date, time, location, and error message) in the Breakdown Summary report. If this option is disabled, HP Business Availability Center reports only average error times. Note that disabling this option decreases the amount of data that is sent from the Business Process Monitors running the transaction breakdown to the Gateway Server and profile database. For details on the Breakdown Summary report, see “Understanding the Transaction Breakdown Reports” on page 176.

Enable/Disable Page Component Breakdown (Business Process Profiles Only)

If **Enable breakdowns** is enabled, you can select **Perform component breakdown** to specify that you want HP Business Availability Center to save complete component (page components for Web based protocols and TCP components (requests) for non-Web based protocols) breakdown data for a sampling of transaction instances. For component breakdown to appear in reports, the script containing the transactions must have been recorded using one of the following protocols:

- ▶ **Web based protocols.** SAP Web, Siebel Web, QTWeb, HTTP, SOAP, PS8, PS8WebJS, WinSockWeb, Oracle NCA, OracleWebJS.
- ▶ **Non-Web based protocols.** SAP GUI, SMTP, POP3, IMAP, Oracle 2-Tier, ODBC, FTP, LDAP, EJB, RMI Java, Java Record/Replay, Oracle NCA. For notes and limitation on non-Web based protocols, see “Notes and Limitation for Non-Web Based (TCP) Protocols” on page 190.

Note: If a script for which Business Process Monitor is configured to collect transaction breakdown data contains multiple protocols:

- ▶ Web based breakdown is used providing one of the protocols is a Web based protocol that is included in the **BdSupportedProtocols** configuration setting in the **agent1.cfg** file on the Business Process Monitor machine.
- ▶ TCP breakdown is used providing one of the protocols is a non-Web based protocol that is included in the **AdvancedTcpBdSupportedProtocols** configuration setting and none of the protocols is a Web based protocol that is included in the **BdSupportedProtocols** configuration setting in the **agent1.cfg** file on the Business Process Monitor machine.

For details on the agent1.cfg file, see “Parameters in agent1.cfg” in the *Business Process Monitor Administration* PDF.

For details on how page component breakdown data appears in reports, see “Page Component Breakdown Tool” on page 235.

By default, HP Business Availability Center saves component breakdown data to the database once per every four transaction instances. The setting for how often to save component breakdown data can be modified from the PCBD section of the **topaz_data_server.cfg** file on the Business Process Monitor machine. For details, see “Business Process Monitor Configuration Files” in the *Business Process Monitor Administration* PDF.

Note to HP Managed Software Solutions customers: The default for saving page component breakdown data to the database differs for HP Managed Software Solutions. By default, page component breakdown data is saved when the transaction’s threshold status changes to or from the Poor (red) status. For details on configuring transaction thresholds, see “Transaction Threshold Settings” on page 106.

Collecting page component breakdown data enables drilling down in the transaction breakdown reports, in the End User Management application. Drilling down to view the page component breakdown data for the transaction instances for which data is collected helps to pinpoint response time issues that occurred due to problems with a specific component of the page (for example, a large or missing image on the page).

Enable/Disable Diagnostics Breakdown (Business Process Profiles Only)

HP Business Availability Center integrates with HP Diagnostics to enable you to gain end-to-end visibility and comprehensive diagnostics for J2EE, .NET-connected, Siebel, SAP, Oracle, and other complex environments. To enable this integration, specify the Diagnostics Server details and configure the relevant components in HP Business Availability Center. For details, see the *HP Diagnostics Installation and Configuration Guide*.

Transaction Threshold Settings

Transaction thresholds are performance boundaries that organize transaction response time data in a meaningful way, enhancing validation of service level agreements. For full details on how thresholds affect reports and data in Dashboard, see “Setting Transaction Thresholds” on page 76.

Business Process profiles transaction thresholds are set while adding transactions in the Business Process Profile wizard. To edit Business Process profiles, use the Transaction Threshold Settings area in the Properties tab.

In the Transaction Threshold Settings area, you can:

- ▶ configure how HP Business Availability Center treats outlier values (only while setting transaction thresholds for a profile—the option is not available at the transaction monitor level)
- ▶ using the lower table, modify default threshold values for specific transactions
- ▶ using the upper table, update threshold values for more than one transaction (useful when updating values for multiple transactions that have the same values)

To modify transaction thresholds for specific transactions at either the profile or monitor level:

- 1** Access the page for editing either the profile or the transaction monitor (for details, see “Accessing Object Properties for Editing” on page 26).

Note: This setting can be configured only after a monitor has been added to a profile and only when editing (and not adding) either the profile or the monitor.

2 Expand the Transaction Threshold Settings area.

Transaction	OK	Minor	Critical	Outlier
<input type="checkbox"/> log in	Less than <input type="text" value="8.0"/> sec.	8.0 - 12.0 sec.	Greater than <input type="text" value="12.0"/> sec.	Greater than <input type="text" value="45.0"/> sec.
<input type="checkbox"/> Access finance vie...	Less than <input type="text" value="8.0"/> sec.	8.0 - 12.0 sec.	Greater than <input type="text" value="12.0"/> sec.	Greater than <input type="text" value="45.0"/> sec.
<input type="checkbox"/> Bring up interest ...	Less than <input type="text" value="8.0"/> sec.	8.0 - 12.0 sec.	Greater than <input type="text" value="12.0"/> sec.	Greater than <input type="text" value="45.0"/> sec.

- 3 To instruct HP Business Availability Center to ignore outlier transactions (and not include the data in reports), select **Ignore outlier data in reports**.

Note that this is a profile-wide setting, so it is available only when configuring profile properties (not transaction monitor properties).

- 4 Click the check box beside each transaction whose settings you want to modify.

If you are modifying thresholds for a profile, you can select the upper table and set the same transaction thresholds for all the transaction monitors in the profile.

- 5 In the OK and Critical columns in the lower table, modify the values (in seconds) as required. The OK range is from zero up to, but not including, the number you enter. The Critical range is between, but not including, the number you enter and infinity.

You can enter values that are less than a second. For example, you can set an OK range of 0.005 seconds (5 milliseconds).

- 6 In the Outlier column in the lower table, modify the outlier value as required.

Remember, a transaction whose response time exceeds its outlier value is treated as a failed transaction, unless you select the **Ignore outlier data in reports** option, in which case the data is excluded from reports.

You can view the number of outlier transactions that occurred during a specific time interval in the Error Summary report. For details, see “Error Summary Report” on page 168.

- 7 Click **OK** to save the settings for the checked transactions.

To modify transaction thresholds for multiple transactions:

- 1 In the lower table, select the check box beside the transactions whose values you want to update.

To select all the transactions, select the **All** check box in the upper table.

- 2 Enter the required value(s) in the OK, Critical, and Outlier columns in the upper table.
- 3 Click **Apply** to apply the changes to the selected transactions in the lower table.
- 4 Click **OK** to save the settings for the selected transactions.

Adding Descriptions for Reports

You can configure HP Business Availability Center and Service Level Management reports to include a description of each profile and transaction. Profile and transaction descriptions appear as tooltips when you hold the cursor over the name in the report, or over the name of the profile in the list of profiles. For details, see “Example of Report Description” on page 110.

You can enter a maximum of 1000 characters. Keep in mind, however, that this description appears in a tooltip. If a user’s computer monitor is set to a low resolution, not all of a very long description displays on the screen. The width of the tooltip is determined by the browser.

For details on adding a description to a profile, see step 3 under “Editing Business Process Profiles” on page 93.

To add transaction tooltip descriptions to a transaction monitor:

- 1 Access the page for editing the transaction monitor (for details, see “Accessing Object Properties for Editing” on page 26).

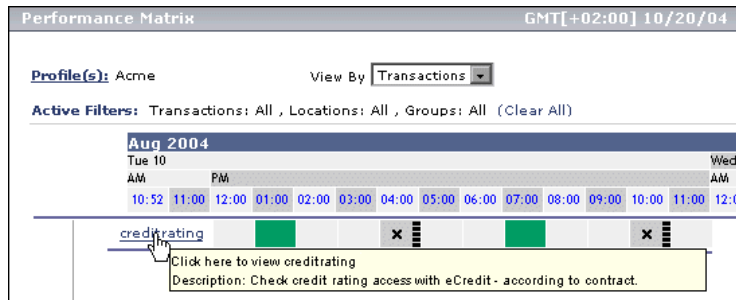
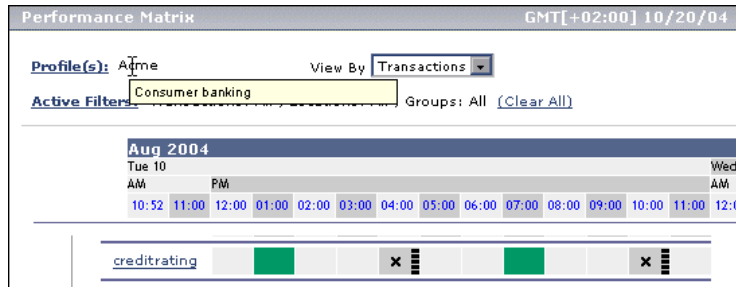
This setting can be configured only after a monitor has been added to a profile and only when editing (and not adding) the transaction monitor.

- 2 Expand the Transaction Description Settings area.
- 3 For each transaction listed for the transaction monitor, enter a description in the **Description** box.
- 4 Click **OK** to save your changes to the transaction monitor.

Example of Report Description

The profile **Acme** has the words **Consumer banking** added to the profile description box, and the transaction **creditrating** has the words **Check credit rating access with eCredit - according to contract.** added to the transaction description box.

These descriptions appear in the profile and transaction tooltips:



Editing WebTrace Monitors

WebTrace monitors record the specific route taken from the data collector to the destination Web server or IP address, including the specific gateway servers at each hop.

The WebTrace monitor is added to Business Process profiles in the Business Process Profile wizard while creating the profile. For details, see “Adding WebTrace Monitors” on page 79. To add a WebTrace monitor to an existing profile or to edit the monitor, use the descriptions below.

You add a WebTrace monitor only to a Business Process profile and not to any other container in the monitor tree.

To add a WebTrace monitor to an existing Business Process profile:

- 1** Access End User Management Administration by selecting **End User Management** in the Admin menu. Select from the following options:
 - In the monitor tree, right-click the Business Process profile to which you want to add a new monitor and choose **New WebTrace** in the profile’s menu.
 - In the Contents tab with the appropriate profile highlighted in the monitor tree, click **New WebTrace**.
- 2** Type a destination Web server in the **Destination** box to specify the Web server on which you want the trace to be performed. Do not include the string `http://` or `https://` when typing the server address.

Note: WebTrace monitors do not support destination servers that begin with a numeric digit. IP addresses are supported.

- 3 In the **Data Collector** area, select the Business Process Monitor instances, on which to run this monitor. By default, all the Business Process Monitor instances are listed. (For HP Managed Software Solutions customers, locations in your package are listed.) You must select at least one container, group, or instance to run the monitor.

Data Collectors*	Location▲	Host	Group	Version	Schedule
<input checked="" type="checkbox"/>	rca1	rca1		6.0.0.0	
<input checked="" type="checkbox"/>	wall_labm1bac19_1	wall_labm1bac19_1	Group1	5.0.0.0	Every 15 minute(s), all week, all day,Offset:15
<input checked="" type="checkbox"/>	wall_labm1bac19_2	wall_labm1bac19_2	Group1	5.0.0.0	Every 15 minute(s), all week, all day,Offset:15

To make your selections, you can also use the buttons at the bottom of the area for **Select All**, **Clear All**, and **Invert Selection**.

For details on configuring the data collector assignment settings for the profile, see “Host Assignment Settings” on page 101.

Note to HP Managed Software Solutions customers: Optionally, you can click the **Package Information** link and the **Customer Private Pops** link to view and modify package and location information. For details, see “Package Information” in *Platform Administration*.

- 4 Click **OK**. The WebTrace monitor is added to the profile.

Specifying Single URL Monitors for Business Process Profiles

Note: This section applies to HP Managed Software Solutions customers only.

You define a URL to emulate navigation to the specified URL. You then track the response time and availability results in reports.

To define a single URL monitor:

- 1 Access End User Management Administration by selecting **End User Management** in the Admin menu. Select from the following options:
 - In the monitor tree, right-click the Business Process profile to which you want to add a new single URL monitor and choose **New Single URL Monitor** in the profile's menu.
 - In the Contents tab with the appropriate Business Process profile highlighted in the monitor tree, click **New Single URL Monitor**.
- 2 Type the URL that you want HP Business Availability Center to access in the **URL to monitor** box. In the **URL to monitor** box, include the protocol, host, and optionally include the port, URL path, and parameters.

Alternatively, click **URL Builder** to open the dialog box in which you define each of these elements of the URL in separate boxes. You can optionally add parameters to the URL by clicking the **Add New Parameters** button.

The screenshot shows the 'URL Builder' dialog box. It has a title bar 'URL Builder'. The main area contains several input fields: 'URL:' with the text 'http://', 'Protocol:' with a dropdown menu showing 'http', 'Host:', 'Port:' with the text '80', and 'URL Path:'. Below these is a table with two columns: 'Name' and 'Value'. At the bottom, there is a 'Parameters:' section with an 'X' button and an 'Add New Parameter' button. At the very bottom are 'OK' and 'Cancel' buttons.

- 3 Enter a name for the single URL monitor in the **Transaction Name** box. This name identifies this monitor in the monitor tree, in the Dashboard, and in reports.
- 4 If the URL you specify requires authentication, in the Authentication area, select **Use secure logon**, and specify the required **Login name** and **Login password**.
- 5 Type a description for the URL in the **Transaction description** box. This description appears in a tooltip when you hold the cursor over the transaction name in reports, as well as in the Description column in the Performance Update report. For details, see “Adding Descriptions for Reports” on page 109.
- 6 In the **Data Collector Assignment Settings** area, select the data collector instances on which to run this monitor. By default, all the locations of the data collector type in your customer package are listed. You must select at least one data collector instance to run the monitor.

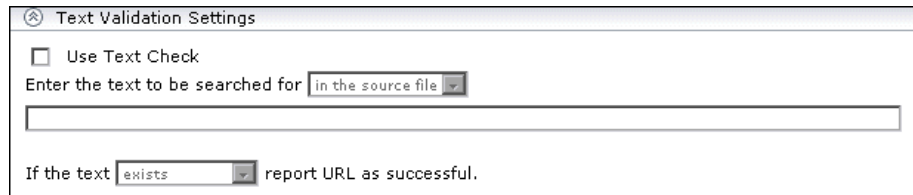
To make your selections, you can also use the buttons at the bottom of the area for **Select All**, **Clear All**, and **Invert Selection**.

For details on configuring the data collector assignment settings for the profile, see “Host Assignment Settings” on page 101.

Note: Optionally, you can click the **Package Information** link and the **Customer Private Pops** link to view and modify package and location information. For details, see “Package Information” in *Platform Administration*.

7 Text checks are a way of verifying that the URL reaches the correct page. To perform a text check on the page loaded by the URL, in the Text Validation Settings area:

- Select **Use Text Check**.



- Specify whether HP Business Availability Center should search for the text in the HTML source file or on the screen (the text that appears in the browser window). Note that, if you select **in the source file**, HP Business Availability Center looks for text strings as they appear in the Web page's source code. Ensure that text strings do not include hard returns or special characters. For example: `<`
 - Type the required text string.
 - Specify whether the text should exist or not exist for HP Business Availability Center to consider the URL successful.
- 8** In the Run-Time Settings section, select the modem emulation setting that best reflects the type of connection used by your customer base. In this way, the data that HP Business Availability Center collects more closely reflects the actual user experience of your customers.
- 9** In the Transaction Threshold Settings section, specify the OK and Poor transaction threshold ranges and an outlier value. For details about transaction thresholds, see “Transaction Threshold Settings” on page 106.

- 10** In the Transaction Breakdown Settings area, select from the following options:
- ▶ Select **Enable breakdowns** to generate transaction breakdown data when running the monitor.
 - ▶ If you have enabled breakdowns, you can select **Report additional error information** to include date, time, location, and error messages for failed transactions.
 - ▶ If you have enabled breakdowns, you can select **Perform component breakdown** to save complete page component breakdown data for a sampling of transaction instances. By default, HP Business Availability Center saves page component breakdown data to the database once per every four transaction instances.
 - ▶ Select **Enable Diagnostics breakdown** to see J2EE and .Net data. This data is available in Diagnostics reports only if you have a valid HP Diagnostics license. For details, see the *HP Diagnostics Installation and Configuration Guide*.

For details on these options, see “Enable/Disable Transaction Breakdown for the Transaction Monitor” on page 104.

- 11** Click **OK** to save the settings. The Single URL Monitor is added to the profile in the monitor tree.

You can add as many URLs as your HP Business Availability Center package allows. HP Business Availability Center displays usage status information at the top of the URLs table.

Maintaining Business Process Profiles

Over time, you may find it necessary to make changes to profiles that you create, due to organizational changes, changes to your network environment, and so forth. You edit existing Business Process profiles in End User Management Administration.

You also may find it necessary to synchronize the information stored in the profile database with your monitor tree.

Note that you do not have to stop a profile run to edit the profile. However, when you make changes to profiles, the data that HP Business Availability Center collects reflects the changes that you make. Such changes may be significant when you are viewing performance data reports. Keep in mind that, if you choose to view a report for a time period during which changes were made to the profile, the significance of the data may be affected.

Changes in Your Organization

The following table describes typical changes that might occur in your organization, requiring you to modify profiles:

Type of Change	Description
Changes to your network	Changes to your network may require you to select different host machines on which to run scripts. Alternatively, if your network grows, you may want to add hosts to a Business Process profile.
Changes to your customer base	Changes to your customer base may require you to select different locations, which better reflect the geographical dispersion of your customers.
Changes within your organization	Changes within your organization, such as opening or closing of branch offices, or restructuring of departments, may require you to select different data collectors and/or different Group settings for them.

Type of Change	Description
Changes to your monitored application	Changes to your monitored application may require you to redefine or rerecord existing scripts to suit the changes to the application. Alternatively, if new features are added to the application, you may want to define or record new scripts that include these new URLs or business processes, and add them to the profile.
Changes to application performance monitoring priorities	Changes to application performance monitoring priorities—due to changes in application usage, competition, hardware or software improvements, and so forth—may require you to modify your profiles. For example, you may decide that a particular transaction in your profile no longer reflects a typical or commonly used business process in your application. In such a case, you may want to remove the transaction from the profile and replace it with a more relevant one.

Editing Profile or Monitor Properties

Any of the changes mentioned above may necessitate making changes to the objects defined in your monitor tree.

To edit a profile or monitor:

- 1 Access the object’s Edit page. For details, see “Accessing Object Properties for Editing” on page 26.
- 2 Edit the properties of the object as required.

Note: After changing a profile name, it may be necessary for users viewing the trend reports for that profile to log in to HP Business Availability Center again.

- 3 Click **OK** to save your new settings or **Cancel** to disregard any changes.

Working with Business Process Profiles and Transaction Monitors

Once your profiles and monitors are added to the monitor tree, you can perform various functions in End User Management Administration, including:

- Managing Alerts and Recipients (for details, see next section)
- Creating and Assigning Downtime/Event Schedules to Profiles (for details, see page 120)
- Replicating Profiles and Monitors (for details, see page 120)
- Assigning Data Collector Locations to Monitors (for details, see page 121)
- Starting and Stopping Business Process Profiles (for details, see page 121)

Managing Alerts and Recipients

Once you have set up your profiles and monitors, you can create alerts schemes for those profiles to inform users when predefined performance limits are breached.

You can define alert schemes for your profiles by choosing **Alerts Management** from the Business Process profile menu (right-click a profile in the monitor tree) or in the Contents page under the list of Business Process profiles. The Alerts Management page opens listing all the alerts configured for the selected profile. To create a new alert scheme for the profile, click **New Alert**.

For details on configuring alert schemes, see “Create Alert Schemes” and for details on defining recipients to receive alerts, see “Configure Recipients” in *Custom Reporting and Alerting*.

Creating and Assigning Downtime/Event Schedules to Profiles

You may want to exclude periods of time in which downtime or other events may skew the results of collecting data for reports and in Dashboard status. You can define downtime or event schedules for when HP Business Availability Center is automatically instructed not to run the profiles. You may want to base a downtime schedule on a recurring maintenance event or a holiday.

You can assign multiple profiles to one downtime/event schedule. In End User Management Administration, you access the Downtime/Event Scheduling page while editing or adding a profile. In the Main Settings area of the profile properties page, click the **Downtime/Event Scheduling** link.

For details on creating and managing downtime/event schedules, see “Defining Downtime and Other Influencing Events” in *Platform Administration*.

Replicating Profiles and Monitors

You can use End User Management Administration to replicate configuration settings for profiles and monitors.

To copy and paste:

- 1** In the monitor tree, right-click the profile or monitor whose configurations you want to replicate. The item’s menu opens.
- 2** Select **Copy**. The message in the info area indicates whether the copy has been successful.
- 3** Right-click the item into which you want to paste the configuration settings and select **Paste** from the action menu.
 - ▶ You can paste a profile directly into the enterprise node or into a container.
 - ▶ You can paste a monitor’s configurations only into an existing profile.

The profile or monitor appears in the monitor tree with duplicated configuration settings.

- 4 To edit the name or any other settings, right-click the object in the monitor tree and select **Edit**.

Assigning Data Collector Locations to Monitors

You can assign monitors that have been added to a profile to run on selected data collector locations. You can do this per data collector location, using the Data Collectors tab (for details, see “Host Assignment Settings” on page 101) or per monitor as described here.

To assign data collector locations per monitor:

- 1 In End User Management Administration, click the **Contents** tab.
- 2 Within the contents tab, navigate to the monitor that you want to assign to run on one or multiple data collector locations.
- 3 Under the **Assigned Locations** column, click the link of the list of locations currently running the monitor.

The Assign Host dialog box opens.

- 4 Select the data collector host locations on which you want to run the selected monitor. For Business Process Profile transaction monitors, select the Business Process Monitor instances from the **Available Host Locations** list, and use the upper arrow to move your selection(s) to the **Assigned Host Locations** list. You can select multiple locations using the CTRL key.
- 5 Click **Assign** to confirm your selections and close the Assign Host Locations dialog box.

Starting and Stopping Business Process Profiles

End User Management Administration enables you to begin running the profile and end the profile on the selected host machine or group.

Once you have created a profile, added to it a transaction monitor, and configured the schedule settings, End User Management Administration begins running the profile by default. To stop the profile run, right-click the profile and choose **Stop Profile** or highlight the profile and click the **Stop Profile** button in the Contents tab. To begin running the profile again, choose **Start Profile**.

10

Using the Central Repository Service in End User Management Administration

The Central Repository Service is the central storage in which all your organization's Business Process Monitor scripts are stored and organized. In End User Management Administration, you can add to transaction monitors only those scripts that are in the Central Repository Service.

When working with the Central Repository Service, you are only able to see the folders in the Central Repository Service for which you, the logged-in user, have permissions to view. For details on setting permissions for the Central Repository Service, see "CRS Permissions" in *Platform Administration*.

Note to HP Managed Software Solutions customers: The repository for HP Managed Software Solutions scripts functions differently from the repository described here. For details, see "HP Managed Software Solutions Script Repository" in *Platform Administration*.

This chapter describes:	On page:
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Adding Transaction Monitor Scripts to the Central Repository Service	125
Updating Versions of a Transaction Monitor Script	126
Zippping Scripts	127

Adding Scripts from the Central Repository Service to Create a Transaction Monitor

When adding scripts to a transaction monitor, you must select a script from the Central Repository Service. You must locate and select the script containing those transactions you want this profile to run.

You can also use the **Central Repository Service** link at the top of the Add Transaction Monitors window to access the Central Repository Service where you can create folders, add scripts, control script versions, and view script and version properties. For details, see “Central Repository Service” in *Platform Administration*.

To add a script from the Central Repository Service to the transaction monitor:

- 1** While creating a transaction monitor, click **Add Scripts** in the Main Settings area. The Add Transaction Monitors page opens.
- 2** In the upper left Repository pane, select the folder containing the script to add to the transaction monitor.

The upper right Scripts pane displays all of the scripts contained in the selected folder.

- 3** In the upper right Scripts pane, select the scripts to add to the transaction monitor. You can add multiple scripts to one transaction monitor.

To make your selections, you can also use the buttons at the bottom of the area for **Select All**, **Clear All**, and **Invert Selection**.

- 4** In the Selected Scripts area at the bottom of the page, select the scripts you want to add to the transaction monitor.
- 5** Optionally, use the dropdown list of the version number to display and select older versions of the script. By default, the latest version number is displayed.
- 6** Click **OK**. The Add Transaction Monitors page closes and the script is added to the transaction monitor. Continue with the steps for adding the transaction monitor.

Adding Transaction Monitor Scripts to the Central Repository Service

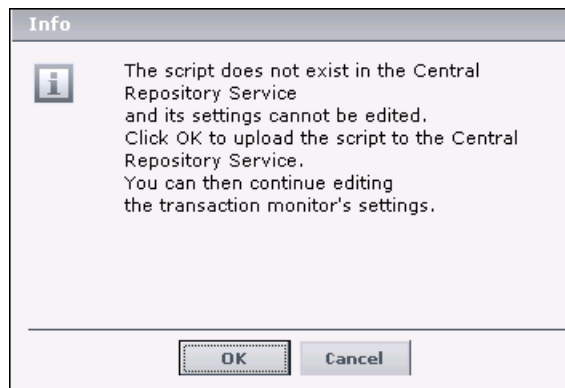
If a transaction monitor's script is not in the Central Repository Service, the transaction monitor's properties cannot be edited until that script is added to the repository. A note indicating this appears in the Contents tab within the table listing the profile's transaction monitors.

You can add a transaction monitor's script to the Central Repository Service from within End User Management Administration. When you attempt to edit a transaction monitor whose script is not in the Central Repository Service, a message opens enabling you to add the script to the repository.

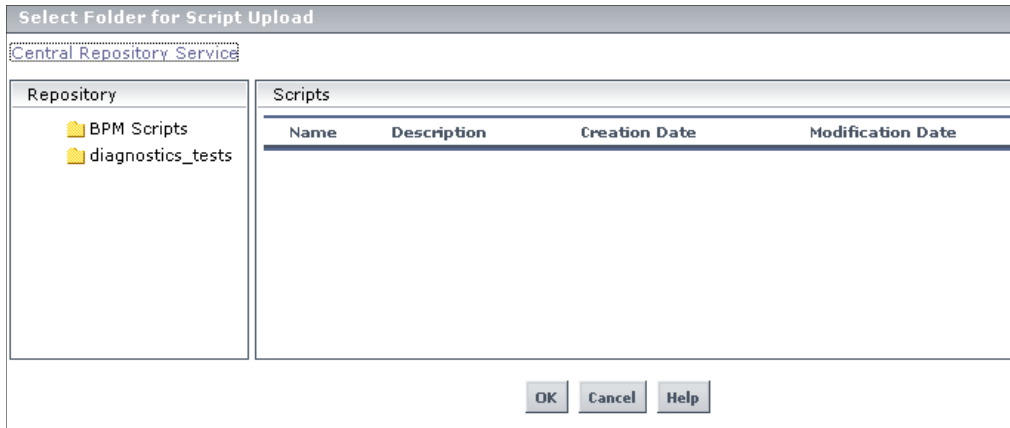
Note: When upgrading from a previous version of Business Availability Center that did not include a Central Repository Service, this is the same procedure to follow when the profiles and transaction monitors have been upgraded, but the scripts are not in the Central Repository Service.

To add a transaction monitor's script to the Central Repository Service:

- 1 Edit the transaction monitor by clicking its **Edit** button in the Contents tab or by selecting **Edit** in the transaction monitor's menu (right-click the transaction monitor in the monitor tree). The following warning message opens.



2 Click **OK**. The Select Folder for Script Upload page opens.



3 In the Repository pane, select the folder into which you want to upload the transaction monitor’s script. Click **OK**.

Optionally, you can click the **Central Repository Service** link at the top of the page to access the Central Repository Service and create a new folder into which to upload the script. For details on working in the Central Repository Service, see “Central Repository Service” in *Platform Administration*.

Updating Versions of a Transaction Monitor Script

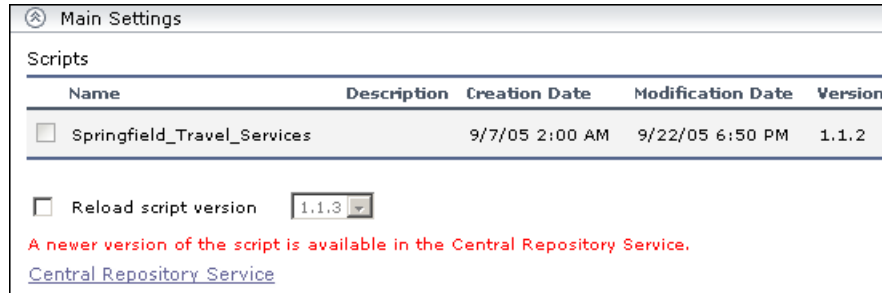
If an updated version of a transaction monitor’s script exists in the Central Repository Service, a notification appears in the Contents tab within the table listing the profile’s transaction monitors.

You can update the version of a transaction monitor script directly from the Edit Transaction Monitor Properties page in End User Management Administration.

To update the version of a transaction monitor script:

- 1 Access the transaction monitor's Edit page. For details, see "Accessing Object Properties for Editing" on page 26.

In the Main Settings area, a message appears in red indicating that a newer version of the script is available in the Central Repository Service.



The screenshot shows a web interface titled "Main Settings". Under the "Scripts" section, there is a table with the following data:

Name	Description	Creation Date	Modification Date	Version
Springfield_Travel_Services		9/7/05 2:00 AM	9/22/05 6:50 PM	1.1.2

Below the table, there is a checkbox labeled "Reload script version" next to a dropdown menu currently set to "1.1.3". Below this, a red message states: "A newer version of the script is available in the Central Repository Service." with a link to "Central Repository Service".

- 2 Select **Reload script version** to load the version of the script displayed in the script version box (by default, the latest available version). Optionally, you can select a different version of the script to reload for the transaction monitor.
- 3 Click **OK** at the bottom of the edit properties page.

Zipping Scripts

To add a transaction monitor to a Business Process profile in End User Management Administration, the files comprising the transaction must be zipped.

You can zip a transaction's files by:

- ▶ using the Virtual User Generator. For details, see the HP Virtual User Generator documentation.
- ▶ zipping the files in your file manager as described in the following procedure.

To zip transactions:

- 1** In your file manager, browse to the transaction's directory.
- 2** Select all the files in the directory (CTRL A) and create a zip file including all the files. You must use the name of the .usr file as the name of the zipped file. For example, if the .usr file is called check_accounts.usr, the zip file must be named check_accounts.zip.

Ensure that the **Save full path info** option is not selected so that there are no paths in the path column of the zip archive.

Note: Do not select the directory itself to **Add to Zip** as this will include the directory name in the path column. You cannot add a zipped file that includes a directory to a profile in the console.

11

QuickTest Professional Recording Tips

This chapter describes tips and recommendations for recording scripts in QuickTest Professional (QTP) when recording scripts for use in HP Business Availability Center.

This chapter describes:	On page:
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Recommended QuickTest Professional Script Recording Techniques

In certain environments, it may be necessary or preferable to use QuickTest Professional instead of VuGen to record scripts for use with Business Process Monitor. Examples of such environments include: certain Java applications, terminal emulator, home-grown applications written in VB or MVS, Lotus Notes, Siebel (in certain cases), a Delphi application using a third-party Oracle integration layer, an application that communicates using a proprietary, compressed, encrypted protocol, or an application using asynchronous communication.

Use the below recommendations when installing and using QuickTest Professional with HP Business Availability Center. For more information about QuickTest Professional, see the *HP QuickTest Professional User's Guide*.

Note: For additional recommendations to consider when scripting for Business Process Monitor with QuickTest Professional, see Customer Support Knowledge Base article 45588.

- ▶ When possible, it is recommended to install QuickTest Professional and record scripts (referred to as tests in the *HP QuickTest Professional User's Guide*) on the same machine running the Business Process Monitor that will execute the scripts. It is further recommended to use the same operating system image on all Business Process Monitor machines that will execute the script. If it is not possible to record scripts on the Business Process Monitor machine, make sure to record scripts on a machine whose environment is the same as the Business Process Monitor machine(s) that will run the scripts.
- ▶ Make sure to install Business Process Monitor prior to installing QuickTest Professional.
- ▶ Before recording QuickTest Professional scripts, it is recommended to select the **Record and run on these applications** option in the Record and Run Settings dialog box, and to specify the application(s) against which the script will run. Failure to select this option may result in the failure of Business Process Monitor to run the script. To enable this option, open the script in QuickTest Professional, select **Test > Record and Run Settings > Windows Applications**, and select the **Record and run on these applications** setting. Make sure the application(s) against which the script will run are defined.
- ▶ Every QuickTest Professional script must contain at least one transaction to provide useful information in Business Process Monitor.
- ▶ To add transactions in QuickTest Professional, add the following lines to the script:
 - ▶ To start a transaction, click the Start Transaction button, or manually add the following statement: `Services.StartTransaction "<name of transaction>"`
 - ▶ To end a transaction, click the End Transaction button, or manually add the following statement: `Services.EndTransaction "<name of transaction>"`

- ▶ You can also add distributed transactions and transactions using manually entered data to scripts. Keep the below points in mind when using distributed transactions. For more information, see the QuickTest Professional documentation.
 - ▶ When measuring a distributed transaction over two different Business Process Monitor profiles, the profile with the StartDistributedTransaction statement must be run before the profile with the associated EndDistributedTransaction.
 - ▶ When measuring distributed transactions, make sure that you relate the scripts to a single Business Process Monitor instance. Business Process Monitor searches for the end transaction name in all instances, and may close the wrong distributed transaction if it is included in more than one instance.
 - ▶ When measuring a distributed transaction over two Business Process Monitor profiles, make sure that the timeout value you specify is large enough so that the profile that contains the StartDistributedTransaction step and all the profiles that run before the profile that contains the EndDistributedTransaction step, will finish running in a time that is less than the value of the specified timeout.

- ▶ When calling values from a parameter file, note the following:
 - ▶ DataTable expects the column name as the first parameter, for example `DataTable("A")` will access value from column A.
 - ▶ By default, QuickTest Professional runs a number of global iterations equal to the number of rows in the global data sheet. You can modify the default range of global iterations in QuickTest Professional from **File > Settings > Run**.
- ▶ Executing a QuickTest Professional script in a profile (when run by Business Process Monitor) differs from executing it in QuickTest Professional. In Business Process Monitor, the script runs in *mdrv mode*, while in QuickTest Professional the script runs in *QTP mode* (which is a GUI mode). It is recommended to always run scripts in QuickTest Professional in *mdrv mode* to verify that they run correctly before using them in Business Process Monitor. To test the execution in *mdrv mode*, use one of the following methods:
 - ▶ Use Silent Test Runner (accessible from **Start > Programs > QuickTest Professional > Tools**), an application for running tests in *mdrv mode*. It provides a run log and transaction log that can be reviewed to verify that scripts run successfully.
 - ▶ Run *mdrv* using command line syntax. First, run the following command from the QuickTest Professional path with the `-usr` flag:

```
"<QuickTest Professional installation directory>\bin\mdrv.exe" -usr <path to  
usr file>
```

Then run the script using the following syntax:

```
<QTP script path located under the BPM workspace directory>\script  
name.usr
```

For example:

```
"C:\Program Files\Mercury  
Interactive\BPM\workspace\agent1\Site1\qtp_script\441\Check_users\Check  
_users.usr"
```

- ▶ When a script starts, it usually launches some application. Scripts should be designed such that the application is closed at the end. Otherwise, the next invocation of the script will launch another instance of the application, which could cause the script to fail. ALternatively, design the script to check whether the application is already open and to launch the application only if it is not open. In this case, the script should return the application to its starting state.
- ▶ Note the following additional limitations:
 - ▶ External Actions or other external resources (DataTable, Function Library, Shared Object Repository, Ext. Environment) are not supported unless the external resource can be found from the Business Process Monitor machine (that is, if it was defined using the UNC network path and that UNC network path is also accessible from Business Process Monitor).
 - ▶ Keep in mind that scripts run faster in mdrv mode than in QTP mode, which can result in synchronizations problems; thus scripts that run correctly in QTP mode might not run correctly in mdrv mode. Usually adding wait time or checking for an object's existence will solve this problem.

12

VuGen Recording Tips

This chapter describes tips and recommendations for recording scripts in HP Virtual User Generator (VuGen) when recording scripts for use in HP Business Availability Center.

Note: If you change the name of a transaction in a VuGen script, you will no longer see historical data for the transaction in HP Business Availability Center.

This chapter describes:	On page:
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Recommended VuGen Run-Time Settings

The following run-time settings are recommended when creating scripts for HP Business Availability Center using VuGen. You set run-time settings in VuGen. For details, see the HP Virtual User Generator documentation.

Note: For non-Web protocols, not all of the run-time settings described below are available. When recording scripts with non-Web protocols, it is recommended to use the default run-time settings, unless modifications are required to suit your specific environment.

General: Pacing

Recommended Setting	Remarks
Number of iterations: 1 (default setting)	Typically, in HP Business Availability Center, there is no need to have a script run multiple iterations during each scheduled run. Note: For multiple action protocols, this setting appears under the Run Logic node.
As soon as the previous iteration ends (default setting)	Unless the number of iterations is set to greater than 1, this setting is not applicable to HP Business Availability Center.

General: Log

Recommended Setting	Remarks
Enable logging: disabled	When logging is enabled, it increases transaction response times.

General: Think Time

Recommended Setting	Remarks
Ignore think time (default setting)	When think time is enabled, it increases transaction response times when occurring inside a transaction.

General: Additional Attributes

Recommended Setting	Remarks
No additional attributes (default setting)	This setting is not applicable to HP Business Availability Center.

General: Miscellaneous

Recommended Settings	Remarks
Continue on error: enabled	Set this in the Error Handling section so that your scripts continue to run when errors occur.
Fail open transactions on lr_error_message: disabled (default setting)	Set this in the Error Handling section. You can insert <code>lr_error_message</code> statements into a transaction for informational messages that can aid in identifying the reason for transaction failure. Such messages will display even with logging turned off (unlike <code>lr_output_message</code>). If statements to explicitly fail transactions are required, use <code>lr_set_transaction_status</code> .
Generate snapshot on error: enabled	Set this in the Error Handling section so that you can later analyze the errors that occur during the script run.
Run Vuser as a process	Set this in the Multithreading section.
All Automatic Transactions settings should be disabled	You should manually insert transactions, either during recording or afterward, that reflect the exact business processes for which you want HP Business Availability Center to collect data.

Network: Speed Simulation

Recommended Settings	Remarks
Use maximum bandwidth (default setting) or Use bandwidth <typical>	For B2B applications, it is reasonable to assume that maximum bandwidth emulation reflects the end-user experience. Otherwise, select the most widely used connection type of your customer base.

Browser: Browser Emulation (Web protocols)

Recommended Setting	Remarks
User-Agent: Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; T312461)	Although this is the recommended setting, you should select the browser type most suitable to the application being monitored.
Simulate browser cache: enabled (default setting)	This setting is preferable as it simulates real browser behavior, especially when you have several transactions within the same script that are dependant on one another.
Cache URLs requiring content (HTMLs): disabled	This setting is preferable as, if the setting is enabled, VuGen will not download the content of a URL that is cached and may cause verification checks to fail. The replay engine will not check to see whether the content of the cached page has changed.
Check for newer versions of stored pages every visit to the page: disabled (default setting)	This reflects the default browser setting.
Download non-HTML resources: enabled (default setting)	This setting is preferable as it simulates real end-user experience.

Recommended Setting	Remarks
Simulate a new user on each iteration: enabled (default setting)	Unless the number of iterations is set to greater than 1, this setting is not applicable to HP Business Availability Center.
Clear cache on each iteration: enabled (default setting)	Unless the number of iterations is set to greater than 1, this setting is not applicable to HP Business Availability Center.

Internet Protocol: Proxy (Web protocols)

Recommended Setting	Remarks
No proxy (direct connection to the Internet) (default setting)	<p>This is the recommended setting when direct connection to the Internet from the Business Process Monitor is possible, and/or when your end users are not typically accessing your application through a proxy server.</p> <p>If for any reason connection through a proxy is required to access the Internet (for example, if the Business Process Monitor machine is behind a firewall, or due to company policy requiring connection to the Internet through a proxy), or if you want to emulate end users connecting through a proxy server, select one of the available proxy server settings.</p>

Internet Protocol: Preferences (Web protocols)

Recommended Settings	Remarks
<p>Enable image and text check: enabled</p>	<p>If you are using checks in the script, it is recommended that you use <code>web_reg_find</code> and not <code>web_find</code>, as the latter has a significant effect on transaction response time. When using <code>web_reg_find</code>, you do not need to enable the Checks setting.</p> <p>However, if you are using the <code>web_find</code> or <code>web_image_check</code> functions, this setting needs to be enabled.</p>
<p>All Generate Web performance graphs settings should be disabled.</p>	<p>These settings are not applicable to HP Business Availability Center.</p>
<p>WinInet replay instead of Sockets (Windows only): disabled (default setting)</p>	<p>Only enable WinInet replay if you are recording in an environment that uses SOCKS proxy or proxy automatic configuration.</p>
<p>File and line in automatic transaction names: disabled</p>	<p>These settings are not applicable to HP Business Availability Center.</p>
<p>Non-critical resource errors as warnings: enabled (default setting)</p>	<p>Similarly to the way IE works, this prevents a transaction from failing on errors such as HTTP 404, which can occur, for example, if one image is missing from the page.</p>
<p>Save snapshot resources locally: disabled</p>	<p>This setting is not applicable to HP Business Availability Center.</p>
<p>All Advanced Options can be left at default values, or modified as required.</p>	<p>To set Advanced Options, click the Options button in the Advanced section.</p>

Internet Protocol: Download Filters (Web protocols)

Recommended Setting	Remarks
Include only addresses in list (default setting)	This setting is ignored as long as no addresses are listed. To enable this feature, choose either option and add entries. For example, you can exclude the downloading of resources from a third-party vendor (address) for which you have no control (such as an ad server).

Internet Protocol: ContentCheck (Web protocols)

Recommended Setting	Remarks
Enable ContentCheck during replay: enabled	It is recommended that you configure and use ContentCheck if possible. If you choose to enable this feature, you must define ContentCheck rules. If you do not have any ContentCheck rules defined, disable the feature. Note that an alternative method to verify content is the use of text checks using <code>web_reg_find</code> .

Recommended VuGen Script Recording Techniques

Use the following recommendations when recording scripts with VuGen for use in HP Business Availability Center. For more information about recording-related terminology, see the HP Virtual User Generator documentation.

- ▶ While recording, insert transaction markers to mark the start and end of the specific business processes for which you want HP Business Availability Center to collect data. For example, you might record a transaction file that includes navigating to the home page of a Web site, performing a user login, performing a search, and viewing the search results. You could break this script into two separate transactions—login and search. During recording, you would insert start and end transaction markers before and after each separate activity. HP Business Availability Center would then track response time and availability data separately for each marked transaction in the transaction file. Note that you can also record a number of business process steps, and then after recording, manually insert transaction markers into the script.
- ▶ Record small transactions that contains just one logic step (for example, logging in, accessing a home page, performing a search, and so forth). This will improve the ability to later pinpoint and resolve problems.
- ▶ Record transactions that monitor specific components in your application architecture (for example, accessing the home page to monitor the Web server, performing a search to monitor the database server, and so forth).
- ▶ Always use correlation and fail the transaction if correlation fails.

- ▶ When recording Web-based transactions, include a `web_reg_find` check inside a transaction to verify that you receive the correct Web page. Ensure that you place the check statement between the start and end transaction statements.
- ▶ If you are interested in monitoring performance dependency, you can nest transactions one inside another.
- ▶ To get an overall picture of business process performance, while at the same time tracking the performance of individual steps within the business process, create a main transaction inside which you mark sub-transactions.

For example, say you want to monitor the business process of ordering a book in a Web-based application. You could create one main transaction that involves all the steps: accessing the home page, logging in, performing a search, submitting the order. Within this transaction you could mark sub-transactions that monitor each individual step in the process.

You monitor the sub-transactions to track the performance of the business process components (which might access different server machines in the application architecture); you monitor the overall transaction to get a clear picture of the performance of the complete business process, which is often useful for reporting, comparing to a competitor's application, and so forth.

13

End User Management Report Configuration

You use the End User Management Reports page to configure how your reports appear in HP Business Availability Center. You can select the order in which transactions appear in reports, use color coding to configure the appearance of transactions, and filter out transactions, locations, and groups that you do not want appearing in your reports.

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About Report Configuration

You can perform the following report configuration tasks:

- ▶ You specify the order in which you want transactions that are part of a specific profile to appear in performance data reports (for details, see “Transaction Ordering” on page 146).
- ▶ You specify the color used to represent a transaction in reports (for details, see “Transaction Coloring” on page 146).

- ▶ You specify which transactions, locations, and/or groups to exclude from all HP Business Availability Center reports (for details, see “Report Filters” on page 147).

Transaction Ordering

You can specify the order in which you want transactions that are part of the current profile to appear in reports. You can use the links at the top of the list to sort the list by transaction name and you can return the list to its original order.

To modify the transaction order:

- 1** Select **Transaction Ordering** in the Reports tab (**Admin > End User Management > Reports**).
- 2** Select the profile whose transactions you want to order in the **Select profile** list.
- 3** To move a transaction up or down in the list, select the transaction and use the arrows to the right of the list.
- 4** To sort the list, click **Sort by name**.
To display the original order of the transactions, click **Revert to original order**.
- 5** Click **Save** to save the order.

Transaction Coloring

You can modify the colors used to represent transactions in the following business reports: Availability Over Time, Response Time Over Time, sections of Transaction Analysis, and Response Time by Percentile.

To assign a different color to a transaction for display in reports:

- 1** Select **Transaction Coloring** in the Reports tab (**Admin > End User Management > Reports**).
- 2** Select the profile containing the transactions whose color you want to modify in the **Select profile** list.



- 3 Click the color picker button, select the required color or enter its hexadecimal value and click **OK**.
- 4 Click **Save** to save the colors.

Report Filters

You can use report filters to exclude specific transactions, locations, and/or groups from all reports for the current and future profile sessions. You configure report filters per profile. For details on filtering individual reports for current sessions, see “Filtering Individual Reports” on page 148.

Individual users can configure report filters only for themselves. Administrators can configure global report filters that affect all users. Any transaction, location, or group that is filtered with the global-level report filter is unavailable at the user level (and is disabled on the Report Filters page). For details on specifying global-level report filters, see “Configuring Report Filters Globally” in *Platform Administration*.

Note: Previously defined filters still appear in user-defined reports (custom and trend) that were created before configuring the filter. To update user-defined reports, remove and re-add the components containing the profiles for which filters have been set, and save the report. For details, see “Adding a Component to a Report” in *Custom Reporting and Alerting*.

To exclude transactions, locations, or groups from a report:

- 1 Select **Report Filters** in the Reports tab (**Admin > End User Management > Reports**).
- 2 Select the profile in the **Select profile** list.
- 3 To exclude any transaction, location, or group from a report, select its check box.

Tip: To prevent old or obsolete transactions from appearing in reports, use the transaction filter.

- 4 Click **Save** to save the filters.

To include previously excluded transactions, locations, or groups from a report:

- 1 Select **Report Filters** in the Reports tab (**Admin > End User Management > Reports**).
- 2 Select the profile in the **Select profile** list.
- 3 Clear the check box of any transaction, location, or group that should now appear in a report.
- 4 Click **Save** to save the changes.

Filtering Individual Reports

You can filter individual Business Process Monitor and Summary reports for current sessions by selecting a profile and setting active filters for the report.

To select a profile:

The first time you log into HP Business Availability Center, the first profile in the list (which is sorted alphabetically) is displayed. For the Multi-Profile Summary report, all profiles are displayed. When you log in on subsequent occasions, HP Business Availability Center displays the last profile (or profiles, in the Multi-Profile Summary report) that you selected.

- 1 Click the **Profile(s)** link at the top of the report to open the **Profiles** window.
- 2 Select a profile from the list. If you are working in the Multi-Profile Summary report, select multiple profiles up to a maximum of 10.
- 3 Click **OK**.

To set active filters:

- 1** Click the **Active Filters** link at the top of the report to open the **Active Filters** window. The Active Filters window can contain any on the following tabs:
 - ▶ **Transactions.** Recorded business processes run by Business Process Monitors. In the Triage Raw Data report, you can choose one transaction only. For details, see “Triage Raw Data Report” on page 157.
 - ▶ **Locations.** Locations of host machines running Business Process Monitors.
 - ▶ **Groups.** Groups of host machines running Business Process Monitors.
- 2** From the appropriate tab, select the components to include in reports, or clear items to exclude them from reports. You can use the select buttons to select all items, clear all items, or invert your selection in a tab. You must select at least one item from each tab.
- 3** Click **OK** to save the filter settings and close the Active Filters window.



Note:

- ▶ Click the **Restore Default Settings** link at the top of the report to regenerate the report unfiltered.
 - ▶ If all transactions are removed from a specific location, that location still appears in the Location tab.
 - ▶ When displaying the Response Time over Time and Availability over Time charts, HP Business Availability Center can display up to 100 transactions simultaneously. If a profile has more than 100 transactions, HP Business Availability Center automatically selects the first 100 transactions listed on the Transaction Ordering page. To select different transactions to view, modify the active filters. To change the order in which transactions appear, you modify their order in the Transaction Ordering page. For details, see “Transaction Ordering” on page 146.
 - ▶ If the HP Business Availability Center databases are installed on an Oracle Server, wildcard expressions used in active filters are case sensitive. On an MSSQL Server, wildcard expressions used in active filters are case insensitive. For further details on the HP Business Availability Center databases, see the *HP Business Availability Center Database Guide* PDF.
-

Customizing Reports

This section describes some of the settings that can be modified to customize End User Management.

Only the administrator or users with the appropriate permissions can modify the infrastructure settings.

Caution: Many of the settings in the Infrastructure Settings Manager should not be modified without first consulting Customer Support or your HP Professional Services representative. Modifying certain settings can adversely affect the performance of HP Business Availability Center.

For details on settings that can be modified for Real User Monitor reports, see the section on customization in “Real User Monitor Reports” on page 285.

This section includes the following topics:

- ▶ “Defining the Time to Hold Cached Calculated Data for the Status Snapshot Report” on page 151
- ▶ “Changing Last Ping Time and Last Data Time Defaults” on page 152
- ▶ “Changing the Maximum Number of Transactions and Locations” on page 152
- ▶ “Hiding/Displaying the Host Name Value in the Page Component Breakdown Tool Report” on page 153

Defining the Time to Hold Cached Calculated Data for the Status Snapshot Report

You can customize the End User Management setting that defines the time (in seconds) to hold cached calculated data for the Status Snapshot. For details, see “Status Snapshot” on page 51.

To define the time to hold cached calculated data for the Status Snapshot report:

Select **Admin > Platform > Setup and Maintenance > Infrastructure Settings**, choose **Foundations**, select **End User/System Availability Management**, and locate the **End User Management Status Snapshot data timeout** entry in the **End User/System Availability Management – Timing** table. Modify the value to the number of seconds required.

Changing Last Ping Time and Last Data Time Defaults

When the Triage report is requested, HP Business Availability Center checks when the collector ping time and data time were last reported. By default, HP Business Availability Center compares these values to 60 minutes. If the last report time is higher than the default, a yellow icon is displayed in the Triage report. You can change this setting in the Infrastructure Settings Manager. For details of the Triage report, see “Triage Report” on page 220.

To change Last Ping Time and Last Data Time defaults:

Select **Admin > Platform > Setup and Maintenance > Infrastructure Settings**, choose **Foundations**, select **End User/System Availability Management**, in the **End User/System Availability Management – Data** table, locate the following entries and modify their values to the number of minutes required:

- **Max. time since last reported collector ping time**
- **Max. time since last reported collector data time**

Changing the Maximum Number of Transactions and Locations

By default, End User Management displays 20 locations and 20 transactions in the Triage report. You can change this setting in the Infrastructure Settings Manager. For details of the Triage report, see “Triage Report” on page 220.

To change the maximum number of transactions and locations:

Select **Admin > Platform > Setup and Maintenance > Infrastructure Settings**, choose **Foundations**, select **End User/System Availability Management**, and locate the **Max. number of transactions or locations in Triage report** entry in the **End User/System Availability Management – Data** table. Modify the value to the required number.

Hiding/Displaying the Host Name Value in the Page Component Breakdown Tool Report

You can hide the host name values in the Page Component Breakdown Tool Report. You can change this setting in the Infrastructure Settings Manager. For details, see “Page Component Breakdown Tool” on page 235.

To hide/display the host name value in the Page Component Breakdown Tool Report:

Select **Admin > Platform > Setup and Maintenance > Infrastructure Settings**, choose **Foundations**, select **End User/System Availability Management**, and locate the **Display Host Name in Page Component Breakdown Report** entry in the **End User/System Availability Management – Display** table. Modify the value to **true** or **false** as required.

14

Business Process Reports

This chapter describes the Business Process reports and explains how to use them to understand the performance of your system.

This chapter describes:	On page:
About Business Process Reports	156
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Response Time Over Time Report	164
Transaction Analysis Report	166
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Understanding the Transaction Breakdown Reports	176
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About Business Process Reports

Business Process reports provide you with an in-depth view of the health of your monitored environment. You access Business Process reports from the Business Process tab in the End User Management application.

For details on working with reports (choosing the time range, selecting the profile, saving and sharing reports, and so on), see “Working in Reports” in *Reference Information*.

The following reports are available:

Category	Description	For Details, See...
Availability Over Time Report	Displays the percentage of successful transactions performed by all hosts in a profile—organized by transaction, location, or group—over time.	page 162
Response Time Over Time Report	Displays the average response times (in seconds) of completed transactions—organized by transaction, location, or group—over time.	page 164
Transaction Analysis Report	Provides an in-depth picture of the performance of transactions.	page 166
Error Summary Report	Provides a detailed list—organized by error type—of errors that occurred during a profile run, over the specified time period.	page 168
Location Analysis Reports	Provides an in-depth picture of the performance of transactions, organized per defined location.	page 175

Category	Description	For Details, See...
Breakdown Over Time Report	Helps you determine whether poor transaction response times are being caused by network or server problems, or by client delays, and enables you to pinpoint exactly when the problems are occurring.	page 193
Breakdown Summary Report	Enables you to assess whether poor transaction response times are being caused by network or server problems, or by client delays.	page 196
Min./Max. Response Time Report	Displays the minimum, average, and maximum response time (in seconds) of completed transactions—organized by transaction, location, or group.	page 202
Response Time by Percentile Report	Displays, for the defined time range, the specific response time value that all measured response time values are equal to or below, for the 10th to 100th percentile, in 10% increments.	page 204

Triage Raw Data Report

The Triage Raw Data report displays performance and availability raw data for a Business Process Monitor transaction. You access the Triage Raw Data report by drilling down from the Triage report or through the End User Management application.

This section includes the following topics:

- “Filtering Report Data” on page 158
- “Working With the Triage Raw Data Report” on page 158
- “Incorporating a Triage Raw Data Report in a Custom Report” on page 162

Filtering Report Data

To filter report data, you can change the view, profile, or active filter:

- ▶ For details on choosing a view, see “Choosing the Time Range and Granularity” in *Reference Information*.
- ▶ For details on choosing a profile, see “Filtering Individual Reports” on page 148.
- ▶ For details on filtering queries, see “Filtering Individual Reports” on page 148.

You can print, format, and export the Triage Raw Data report. For details, see “Sharing and Storing Reports” in *Reference Information*.

Working With the Triage Raw Data Report

This section explains how to access the Triage Raw Data report, generate a report, work with the report, and modify the report.

To access the Triage Raw Data report:

- ▶ Select **Applications > End User Management > Business Process > Triage Raw Data**.

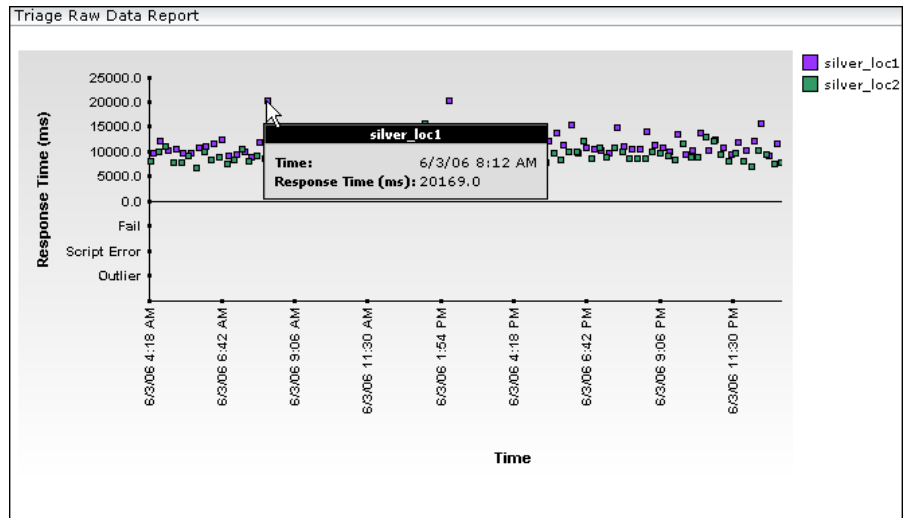
The Triage Raw Data report displays data for the first transaction and its locations, for the first profile on the list. (Click the **Profile** link to view the list of profiles.)

- ▶ Drill down from the Triage report (when the Triage Raw Data report opens in a new window).

The Triage Raw Data report displays data for the transactions and locations selected in the Triage report.

To work with the Triage Raw Data report:

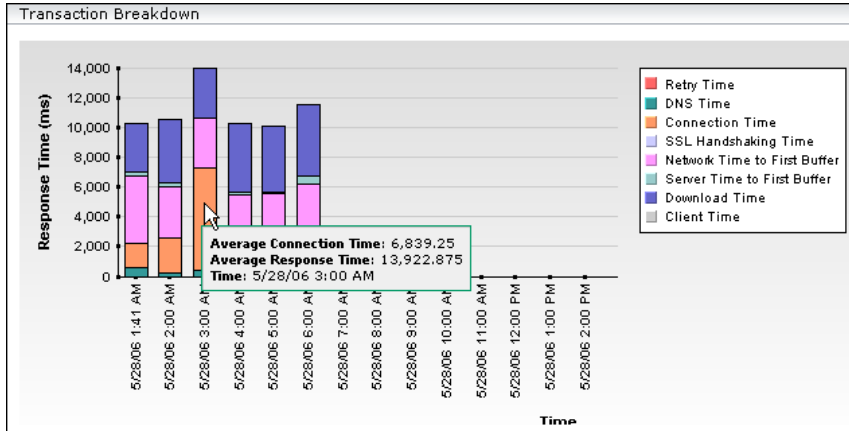
- 1 To view a tooltip showing time and response time, hold the pointer over a data point.



Failed transactions, script errors, and outlier data are shown below the raw data graph. To view a tooltip showing time and status, hold the pointer over a data point.

- 2 To verify location names, use the legend next to the table.

- 3 To view transaction breakdown data, scroll down to the Transaction Breakdown section. Each column in the Transaction Breakdown graph shows the average response time for all the transactions displayed in the Triage Raw Data report above, for a specific time. This graph enables you to verify, for example, that at 3:00 AM a problem arose with the network.



Time granularity is defined as follows: on a time scale of 24 hours, points are displayed for each hour. On a time scale of one hour, points are displayed for each ten minutes. For a discussion of transaction breakdown, see “Understanding the Transaction Breakdown Reports” on page 176.

- 4 To view data for each period, hold the cursor over a column.
- 5 To verify breakdown categories, use the legend next to the table.
- 6 To view a table of errors that occurred during a profile run, over a specified time period, for the selected transaction and locations, scroll down to the Error Log section. The Error Log table includes detailed information about errors as follows:
 - **Time.** The time that the error occurred.
 - **Category.** Categories can be HTTP, General, Content, and Script.
 - **Type.** A description or code of the error that occurred during script execution.
 - **Transaction.** The name of the transaction that is in error.
 - **Location.** The name of the location of the transaction that is in error.

- **Script.** The name of the script in which an error occurred.
- **File name.** The name of the file in the script directory containing the script steps that were running when the error occurred.
- **Error line.** The line in the file referenced in the File Name column at which the error occurred.
- **Error Message.** The error message that HP Business Availability Center generates at the time of the error. If there is a partial message, point to it to view a tooltip with the full message. **Note:** For user-defined errors (error type -17999), HP Business Availability Center displays the user message.
- **Actions.** For details on viewing and downloading snapshots, see “Snapshot on Error” on page 172. These buttons are enabled if the original Business Process Monitor script is configured to save snapshots. For details, see “Advanced Configuration Options” in the *Business Process Monitor Administration* PDF.
 - To view more errors, click the **Next page** or **Last page** buttons.
 - To view previous errors in the list, click the **Previous page** or **First page** buttons.

To modify the report view:

- 1** Select a new time range or granularity. For details, see “Choosing the Time Range and Granularity” in *Reference Information*.
- 2** Choose a different profile from the profile list.
- 3** To view the report filtered by a specific transaction, apply active filters by clicking the **Active Filters** link, and selecting another transaction. Note that you can select one transaction only to view in this report. For details on using Active Filters, see “Filtering Individual Reports” on page 148.
- 4** To display the Triage Raw Data report again, click **Generate**.

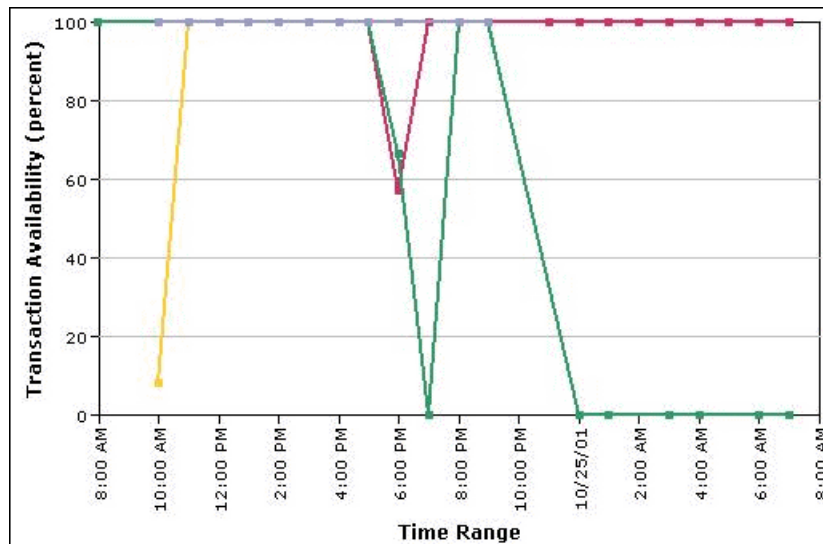
Incorporating a Triage Raw Data Report in a Custom Report

You can create a custom report from a Triage Raw Data report. Create a report, choose the Triage Report component, and select the Triage Raw Data report in the Add Component window. For details, see “Adding a Component to a Report” in *Custom Reporting and Alerting*.

Availability Over Time Report

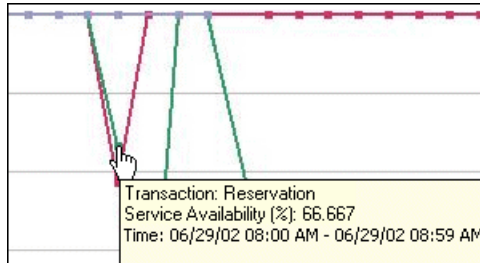
The Availability Over Time report displays the percentage of successful transactions performed by all hosts in a profile—organized by transaction, location, or group—over time. The report can be viewed in either graph or table format.

The Availability Over Time report helps you identify service availability problems and pinpoint their source. By breaking down the report by transaction, location, or group across different time frames, you can identify exactly where and when transaction failure rate is significant. For example, you determine that a transaction regularly fails during a particular time of day, which may indicate a problem with the transaction during periods of high Internet traffic.



Working with the Availability Over Time Report

- To view details about transaction availability at that point in time, place the cursor over any data point to display a tooltip containing information.

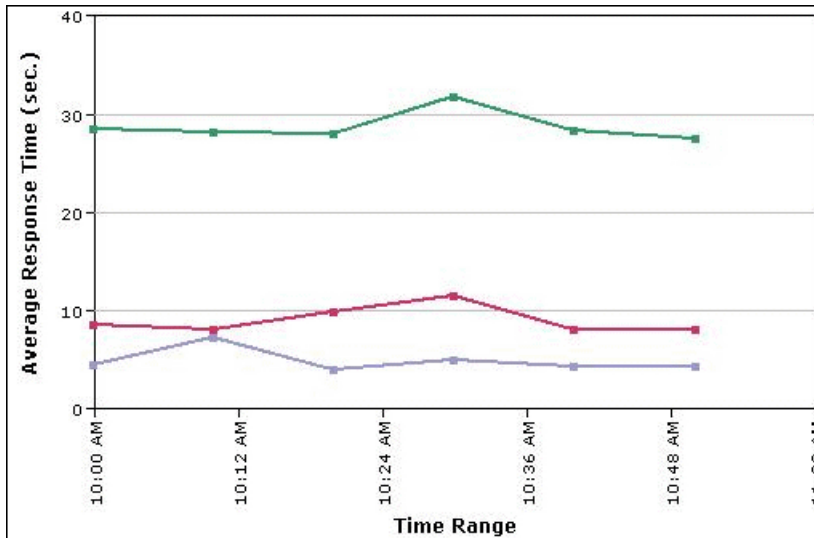


- To view the data in table format, click the **View as Table** tab.
The table displays service availability for the selected time frame, broken down by transaction, location, or group.
To focus on a specific time frame, transaction, location, or group, drill down in the table view. Click any link in a column or row header.
- To modify the report view, select **Transactions**, **Locations**, or **Groups** from the report view list, and click **Generate** to display the success rate of each transaction at each location, and for each group, across the selected time frame.
- To change the report time frame, use the **From** and **To** fields and the left and right arrows. Click **Generate** to generate the modified report.
- To change the active filters, click the **Active Filters** link, and select or clear check boxes, to view the report filtered by specific transactions, locations, or groups. Click **Generate** to generate the modified report.
- To increase the time resolution for the selected transaction, location, or group, drill down in the graph view and click any time point in the graph.
- To focus on a specific transaction, location, or group, click any drill down link to the right of the report.

Response Time Over Time Report

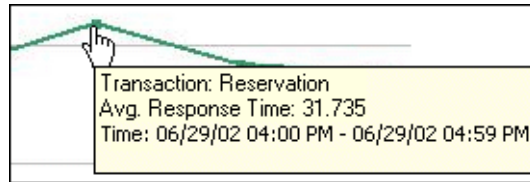
The Response Time Over Time report displays the average response times (in seconds) of completed transactions—organized by transaction, location, or group—over time. The report can be viewed in either graph or table format.

The Response Time Over Time report helps you identify response time problems and pinpoint their source. By breaking down the report by transaction, location, or group across different time frames, you can identify exactly where and when average transaction response times are too slow. For example, you might determine that a specific transaction's average response time is always higher on a certain day of the week, but only from a particular location. This might indicate a problem with the Internet Service Provider for that location during high Internet traffic periods.



Working with the Response Time Over Time Report

- To view a tooltip containing details about the average response time of all completed transactions performed by hosts at the time period corresponding to that point, place your cursor over any data point.



- To view the data in table format, click the **View as Table** tab.
The table displays service availability for the selected time frame, broken down by transaction, location, or group.
- To focus on a specific time frame, transaction, location or group, drill down in the table view. Click any link in a column or row header.
- To modify the report view, select **Transactions**, **Locations**, or **Groups** from the report view list, and click **Generate** to display the success rate of each transaction at each location or for each group, across the selected time frame.
- To change the report time frame, use the **From** and **To** fields and the left and right arrows. Click **Generate** to generate the modified report.
- To change the active filters, click the **Active Filters** link, and select or clear check boxes, to view the report filtered by specific transactions, locations, or groups. Click **Generate** to generate the modified report.
- To increase the time resolution for the selected transaction, location, or group, drill down in the graph view and click any time point in the graph.
- To focus on a transaction, location, or group, click any drill down link to the right of the report.

Transaction Analysis Report

The Transaction Analysis report provides an in-depth picture of the performance of transactions. The report enables you to understand, for the selected profile and defined time frame:

- ▶ the average response times of your transactions over time
- ▶ whether poor transaction response times are being caused by network or server problems, or by client delays
- ▶ the availability level of your transactions
- ▶ how well your transactions performed relative to set transaction thresholds

Note: The Transaction Analysis report can be printed, sent by e-mail and exported to a Microsoft Excel file format. It cannot be exported to the .pdf format. For details about the formats it can be exported to, see “Sharing and Storing Reports” in *Reference Information*.

Generating the Transaction Analysis Report and Sub-Reports

When you generate the Transaction Analysis report initially, the Performance Matrix is displayed. To analyze data for a specific time period or transaction, click a transaction, date, or cell within the main report. End User Management generates the sub-reports.

The Transaction Analysis report consists of the following components:

Report Category	Report Name	Description
Main report	Performance Matrix	Displays a color-coded representation of average transaction response times and failed transactions, over time. For details, see “Performance Matrix Report” on page 216.
Sub-reports	Average Response Times Over Time	Displays average response times of successful transactions, over time. For details, see “Response Time Over Time Report” on page 164.
	Transaction Breakdown Over Time	Displays a breakdown of average transaction response times, over time. For details, see “Breakdown Over Time Report” on page 193.
	Service Availability Over Time	Displays the percentage of successful transactions performed by all hosts in a profile, over time. For details, see “Availability Over Time Report” on page 162.
	Overall Transaction Performance	Displays, for each transaction, the number and percentage of transaction instances whose response time falls into the OK, Minor, and Major threshold ranges. In addition, displays the number and percentage of transaction instances that failed and how many of the failed instances are outliers. For details, see “Overall Quality of Service” on page 214.
	Error Details	Displays a detailed list of transaction file errors that occurred while the selected Business Process profile ran during the specified time period. For details, see “Failed Transactions Report” on page 170.

Error Summary Report

The Error Summary report provides detailed tables—organized by error type—of errors that occurred during a profile run, over the specified time period. Since not all errors cause transactions to fail, the Error Summary report includes errors for transactions that completed successfully as well as transactions that failed. The report also lists outlier transactions.

End User Management displays the following errors in the Error Summary page:

- ▶ **HTTP Errors.** Web server errors (for example, Error 404). These errors occur when the Web server indicates that it cannot respond to requests sent by the data collector.
- ▶ **Context Errors.** Errors in the context of the response generated for a request sent by a data collector (for example, an expected text or image that is not found).
- ▶ **General Errors.** All other error types.
- ▶ **Script Errors.** Transaction errors displayed in the Triage report. For details, see “Triage Report” on page 220.

Note: You can instruct HP Business Availability Center to display errors in either the HTTP Errors or Context Errors table, that by default appear in the General Errors table. For details, see “Modifying the Table in Which Errors Appear” on page 174.

For each error that occurs, End User Management displays the following information:

- ▶ **Error Type.** A description or code of the error that occurred during script execution. Click the link to generate the Failed Transactions report. **Note:** The error code -17999 represents user-defined errors—errors defined in HP Virtual User Generator using the `lr_error_message` function.
- ▶ **Failed/Total Measurements.** The number of transaction instances that failed due to the error, out of the total number of transaction instances that occurred during the specified time period.

- **Transactions/Total.** The number of defined transactions that caused the error, out of the total number of transactions defined in the profile.
- **Locations/Total.** The number of locations from which errors occurred, out of the total number of locations from which scripts ran.

This section includes the following topics:

- “Working with the Error Summary Report” on page 169
- “Outlier Transactions” on page 169
- “Failed Transactions Report” on page 170
- “Failed Transactions Report Filter” on page 171
- “Snapshot on Error” on page 172
- “Modifying the Table in Which Errors Appear” on page 174

Working with the Error Summary Report

For each error type, you can:

- Drill down to the Failed Transactions report. For details, see “Failed Transactions Report” on page 170.
- Move errors displayed in the General Errors table to other error tables. For details, see “Modifying the Table in Which Errors Appear” on page 174.

Outlier Transactions

The Outlier Transactions table provides information about the number of transactions that exceed their outlier value during a profile run. HP Business Availability Center classifies transactions as outliers if they are not completed within a specified time range. You set the outlier value in a profile’s properties, in the Transaction Threshold settings. For details, see “Transaction Threshold Settings” on page 106.

End User Management provides the following information:

- **Outlier Total/Total Measurements.** The number of outlier transaction instances, out of the total number of transaction instances that occurred during the specified time period.
- **Outlier Transactions/Total.** The number of defined transactions that exceeded their outlier value, out of the total number of transactions defined in the profile.
- **Outlier Locations/Total.** The number of locations from which transactions exceeded their outlier value, out of the total number of locations from which scripts ran.

Failed Transactions Report

The Failed Transactions report displays details about errors that occur during a script run. You also access the Snapshot on Error feature from the Failed Transaction report.

To generate the Failed Transactions report from the Error Summary report, click an error message in the Error Type column.

The Failed Transactions report provides some of the following information:

- **Time.** The time and date at which the error occurred. If the report uses aggregated data, HP Business Availability Center displays the time as a link. Click the link to drill down to the time interval information until the raw error data is displayed, which includes Snapshot on Error information, if available. For details, see “Snapshot on Error” on page 172.
- **Transaction.** The transaction for which the error occurred.
- **Location.** The location at which the error occurred.
- **Script.** The name of the script containing the transaction for which the error occurred.
- **File name.** The name of the file in the script directory containing the script steps that were running when the error occurred.
- **Error line.** The line in the file referenced in the File Name column at which the error occurred.

- **Message.** The error message that HP Business Availability Center generated at the time of the error. If there is a partial message, point to it to view a tooltip with the full message. **Note:** For user-defined errors (error type - 17999), HP Business Availability Center displays the user message.
- **Snapshot.** A link that opens a window containing a snapshot of the application, as it would have been seen by a real user at the time of the error. A link that enables you to download the snapshot, in zipped format. For details, see “Snapshot on Error” on page 172.

Note: The following columns are not displayed when the Failed Transactions report uses aggregated data: File Name, Error Line, Snapshot. For details on data aggregation in HP Business Availability Center, see “Data Aggregation” in *Reference Information*.

You can also generate a Failed Transaction report from:

- The Transaction Analysis and Location Analysis reports. The report appears as a sub-report called Error Details. For details, see “Transaction Analysis Report” on page 166 and “Location Analysis Reports” on page 175.
- The Breakdown Summary report. Click the red **X** in the Errors column.

Failed Transactions Report Filter

When generated from the Error Summary report, the Failed Transactions report displays the **Display errors of this type only** option. If left selected, the report displays errors of the specified type (corresponding to the error type that was chosen in the Error Summary report). If cleared, upon report regeneration the report displays all error types. Note that once this option is cleared it cannot be reselected (to view a filtered report again, you must close the window and click a link in the Error Summary report again).

Snapshot on Error

When recording scripts with HP Virtual User Generator or QuickTest Professional (QTP), you can enable the Snapshot on Error option. For details, see below. Once enabled, during a script run HP Business Availability Center saves a snapshot of a page as it appears when an error occurs during the script run.

HP Business Availability Center supports Snapshot on Error for the following HP Virtual User Generator protocols:

- ▶ **Web protocols.** Oracle Web Applications 11i, PeopleSoft Enterprise, SAP-Web, Siebel-Web, and Web (HTTP/HTML).
- ▶ **Non-Web protocols.** Citrix_ICA, SAPGUI.

You can access the recorded snapshot from the Failed Transaction report. There are two ways to access the snapshot:



- ▶ Click the **View Snapshot** button to display the screen that is saved at the time of error. For Web protocols, the snapshot opens a new browser window and displays a page built from the HTML code that is saved at the time of error. Page resources, such as images, are displayed by linking to the original Web site—resources are not saved by HP Business Availability Center. For non-Web protocols, an image is displayed in the browser window.



- ▶ Click the **Download Snapshot** button to download the snapshot in zipped format to a local or network drive. This method is recommended for viewing the actual HTML code of the saved page, for example, if the HTML code contains scripts which can be harmful if run. For Web protocols, to view the snapshot in a browser after unzipping it, you may need to add the BASE element to the HTML code specifying the original URL of the recorded Web site. This is necessary to see page resources if the original HTML page did not contain a BASE element. In addition, you may need to add the original URL to other HTML elements such as anchor tags and image source tags.

Note: When HP Business Availability Center records a snapshot for scripts recorded using one of the Web protocols, it saves only HTML code. Resources such as images and JavaScript are not saved. Thus, errors that occur due to missing resources may be difficult to trace later on from the snapshot, especially in cases where the missing resource problem has been fixed. For example, if an image resource is missing during a script run, causing an error to be recorded, but the missing image problem is later fixed, the image will be present when you open the snapshot of the page.

To enable the generation of snapshots when an error occurs in HP Virtual User Generator:

- 1** In the HP Virtual User Generator Run-Time Settings dialog box, select the **General: Miscellaneous** node.
- 2** In the Error Handling section, check that **Generate snapshot on error** is selected.
- 3** Click **OK** to close the Run-Time Settings dialog box.

To enable the generation of snapshots when an error occurs in QuickTest Professional:

- 1** In the Options dialog box, select the **Run** tab.
- 2** In the **Save step screen capture to results** box, select **On errors**.
- 3** Click **OK** to close the Options dialog box.

For additional information, see “Configuring Snapshot on Error” in the *Business Process Monitor Administration* PDF.

Modifying the Table in Which Errors Appear

By default, HP Business Availability Center displays errors in the General Errors table. You can change this configuration so that the errors are moved to one of the other error tables.

To modify the table in which errors appear:

- 1 Locate the following file on the Gateway Server: **<HP Business Availability Center root directory>\AppServer\resources\TransactionError.properties**
- 2 Locate the error message in this file that you want to move to the Context or HTTP Errors table.
- 3 Copy the value at the beginning of the row. For example, to add the error “The requested image not found” to the Context Errors table, locate:

```
-27987=The requested image not found
```

Copy **-27987**.

- 4 Locate the following file on the Gateway Server: **<HP Business Availability Center root directory>\conf\settings\diagnostics.xml**.
- 5 Search for the string:

```
# The two following settings define contents of sections "Context Errors" and "HTTP Errors"
```

- 6 To list the error in the Context Errors table, locate the value list for the Context Errors setting.

To list the error in the HTTP Errors table, locate the value list for the HTTP Errors setting.

- 7 Paste the error code that you copied from the **TransactionError.properties** file into the value list, separating entries with commas. For example, if you copied **-27987** to the Context Errors setting, the value list appears as follows:

```
<value type="string">  
-27987,-27979,-27730,-27729,-27195,-27190,-27187,-27127  
</value>
```

- 8 Save the **diagnostics.xml** file.

Location Analysis Reports

The Location Analysis report provides an in-depth picture of the performance of locations. The report enables you to understand, for the selected profile and defined time frame:

- ▶ the average response times of your transactions over time for each location in the profile
- ▶ how well your locations performed relative to the set transaction thresholds

Generating the Location Analysis Report and Sub-Reports

When you generate the Location Analysis report, HP Business Availability Center displays the Performance Matrix. To analyze data for a specific time period or transaction, click a location, date, or cell within the main report. HP Business Availability Center generates the sub-reports.

The Location Analysis report consists of the following components:

Report Category	Report Name	Description
Main report	Performance Matrix	Displays, over the defined time range, average response times of successful transactions for each location in the selected profile. For details, see “Performance Matrix Report” on page 216.

Report Category	Report Name	Description
Sub-reports	Average Response Time Over Time	Displays, for the selected location(s), average response times of successful transactions, over time. For details, see “Response Time Over Time Report” on page 164.
	Overall Location Performance	Displays, for each location, the number and percentage of transaction instances whose response times fell into the OK, Minor, and Critical threshold ranges. In addition, displays the number and percentage of transaction instances that failed and how many of the failed instances were outliers. For details, see “Location Performance” on page 210.
	Error Details	Displays a detailed list of script errors that occurred while the selected Business Process Monitor profile ran during the specified time period. For details, see “Failed Transactions Report” on page 170.

Understanding the Transaction Breakdown Reports

The transaction breakdown reports help you determine whether poor transaction response times are caused by network or server problems, or by client delays, and to pinpoint exactly when the problems are occurring. Transaction Breakdown reports display Business Process Monitor data collected by scripts recorded using the Web (HTTP/HTML) protocol, or specific non-Web based TCP protocols.

For details on the transaction breakdown reports, see “Breakdown Over Time Report” on page 193 and “Breakdown Summary Report” on page 196. The Triage report also includes a transaction breakdown. For details, see “Triage Report” on page 220.

This section includes the following topics:

- “Understanding Web Based Transaction Breakdown Reports” on page 177
- “Understanding Non-Web Based TCP Transaction Breakdown Reports” on page 182

Understanding Web Based Transaction Breakdown Reports

The Web based protocols for which Business Process Monitor can perform transaction breakdown are configured in the **BdSupportedProtocols** setting in the **agent1.cfg** file on the Business Process Monitor machine. For details on the agent1.cfg file, see “Business Process Monitor Configuration Files” in the *Business Process Monitor Administration* PDF. If a script for which Business Process Monitor is configured to collect transaction breakdown data contains multiple protocols, Web based breakdown is used providing one of the protocols is a Web based protocol that is included in the **BdSupportedProtocols** configuration setting.

Note: Transaction breakdown is not supported by Business Process Monitors running scripts recorded in wininet mode in HP Virtual User Generator.

This section includes the following topics:

- “Understanding How HP Business Availability Center Breaks Down Transaction Response Times” on page 178
- “Understanding Transaction Breakdown Categories” on page 178
- “Understanding Download Time” on page 182

Understanding How HP Business Availability Center Breaks Down Transaction Response Times

When HP Business Availability Center runs a Business Process Monitor script and measures response time for a specific transaction, HP Business Availability Center collects breakdown data—information about network/server activity during the transaction—for each component of every Web page accessed in the transaction.

Because HP Business Availability Center runs the script over multiple connections (in the same way a browser does when you access any URL), at any given moment in time there is typically an overlap in the various breakdown categories.

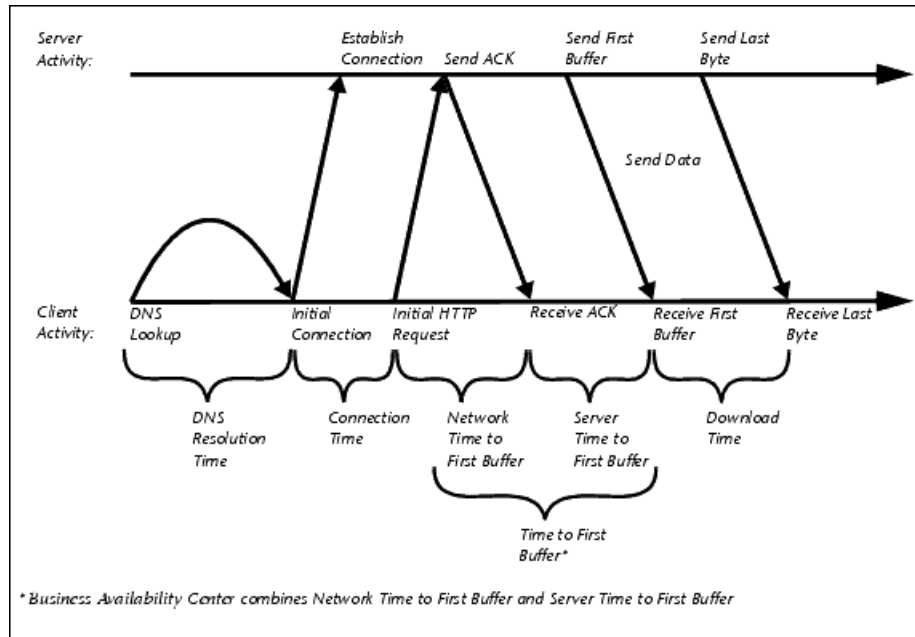
HP Business Availability Center uses a weighted algorithm to display the breakdown data that it collects. Every breakdown category for every element of the Web page is taken into consideration, and weight is given to the element according to its value relative to the other elements in the concurrent time period. For example, the DNS time for each element of the Web page is collected, weighted, and then displayed under the DNS time category.

Understanding Transaction Breakdown Categories

The transaction breakdown reports display a breakdown of average transaction response times (in milliseconds) over time, for the selected time frame. Response times are broken down by retry time, DNS resolution time, connection time, network time to first buffer, server time to first buffer, download time, and client time. If your site uses SSL authentication, SSL handshaking time appears in the chart after connection time.

The diagram below illustrates the relationship between the report's main breakdown categories (shown along the bottom of the diagram) and client/server activity during transaction execution.

Note that retry time, SSL handshaking time, and client time are not shown in this diagram. They are described in the breakdown category table. For details, see “DNS Resolution” on page 180.



The following table describes the report's breakdown categories. Times are calculated by taking the average of all transaction runs within the specified time period.

Name	Description
Retry Time	Displays the overall amount of time that passes from the moment an HTTP request is started until the moment an HTTP or TCP error message is returned. Retry time only relates to HTTP or TCP errors that execute a retry after the error.
DNS Resolution	Displays the average amount of time needed to resolve the DNS name to an IP address, using the closest DNS server. The DNS Lookup measurement is a good indicator of slow DNS resolution or other problems with the DNS server.
Connection Time	Displays the average amount of time needed to establish an initial connection with the Web server performing the transaction. The connection measurement is a good indicator of problems along the network or whether the server is responsive to requests.
SSL Handshaking Time	Displays the average amount of time taken to establish an SSL connection (includes the client hello, server hello, client public key transfer, server certificate transfer, and other—partially optional—stages). After this point, all the communication between the client and server is encrypted. Note: The SSL handshaking measurement is only applicable for HTTPS communications.
Network Time to First Buffer	Displays the average amount of time that passes from the moment the first HTTP request is sent until receipt of ACK. The network measurement is a good indicator of network quality (look at the time/size ratio to calculate download rate).

Name	Description
Server Time to First Buffer	<p>Displays the average amount of time that passes from the receipt of ACK of the initial HTTP request (usually GET) until the first buffer is successfully received back from the Web server. The server time to first buffer measurement is a good indicator of Web server delay.</p> <p>Note: Because server time to first buffer is being measured from the client, network time may influence this measurement if there is a change in network performance from the time the initial HTTP request is sent until the time the first buffer is sent.</p>
Download Time	<p>Displays the time from the receipt of the first buffer until the last byte arrives.</p> <p>Download time is a combination of server and network time, since the server typically sends data over multiple connections, and therefore is usually working while data is being transmitted over the network. For more details, see “Understanding Download Time” on page 182.</p>
Client Time	<p>Displays the average amount of time that passes while a request is delayed on the client machine. Client-related delays can include browser think time, CPU think time, HTML page processing time, time needed to open sockets, application delays caused by heavy applets, and so on.</p> <p>Note: Client time is calculated by subtracting all other measured times from the total transaction time.</p>

Note: In certain circumstances, for example, when the Business Process Monitor is using a proxy server, the transaction breakdown mechanism cannot differentiate between server time to first buffer and network time to first buffer. In these cases, the report displays the time between initial HTTP request and receipt of first buffer as Time to First Buffer.

Understanding Download Time

When a Business Process Monitor running a script communicates with a Web server (specified by the URL(s) in the script), communication is carried out, by default, over four connections simultaneously.

As the Web page is retrieved, its various components (images, applets, and so on) travel in data packets from server to client across these multiple connections.

As a result, at any point along the time line after the server sends the first buffer until the client receives the last byte for the page, data packets may be traveling over the network through some of the connections while others are being processed by the server through the remaining connections. The download time in the report represents the sum total of the time when network resources and server resources are in use at the same time, between the time the client receives the first buffer and the last byte.

Understanding Non-Web Based TCP Transaction Breakdown Reports

The non-Web based (TCP) protocols for which Business Process Monitor can perform transaction breakdown are configured in the **AdvancedTcpBdSupportedProtocols** setting in the **agent1.cfg** file on the Business Process Monitor machine. For details on the agent1.cfg file, see “Business Process Monitor Configuration Files” in the *Business Process Monitor Administration* PDF. If a script for which Business Process Monitor is configured to collect transaction breakdown data contains multiple

protocols, TCP breakdown is used providing one of the protocols is a non-Web based protocol that is included in the **AdvancedTcpBdSupportedProtocols** configuration setting and none of the protocols is a Web based protocol that is included in the **BdSupportedProtocols** configuration setting (in which case Web based breakdown is used).

Note:

- ▶ Non-Web based (TCP) transaction breakdown is supported on Windows only.
 - ▶ Supported protocols must be TCP request/response based protocols.
 - ▶ Non-Web based (TCP) transaction breakdown cannot be used with VuGen Speed Simulation.
-

This section includes the following topics:

- ▶ “Understanding How HP Business Availability Center Breaks Down Transaction Response Times” on page 184
- ▶ “Understanding Transaction Breakdown Categories for Non-Web Based (TCP) Transactions” on page 184
- ▶ “Understanding Time to First Buffer and Download Time for Non-Web Based (TCP) Transactions” on page 189
- ▶ “Understanding Breakdown Report Data for Non-Web Based (TCP) Transactions” on page 189
- ▶ “Notes and Limitation for Non-Web Based (TCP) Protocols” on page 190

Understanding How HP Business Availability Center Breaks Down Transaction Response Times

When HP Business Availability Center runs a Business Process Monitor script and measures response time for a specific transaction, HP Business Availability Center collects breakdown data—information about TCP activities during the transaction—for each request (component) of the transaction. A TCP request (component) represents a sequence of measurements starting with a DNS resolution, TCP Connect operation, or a Send operation on an open connection and ending with the last Receive operation for the relevant starting operation.

Because some TCP based protocols can use multiple connections, at any given moment in time there can be an overlap in the various breakdown categories.

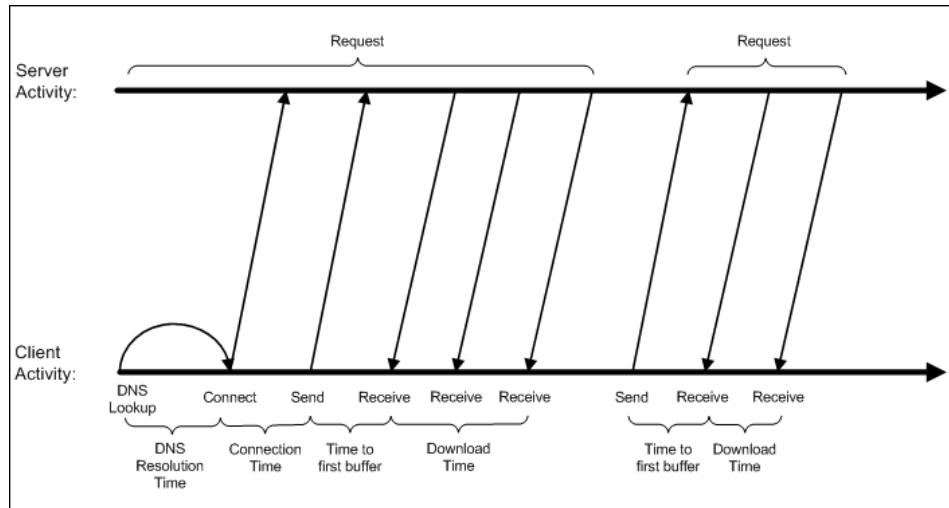
HP Business Availability Center uses a weighted algorithm to display the breakdown data that it collects. Every breakdown category for every element of the connection requests is taken into consideration, and weight is given to the element according to its value relative to the other elements in the concurrent time period. For example, the Connect time for each request in the connection is collected, weighted, and then displayed under the Connect time category.

Understanding Transaction Breakdown Categories for Non-Web Based (TCP) Transactions

The transaction breakdown reports display a breakdown of average transaction response times (in milliseconds) over time, for the selected time frame. Response times are broken down by DNS resolution time, connection time, network time to first buffer, server time to first buffer, download time, and client time.

The diagram below illustrates the relationship between the report's main breakdown categories (shown along the bottom of the diagram) and TCP client/server activity during transaction execution. In the diagram, there are two sequential TCP requests included in the same connection.

Note that client time is not shown in this diagram and is described in the breakdown category table. For details, see “Client Time” on page 188.



The following table describes the report's breakdown categories, which comprise a TCP request. Times are calculated by taking the average of all transaction runs within the specified time period.

Name	Description
DNS Resolution	<p>Displays the average amount of time needed to resolve the DNS name to an IP address, using the closest DNS server. The DNS Lookup measurement is a good indicator of slow DNS resolution or other problems with the DNS server.</p> <p>Note: If the DNS resolution is adjacent to a Connect for the same IP address, it is considered part of the request (component) and its time is displayed in the breakdown reports. Otherwise, the DNS resolutions of one or more hosts without an adjacent Connect are considered as a separate request (component). In such cases, only the DNS Resolution time is displayed for that request and for all other measurements, a minus sign (-) is displayed.</p>
Connection Time	<p>Displays the average amount of time needed to establish an initial connection with the TCP server performing the transaction. The connection measurement is a good indicator of problems along the network or whether the server is responsive to requests.</p> <p>Note: If a connection did not occur within a requests's (component's) context, a minus sign (-) is displayed for the connection time in the breakdown reports.</p>

Name	Description
Time to First Buffer	<p>Displays the average amount of time that passes from the first TCP Send, up to and including the first Receive of a component.</p> <p>This measurement includes both network time and server time that are required for handling the first TCP buffer and therefore, it is a good indicator of both network quality and server delay.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ This measurement is only shown if both Sends and Receives are included in the request (component). ▶ If there are no Sends or Receives within a request (component), a minus sign (-) is displayed in the breakdown reports.
Network Time to First Buffer	<p>Displays the time from the first Send up to and including the last Send. This measurement is a good indicator of network quality.</p> <p>Note: This measurement is only shown if there are Sends included in the request (component), but no Receives.</p>
Server Time to First Buffer	<p>This measurement is only shown if there are Sends included in the request (component), but no Receives. A minus sign (-) is displayed in the breakdown reports.</p>

Name	Description
Download Time	<p>Displays the time from the receipt of the second TCP buffer up to and including receipt of the last byte.</p> <p>Download time usually only includes network time and will be influenced by both network quality and component size.</p> <p>For more details, see “Understanding Time to First Buffer and Download Time for Non-Web Based (TCP) Transactions” on page 189.</p> <p>Note: If a download did not occur within a request’s (component’s) context, a minus sign (-) is displayed for the download time in the breakdown reports.</p>
Client Time	<p>Displays the average amount of time that passes while a request is delayed on the client machine. Client-related delays can include CPU think time, processing time, time needed to open sockets, time between the last Receive of a request and the first Send of the next request in the same connection, and so on.</p> <p>Note: Client time is calculated by subtracting all other measured times from the total transaction time.</p>

Note: Either Time to First Buffer or Network Time to First Buffer and Server Time to First Buffer are displayed.

Understanding Time to First Buffer and Download Time for Non-Web Based (TCP) Transactions

Time to First Buffer includes both network time (for sending the packet) and server time (for processing the packet), whereas Download time usually includes only network time (for downloading the rest of the reply packets). This means that if both Time to First Buffer and Download times increase, it is a good indicator of network quality problems and if only Time to First Buffer increases, it is usually a good indicator of server delay problems.

Understanding Breakdown Report Data for Non-Web Based (TCP) Transactions

The same breakdown reports are used to display Web based breakdown data and non-Web based (TCP) breakdown data, but the following differences apply when viewing non-Web based (TCP) breakdown data:

- ▶ The **Page** column (which displays page names for Web based transactions) is not applicable for non-Web based transactions and a minus sign (-) is displayed in this column for all non-Web based components.
- ▶ The **Retry Time** and **SSL Handshake Time** columns are not applicable for non-Web based transactions and a minus sign (-) is displayed in these columns for all non-Web based components.
- ▶ In the **Component/Request** column (which displays URLs for Web based breakdown data), the name of the TCP request (component) is displayed. The name can be one of the following:
 - ▶ **TCP_BdwnDns<nnn>**. For DNS only components (for example, a DNS component that does not have an adjacent Connect component correlated to the same IP address). The number in the display is sequentially incremented for each component entry. For such entries, only the DNS Resolution time is displayed and for all other measurements, a minus sign (-) is displayed.
 - ▶ **TCP_BdwnReq<nnn>**. For TCP request components. The number in the display is sequentially incremented for each component entry.
- ▶ For non-Web based (TCP) components, there is no tooltip available for the **Page** column.
- ▶ You cannot click on a non-Web based (TCP) component to drill down to further information about it.

Notes and Limitation for Non-Web Based (TCP) Protocols

The following table lists the TCP protocols for which breakdown data can be displayed, together with special notes and limitations where applicable:

Protocol	Notes and Limitations
SAP GUI	Multi-threaded protocol.
SMTP	N/A
POP3	The communication in a POP3 script usually starts with a server's greeting message. Consequently, the first TCP breakdown component (request) in the script is usually reported with valid DNS and Connect times, whereas the Download time is reported as 0 and all other time measurements are not applicable and are shown with a minus (-) sign in the reports.
IMAP	The communication in an IMAP script usually starts with a server's greeting message. Consequently, the first TCP breakdown component (request) in the script is usually reported with valid DNS and Connect times, whereas the Download time is reported as 0 and all other measurements are not applicable and are shown with a minus (-) sign in the reports.
Oracle 2-Tier	Some of the steps in an Oracle 2-Tier script end with data being sent by the client, without receiving any response. Consequently, there are TCP breakdown components reported with a Network Time to First Buffer value ≥ 0 and with all other measurements not applicable and shown with a minus (-) sign in the reports.
ODBC	N/A
FTP	Both FTP passive and FTP active modes are supported.
LDAP	The last step in an LDAP script (which terminates the connection to the server) usually ends with data being sent by the client, without receiving any response. Consequently, there is a corresponding TCP breakdown component reported with a Network Time to First Buffer value ≥ 0 and with all other measurements not applicable and shown with a minus (-) sign in the reports.

Protocol	Notes and Limitations
EJB	Multi-threaded protocol.
RMI Java	<ul style="list-style-type: none"> ▶ Multi-threaded protocol. ▶ Both RMI over IIOP and RMI over JRMP are supported. ▶ Some Java applications which use the RMI protocol send many ping requests between application-driven RMI calls. Consequently, the TCP breakdown reports many components with a small Time to First Buffer value and with a Download size of approximately 1 byte. ▶ The last step in an RMI script (which terminates the connection to the server) sometimes ends with data being sent by the client, without receiving any response. Consequently, there is a corresponding TCP breakdown component reported with a Network Time to First Buffer value ≥ 0 and with all other measurements not applicable and shown with a minus (-) sign in the reports.

Protocol	Notes and Limitations
Java Record/Replay	<ul style="list-style-type: none"> ▶ This is a new protocol added in VuGen 9.0 which supports and combines the following Java protocols—RMI, CORBA, JMS, JACADA, and Custom Hooks. TCP breakdown is supported only when the script is recorded using RMI protocol calls. If the script includes other protocol calls, TCP breakdown results are not defined. ▶ Multi-threaded protocol. ▶ Both RMI over IIOP and RMI over JRMP are supported. ▶ Some Java applications which use the RMI protocol send many ping requests between application-driven RMI calls. Consequently, the TCP breakdown reports many components with a small Time to First Buffer value and with a Download size of approximately 1 byte. ▶ The last step in a Java Record/Replay script (which terminates the connection to the server) sometimes ends with data being sent by the client, without receiving any response. Consequently, there is a corresponding TCP breakdown component reported with a Network Time to First Buffer value ≥ 0 and with all other measurements not applicable and shown with a minus (-) sign in the reports.
Oracle NCA	<p>If the script works over HTTP communications, you can run it using Web breakdown (which is the default).</p> <p>If the protocol is run using TCP socket communications instead of HTTP, Web breakdown is not applicable and you can run it using TCP breakdown instead, providing that:</p> <ul style="list-style-type: none"> ▶ the script is recorded in such a way so that the Active Types with which the script is recorded are Oracle NCA only (that is, the script does not include WEB(HTTP/HTML)). ▶ you move the Oracle NCA protocol from the BdSupportedProtocols list to the AdvancedTcpBdSupportedProtocols list in the agent1.cfg file on the Business Process Monitor machine.

Breakdown Over Time Report

Note: This section is applicable to Web based transactions. For the differences in breakdown reports for non-Web based (TCP) transactions, see “Understanding Breakdown Report Data for Non-Web Based (TCP) Transactions” on page 189.

The Breakdown Over Time report helps you determine whether poor transaction response times are being caused by network or server problems, or by client delays, and enables you to pinpoint exactly when the problems are occurring. Using the time range selector and active filters, you can highlight the exact time and source of a poorly performing transaction.

For information on the breakdown categories used in the report, see “Understanding Transaction Breakdown Categories” on page 178.

This section contains the following topics:

- ▶ “Working with Breakdown Over Time Report Data” on page 193
- ▶ “Correlating Breakdown Over Time Report Data with Other HP Business Availability Center Reports” on page 195

Working with Breakdown Over Time Report Data

The Breakdown Over Time report’s color-coded graph enables you to quickly differentiate between retry time, DNS resolution time, connection time, SSL handshaking time (if relevant), network time to first buffer, server time to first buffer, download time, and client time.

You can cross-reference data for a specific transaction from the Breakdown Summary report with Breakdown Over Time report data (use active filters to isolate the specific transaction) to quickly spot the time of day at which a problem is occurring. Once you have ascertained the time at which the problem is occurring, you determine whether the problem is being caused by network, server, or client delays. Depending on the source of the delay, you then view additional reports to isolate the root-cause of the problem.

For example, you might use the Breakdown Summary report to determine that download time is higher than usual for a transaction named Search_Flights. You could generate the Breakdown Over Time report, filtered to the transaction Search_Flights, to determine the exact hour at which download time was slow. You could then view the WebTrace report for the same time period to determine whether there were problems with the network during this time period. In addition, if you are monitoring your servers using SiteScope monitors, you could check server performance during the same time period.

Alternatively, you can use the Breakdown Over Time report to spot ongoing or recurring performance problems. Depending on whether the delays are server-, network-, or client-related, you then view additional reports to isolate the cause of the problem.

For example, you might notice that download time is consistently high over the course of several hours or days. Using the active filters, you could isolate the download time delays to a specific transaction. You could then generate a Breakdown Summary report for the same transaction and time period, and drill down to view a Page Component Breakdown report, which displays a breakdown for every element on the Web page accessed by the transaction. In doing so, you might find that a particular page component is causing the page to download slowly, for example, a large image or Java applet that was recently added to the Web site. For details on drilling down in the Breakdown Summary report, see the next section.

Correlating Breakdown Over Time Report Data with Other HP Business Availability Center Reports

You can cross-reference transaction breakdown data with data in other HP Business Availability Center reports. For example:

- ▶ To analyze the source of high download time, you can analyze server performance in System Availability Management reports to pinpoint potential server-side problems. For details, see “SiteScope Over Time Reports” in *Using System Availability Management*.
- ▶ To analyze the source of slow network times, click anywhere in the transaction breakdown bar except the Retry Time, Server Time to First Buffer, or Download segments to open the WebTrace by Location report for the current time period. To ensure meaningful correlation between the transaction breakdown data and the WebTrace data, it is recommended that you configure WebTrace to access the same server(s) that your transactions are accessing. For details on the WebTrace Over Time report, see “WebTrace by Location Report” on page 231. For details on configuring WebTrace monitors, see “Editing WebTrace Monitors” on page 111.
- ▶ To trace the cause of retry time, generate the Breakdown Summary report for the same time range, and click the red **X** to open the Failed Transactions table, which details transaction errors for the defined time range. For details on the Failed Transactions table, see “Drilling Down to Smaller Time Frames” on page 218.

Note: To view errors in the Failed Transactions window, you must have enabled transaction breakdown error reporting in the profile (for the transaction monitor containing the transaction with errors). For details on enabling or disabling transaction breakdown error reporting, see “Enable/Disable Transaction Breakdown for the Transaction Monitor” on page 104.

- ▶ To analyze the source of slow server time to first buffer or download times, click the appropriate segment to open HP Diagnostics (a licensed version of HP Diagnostics is required for this drill down). For details about HP Diagnostics, see the *HP Diagnostics User's Guide*.

You can:

- Place your cursor over a color-coded segment to get statistics relevant to that portion of the bar.
- Click the **View as Table** tab, to view the data in table format.

The table displays transaction breakdown information in table format, distributed over the selected time frame. Click the drill down links in the table to view WebTrace or HP Diagnostics (if available) data.

- Modify the report time frame and click **Generate** to generate the modified report.
- Apply active filters. Click the **Active Filters** link, and select or clear check boxes to view the report filtered by specific transactions, locations, or groups.

Breakdown Summary Report

Note: This section is applicable to Web based transactions. For the differences in breakdown reports for non-Web based (TCP) transactions, see “Understanding Breakdown Report Data for Non-Web Based (TCP) Transactions” on page 189.

The Breakdown Summary report helps you determine whether poor transaction response times are being caused by network or server problems, or by client delays. The report can be organized by transaction, location, or group, and can be viewed in either graph or table format.

For information on the breakdown categories used in the report, see “Understanding the Transaction Breakdown Reports” on page 176.

This section contains the following topics:





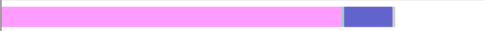


- “Working with Breakdown Summary Report Data” on page 197
- “Correlating Breakdown Over Time Report Data with other HP Business Availability Center Reports” on page 198

- “Using the Error and TBD Raw Data Links” on page 199
- “Further Analyzing Breakdown Summary Report Data” on page 201

Working with Breakdown Summary Report Data

The Breakdown Summary report’s color-coded graphs breaks down transaction times into retry time, DNS resolution time, connection time, SSL handshaking time (if relevant), network time to first buffer, server time to first buffer, download time, and client time. The report further displays, for the selected time frame, the size (in KB) of all pages in the transaction, and the average time it takes for each transaction to be completed (table format only).

In graph format, the report’s x-axis is not a time line, but rather an indicator of transaction times in milliseconds. Each colored bar represents the total time for its corresponding measurement.

	Size(KB)	Breakdown	Errors	TBD Raw Data
aweb3_simple_3Tx_pass_1	9.0			
aweb3_simple_3Tx_pass_2	4.6			
aweb3_simple_3Tx_pass_3	0.2			
				

By correlating transaction response time information with Breakdown Summary report data, you can assess whether poor transaction response times are being caused by DNS resolution or connection problems, network latency or server delay, or client delay.

For example, using the Min./Max. Response Time report, you may determine that average response time for a transaction being run from a particular location is close to the maximum transaction time, indicating poor response times for the transaction at that location. By viewing the Breakdown Summary report for that transaction and location, you may discover that server time to first buffer is unusually high. This could indicate a problem with the Web server serving the region in which the host is located.

Furthermore, you can calculate the download rate by looking at the size measurement and time measurement. This can help you assess whether the transaction is too large or too slow.

Correlating Breakdown Over Time Report Data with other HP Business Availability Center Reports

You can cross-reference transaction breakdown data with data in other HP Business Availability Center reports. For example:

- ▶ to analyze the source of high download time, analyze server performance in the System Availability Management reports to pinpoint potential server-side problems. For details, see “Cross-Performance Report” in *Using System Availability Management*.
- ▶ to analyze the source of slow network times, click anywhere in the transaction breakdown bar except the Retry Time, Server Time to First Buffer, or Download segments to open the WebTrace by Location report for the current time period. To provide meaningful correlation between the transaction breakdown data and the WebTrace data, it is recommended that you configure WebTrace to access the same server(s) that your transactions are accessing. For details on the WebTrace Over Time report, see “WebTrace by Location Report” on page 231. For details on configuring WebTrace addresses, see “Editing WebTrace Monitors” on page 111.
- ▶ to analyze the source of slow Server Time to First Buffer or Download times, click the appropriate segment in the transaction breakdown bar to view the Diagnostics Transactions page in HP Diagnostics (a licensed version of HP Diagnostics is required). For details, see the *HP Diagnostics User’s Guide*.
- ▶ to trace the cause of retry time, click the **Retry Time** segment to open the Failed Transactions table, which details transaction errors for the defined time range. For details, see “Failed Transactions Report” on page 170.

Using the Error and TBD Raw Data Links







In addition to the breakdown bars, the report displays links in the far right columns for the following scenarios:

- ▶ if errors occurred while downloading some of the page components, the report displays a red **X** in the Errors column. Click the red **X** to open the Failed Transactions table, which details page component download errors for the defined time range. For details, see “Failed Transactions Report” on page 170.

Note: To view errors that occurred while downloading page components in the Failed Transactions table, you must have enabled transaction breakdown error reporting in the profile (for the transaction monitor containing the transaction with errors). For details on enabling or disabling transaction breakdown error reporting, see “Enable/Disable Reporting of Additional Error Information” on page 104.



- ▶ if you enabled Page Component Breakdown for the transaction monitor when creating the profile, and if page component breakdown data exists for the selected time range, the report displays an icon in the TBD Raw Data column (TBD = **transaction breakdown**). For details on enabling Page Component Breakdown and setting the page component breakdown data sampling rate, see “Enable/Disable Page Component Breakdown (Business Process Profiles Only)” on page 105.

Click the icon to drill down to the Transaction Breakdown Raw Data report, showing a summary of every instance of the transaction that occurred during the selected time range. Click segments of the bar to drill down, as described in “Correlating Breakdown Over Time Report Data with other HP Business Availability Center Reports” on page 198.

Time	Transaction	Location	Group	Size (KB)	Breakdown	Errors	TCBD
06/30/02 07:07:52 AM	Search_for_person	l.a.	Group1	104.5			
06/30/02 07:11:52 AM	Search_for_person	l.a.	Group1	104.5			
06/30/02 07:21:59 AM	Search_for_person	l.a.	Group1	104.5			
					100 200 300 400 500 600 700 800		

To drill down further to the Component Breakdown report for a specific transaction instance, click any icon in the TCBD column (TCBD = **transaction component breakdown**). Note that HP Business Availability Center only saves complete Component Breakdown data for a sample of transaction instances.

The Component Breakdown report breaks down the transaction by page component. This enables you to analyze whether slow response times are being caused by a particular component of your Web page (for example, an image that is too large). For detail on the Page Component Breakdown report, see “Page Component Breakdown Tool” on page 235.

Page	Component/Request	Server IP	Component/Request Size (KB)	Total Time (ms)	Breakdown
http://aweb3.devlab.	http://a...iew.html	16.59.57.110	2.8	3.0	
http://aweb3.devlab.	http://a...e-1.html	16.59.57.110	1.8	2.0	
					1 2 3 4

Note: You can also generate an on-demand Page Component Breakdown report using the Page Component Breakdown tool. For details, see “Page Component Breakdown Tool” on page 235.

Further Analyzing Breakdown Summary Report Data

You can further analyze the Breakdown Summary report data as described below:

- place your cursor over a color-coded portion of any bar in the Breakdown column to get statistics relevant to that portion of the bar
- to view the data in table format, click the **View as Table** link

The table displays transaction breakdown information in table format, distributed over the selected time frame. Click the drill down links in the table to view Failed Transaction, WebTrace, or Diagnostics (if available) data.

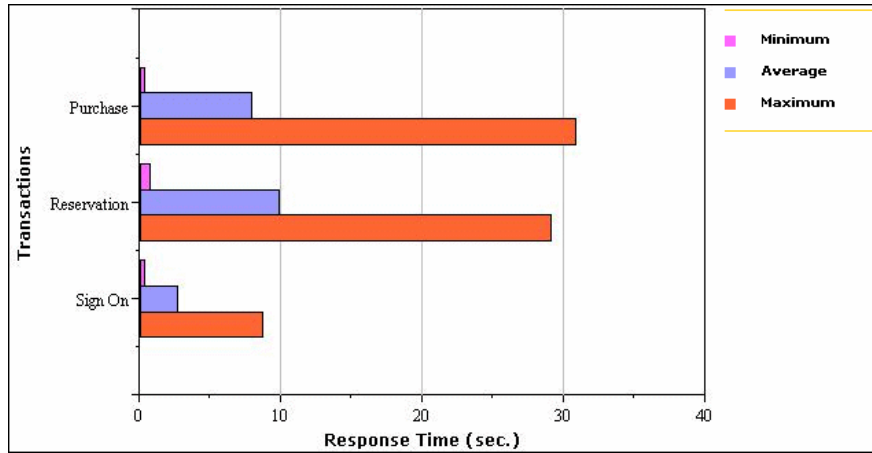
- to modify the report view, select **Transactions**, **Locations**, or **Groups** from the report view list, and click **Generate**:

Select:	To...
Transaction	Display the breakdown by transaction.
Location	Display the breakdown by location.
Group	Display the breakdown by group.

- modify the report time frame and click **Generate** to generate the modified report
- apply active filters. Click the **Active Filters** link, and select or clear check boxes to view the report filtered by specific transactions, locations, or groups

Min./Max. Response Time Report

The Min./Max. Response Time report displays the minimum, average, and maximum response time (in seconds) of completed transactions—organized by transaction, location, or group—for the selected time frame. The report can be viewed in either graph or table format.



This section contains the following topics:

- “Analyzing the Min./Max. Response Time Report” on page 202
- “Further Analyzing Min./Max. Response Time Report Data” on page 203

Analyzing the Min./Max. Response Time Report

The Min./Max. Response Time report helps you identify the best- and worst-case response time scenarios, relative to average response time. Maximum response time is a particularly important measurement, as slow response times translate to a poor end-user experience.

By breaking down the report by transaction, location, or group across different time frames, you can identify exactly where and when maximum transaction response time is too slow, relative to the average. For example, you may determine that a specific transaction, being run in a group emulating Mozilla browsers, always returns a response time well above the average. This may indicate a problem with the HTML code that only affects users running Mozilla.

Further Analyzing Min./Max. Response Time Report Data

You can further analyze the Min./Max. Response Time report data as described below:

In addition to the minimum, average, and maximum response times by transaction, location, or group measurements, you can view the total number of counted transactions.

To view the total number of counted transactions:

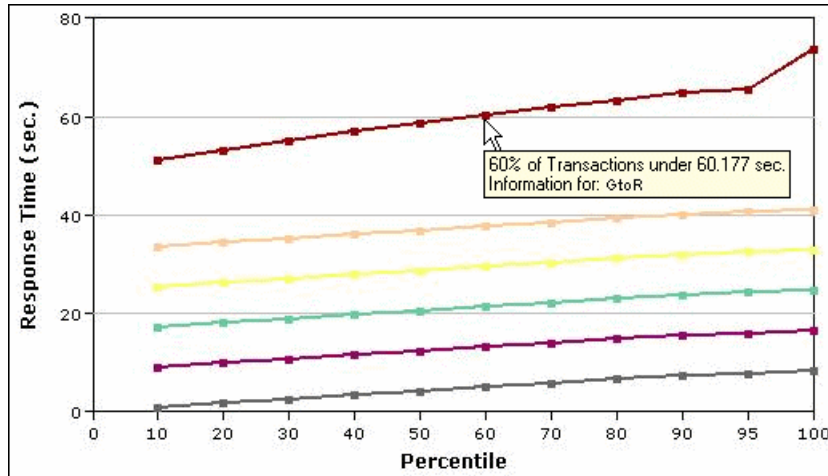
- 1 Drill down in the table view by clicking any link in a row header to focus on a transaction, location, or group.
- 2 To modify the report view, select **Transactions**, **Locations**, or **Groups** from the report view list, and click **Generate**:

Select:	To...
Transaction	Display the minimum, average, and maximum response time for each defined transaction.
Location	Display the minimum, average, and maximum response time at each location.
Group	Display the minimum, average, and maximum response time for each group.

- 3 Modify the report time frame and click **Generate** to generate the modified report.
- 4 Apply active filters. Click the **Active Filters** link, and select or clear check boxes to view the report filtered by specific transactions, locations, or groups.
- 5 Drill down in the graph view. Click any bar chart in the report to focus on the corresponding transaction, location, or group.

Response Time by Percentile Report

The Response Time by Percentile displays, for the defined time range, the specific response time value that all measured response time values are equal to or below, for the 10th to 100th percentile, in 10% increments. You can view the data in either chart or table format.



In the above chart, 60% of the transactions that ran during the defined time range had response times equal to or below 60.177 seconds.

The Response Time by Percentile data helps you identify response time problems and pinpoint their source. The data enables you to determine whether the highest or lowest response times are not typical of response times in general. For example, if the top 10 percent of transaction response times are significantly higher (for example, because they ran during a server reboot), there would be a sharp increase in the chart slope between the 90th and 100th percentile.

The data also enables you to spot response time trends. For example if the slope of the line suddenly increases at the 50th percentile point, something has caused transaction response times to significantly increase during that time period.

By filtering the data by transaction, location, or group across different time frames, you can identify exactly where and when transaction response times are too slow. You configure filter settings in the Custom Report Manager.

You can further analyze the Response Time by Percentile data as described below:

- ▶ place your cursor over any small square along the chart to view a tooltip containing details about the specific response time value that all response time values are equal to or below, at the selected percentile.
- ▶ modify the report time frame and click **Generate** to generate the modified report.
- ▶ drill down in the chart view. Click any drill down link to the right of the report, to focus on that transaction, location, or group.
- ▶ drill down in the table view. Click any link in a row header to focus on a specific transaction, location or group.
- ▶ select the table view in the Custom Report Manager to display the report in table format.

The table displays, for the 10th to 100th percentile (in 10 percent increments), the specific response time value that all response time values are equal to or below. You can view the table broken down by transaction, location, or group.

- ▶ apply component filters in the Custom Report Manager. Click the **Component Filters** button, and select or clear check boxes to view the report filtered by specific transactions, locations, or groups.

15

Summary Reports

This chapter describes the Summary reports and explains how to assess the overall performance of your monitored environment.

This chapter describes:	On page:
About Summary Reports	207
Multi-Profile Summary Report	208
Single Profile Summary Report	212
Performance Matrix Report	216
Triage Report	220

About Summary Reports

Summary reports include data collected by Business Process Monitor and Real User Monitor data collectors, and provide response time and availability data from profile, transaction, and location perspectives. You access Business Process reports from the Business Process tab in the End User Management application.

For details on working with reports (setting reports to generate automatically, choosing the time range, selecting a profile, saving and sharing reports, and so on), see “Working in Reports” in *Reference Information*.

The following Summary reports are available:

Category	Description	For Details, See...
Multi-Profile Summary report	Provides an overall snapshot of application performance for multiple Business Process profiles.	page 208
Single Profile Summary report	Provides a quick snapshot of application performance for a specific Business Process profile.	page 212
Performance Matrix report	Displays a distribution of average transaction response times—organized by transaction, location, or group—over a specified period of time.	page 216
Triage report	Displays transaction data for Business Process Monitor profiles for the past day or for 24 hours, organized by location.	page 220

Multi-Profile Summary Report

The Multi-Profile Summary report provides an overall snapshot of application performance for multiple Business Process profiles.

The first time HP Business Availability Center generates the Multi-Profile Summary report, it includes all profiles up to a maximum of 10. You can change the number of profiles that are included in the report by clicking the **Profile(s)** link and selecting the profiles in the Profiles window. For details on selecting profiles, see “Filtering Individual Reports” on page 148.

You access the Multi-Profile Summary report by selecting **Applications > End User Management > Summary Reports tab > Multi Profile Summary**.

This section includes the following topics:

- “Working with the Multi-Profile Summary Report” on page 209
- “Profile Performance” on page 209

- “Location Performance” on page 210
- “Alert Summary” on page 211
- “Multi-Profile Summary Report Limitations” on page 212

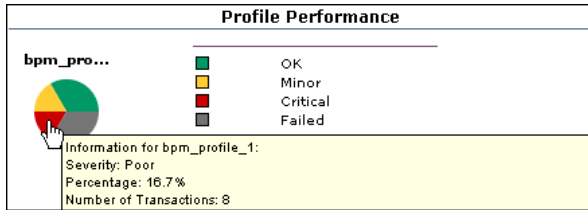
Working with the Multi-Profile Summary Report

- To view a tooltip describing the exact number and percentage of transactions for a segment, point to that segment of the pie chart.
- When you point to a **Failed** segment, HP Business Availability Center also displays the number of outlier transactions. Outlier data appears in a report if **Ignore outlier data in reports** is cleared in the profile’s settings for transaction thresholds. This value is set in End User Management Administration. For details, see “Transaction Threshold Settings” on page 106.
- You can add a chart to a custom report. For details, see “Workflow for Creating Custom Reports” in *Custom Reporting and Alerting*. For the Profile Performance report, Custom Report Manager enables you to add a version of the report that displays the performance of all profiles, not just the three with the worst performance.

Profile Performance

This chart provides you with a quick snapshot of the worst-performing profiles from among the Business Process profiles you select. The chart displays—for the defined time frame—the three profiles in which transactions most often fail or have response times in the Minor and Critical ranges. If there are fewer than three profiles, HP Business Availability Center displays a pie chart for each profile.

In the following example, the **bpm pro** profile has 33.3% of all transactions with response times within the OK (green) threshold range, 16.7% within the Minor (yellow) range, 16.7% within the Critical (red) range, and 33.3% within the Failed (gray) range.

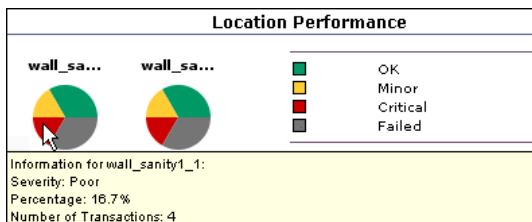


To generate the Transaction Analysis report for a profile, click a pie chart. For details on the Transaction Analysis report, see “Transaction Analysis Report” on page 166.

Location Performance

This chart provides you with a quick snapshot of the worst-performing locations for the selected Business Process profiles, in terms of transaction response time. The chart displays—for the selected profiles and defined time frame—the three locations from which transactions most often fail or have response times in the Minor and Critical range. If there are fewer than three locations in the selected profiles, HP Business Availability Center displays a pie chart for every location.

In the following example, the **wall_sa** profile has 33.3% of all transactions with response times within the OK (green) threshold range, 16.7% within the Minor (yellow) range, 16.7% within the Critical (red) range, and 33.3% within the Failed (gray) range.



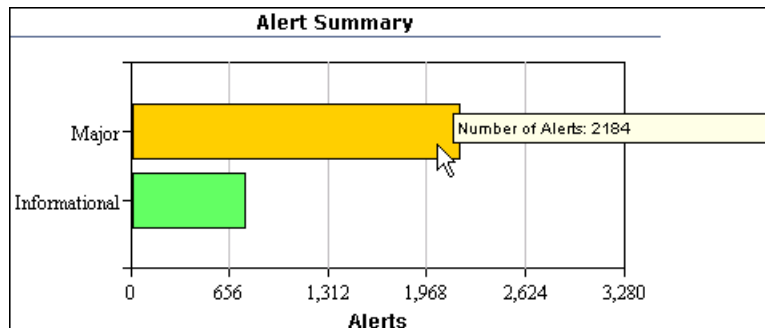
Alert Summary

This chart provides you with a quick snapshot of the total number of alert notices sent during the defined time period, for all selected profiles, grouped by their severity level:

- Unknown
- OK
- Warning
- Minor
- Major
- Critical

To view a tooltip describing the exact number of alerts, point to a bar.

In the following example, the total number of alert notices with major severity is 2184, and the total number of alert notices with informational severity is 760.



Multi-Profile Summary Report Limitations

- ▶ HP Business Availability Center does not display aggregated and raw data simultaneously in the Multi-Profile Summary report.
- ▶ HP Business Availability Center can display profiles concurrently only if they have the same outlier value settings. Outlier settings for each profile are listed in the report page, before report generation. Make sure to select a set of profiles that have the same settings for outlier values. For details on modifying outlier value settings for a profile, see “Transaction Threshold Settings” on page 106.
- ▶ Attempting to generate a Multi-Profile Summary report for a large number of profiles that are stored in multiple databases can significantly affect report generation time. If the time required to generate the report is greater than the browser timeout setting, the report will not be generated.

Single Profile Summary Report

The Single Profile Summary report provides a quick snapshot of application performance for a specific Business Process profile. End User Management displays the last selected profile. To view the report for a different profile, click the **Profile(s)** link and select the required profile in the Profiles window. For details on selecting profiles, see “Filtering Individual Reports” on page 148.

You access the Single Profile Summary report by selecting **Applications > End User Management > Summary Reports** tab > **Single Profile Summary**.

This section includes the following topics:

- ▶ “Working with the Single Profile Summary Report” on page 213
- ▶ “Overall Quality of Service” on page 214
- ▶ “Alert Summary” on page 214
- ▶ “Performance of Transactions” on page 215
- ▶ “Performance of Locations” on page 215

Working with the Single Profile Summary Report

This section explains how to work with the single profile summary report.

To modify the report view:

Select **Transactions**, **Locations**, or **Groups** in the **View By** list, and click **Generate** to generate the transaction performance organized by transaction, location, or group.

To modify the report time frame:

Make changes to the report time frame (located above the **Single Profile Summary** area) and click **Generate** to generate the modified report.

To apply active filters:

Click the **Active Filters** link, and select or clear check boxes to view the report filtered by specific transactions, locations, or groups. Click **Generate** to generate the modified report.

To view a tooltip describing the exact number and percentage of transactions for each segment of the pie chart:

Point to a segment.

When you point to a **Failed** segment, HP Business Availability Center also displays the number of outlier transactions. The outlier data appears here if the **Ignore outlier data in reports** setting is disabled in the profile's transaction threshold settings. This value is set in End User Management Administration. For details, see "Transaction Threshold Settings" on page 106.

To generate a Transaction Analysis report for a transaction:

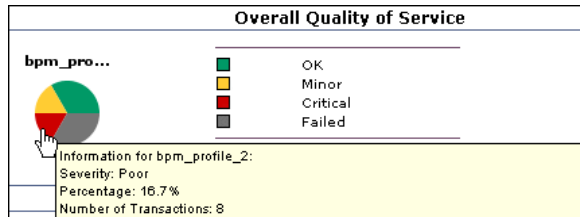
Click a chart. For details on the Transaction Analysis report, see "Transaction Analysis Report" on page 166.

To generate a Location Analysis report for a transaction:

Click a chart. For details on the Location Analysis report, see "Location Analysis Reports" on page 175.

Overall Quality of Service

This chart provides you with a quick snapshot of the quality of service of your monitored application, in terms of transaction response time. The pie chart displays—for the selected profile and time frame—the percentages of transactions that fall in the OK, Minor, Critical, and Failed threshold ranges.



Alert Summary

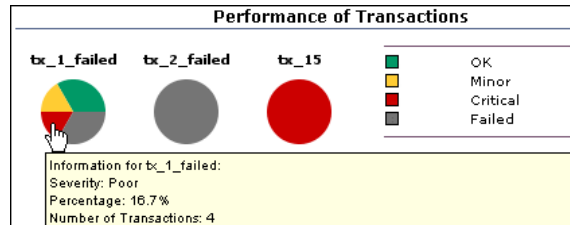
You view this chart to get a quick snapshot of the total number of alert notices, grouped by their severity level, sent during the defined time period for the selected Business Process profile (or for the selected Business Process profile when viewed in a custom report):

- Informational
- Warning
- Minor
- Major
- Critical

To view a tooltip describing the exact number of alerts, point to a bar.

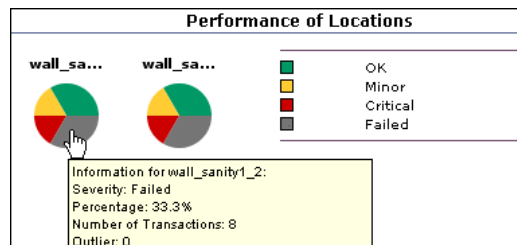
Performance of Transactions

This chart provides you with a quick snapshot of the worst-performing transactions in the profile. The chart displays—for the selected profile and time frame—the three transactions that most often failed or had response times in the Critical and Minor ranges. If there are fewer than three transactions in the profile, HP Business Availability Center displays a pie chart for each transaction.



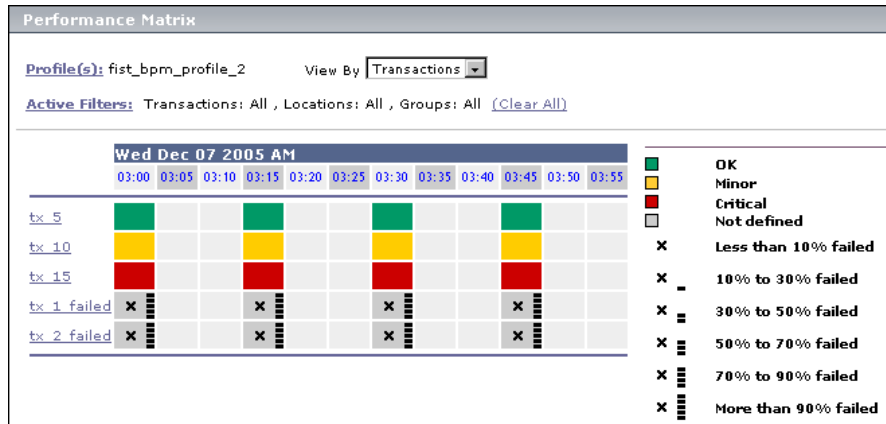
Performance of Locations

This chart provides you with a quick snapshot of the worst-performing locations in the profile. The chart displays—for the selected profile and time frame—the three locations from which transactions most often failed or had response times in the Critical and Minor range. If there are fewer than three locations in the profile, HP Business Availability Center displays a pie chart for each location.



Performance Matrix Report

The Performance Matrix report displays a distribution of average transaction response times—organized by transaction, location, or group—over a specified period of time.



The Performance Matrix report helps you pinpoint and characterize specific problem areas related to average transaction response time and transaction availability. By breaking down the table by transaction, location, or group across different time frames, you can identify exactly where and when average transaction response times are too slow and/or when there are too many failed transactions. For example, you may determine that response times of transactions running from a particular location are consistently in the poor range. This could indicate a problem with the network connections in that location.

In the transaction view, the report's color-coding corresponds to that of the transaction threshold settings—green for OK, yellow for Minor, and red for Critical. For details on setting transaction thresholds in End User Management Administration, see “Transaction Threshold Settings” on page 106.

To access the Performance Matrix report:

Select **Applications > End User Management > Summary Reports**.

This section includes the following topics:

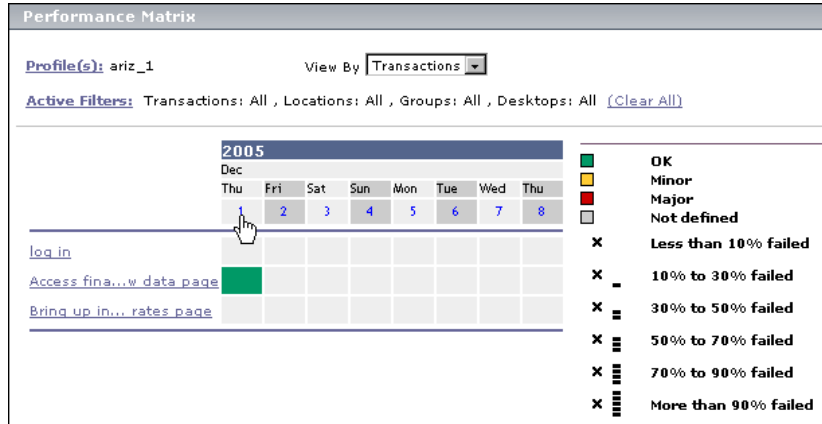
- “Working With the Performance Matrix Report” on page 217
- “Drilling Down to Smaller Time Frames” on page 218
- “Analyzing the Performance Matrix Report” on page 219

Working With the Performance Matrix Report

- Place the pointer over any colored cell in the table to view a tooltip containing details about the average response time of all completed transactions performed by hosts during the time period of the cell.
- Place the pointer over a cell with a black X to view a tooltip containing details on the number of failed transactions, the number of outlier transactions, and the average response time of completed transactions, for the time period of the cell.
- Place the pointer over a grey cell. A tooltip indicating that there are no transactions scheduled for this time frame is displayed.
- Modify the report view by selecting **Transactions**, **Locations**, or **Groups** in the **View By** list, and clicking **Generate** to generate the transaction performance organized by transaction, location, or group.
- Modify the report time frame (located above the **Performance Matrix** area) and click **Generate** to generate the modified report.
- Apply active filters by clicking the **Active Filters** link, and selecting or clearing check boxes to view the report filtered by specific transactions, locations, or groups.
- Click any link in a column header, row header, or cell to drill down to a greater level of detail.

Drilling Down to Smaller Time Frames

You can pinpoint and characterize specific problem areas related to average transaction response time and availability by drilling down in the report to display a smaller time frame. To drill down to a smaller time frame, click a range title.



Depending on the tracking period selected in the View box, clicking the range title displays the report with a smaller time range. For example, in a report with a day tracking period, clicking the range title displays the report with a two-hour tracking period:

Analyzing the Performance Matrix Report

The Performance Matrix report's color-coded cells enable you to analyze average transaction response times at a glance and get a quick snapshot of overall transaction health. For example, if most of the cells in the report are green, then average response times are generally OK. If most of the cells are red, then average response times are generally critical. Color coding is available only when the report is grouped by transactions.

Furthermore, when one or more transactions fail or exceed their outlier value within the tracking period represented by one cell in the table, a black X is displayed in the cell. HP Business Availability Center classifies transactions as outliers if they do not complete within a specified time range. You set outlier parameters in the transaction threshold settings in End User Management Administration. For details, see "Transaction Threshold Settings" on page 106.

In addition to the black X, 1 to 5 horizontal bars are used to signify transaction failure or outlier values as follows:

Icon	Description
x	Less than 10% of the transactions failed or exceeded the outlier value.
x -	Between 10% to 30% of the transactions failed or exceeded the outlier value.
x ==	Between 30% to 50% of the transactions failed or exceeded the outlier value.
x ===	Between 50% to 70% of the transactions failed or exceeded the outlier value.
x ====	Between 70% to 90% of the transactions failed or exceeded the outlier value.
x =====	Over 90% of the transactions failed or exceeded the outlier value.

You use the black Xs and horizontal bars to analyze the frequency of failed and outlier transactions. For example, if many of the cells display black Xs, transactions are consistently failing or exceeding their outlier value over time. If black Xs appear only at certain times, but with 5 horizontal bars (over 90 percent failure rate), there may be a problem with server availability during specific time periods.

Triage Report

The Triage report displays transaction data for Business Process Monitor profiles, organized by location, for the past day or for any selected 24 hours. By default, the first 20 transactions are displayed. (This number is configurable. For details, see “Changing the Maximum Number of Transactions and Locations” on page 152.)

Data in the Triage report is organized by transactions and locations and includes a transaction breakdown graph and an error summary table. The report also includes information about the health of the transaction scripts running at the various locations (Script Health) and about the health of each collector sorted by location (Collector Health). Collector Health gives you an overall status when triaging end user problems, but can also be used when investigating current collector health.

You can access the Triage report from the Dashboard console or directly through the End User Management application. From this report, you can drill down to the Triage Raw Data report. (For details, see “Triage Raw Data Report” on page 157.)

You would use this report to verify the reasons for a problem in a certain profile.

This section includes the following topics:

- “Filtering Report Data” on page 221
- “Working With the Triage Report” on page 222
- “Incorporating a Triage Report into a Custom Report” on page 227
- “Notes” on page 227

Filtering Report Data

To filter report data, you can change the view, profile, or active filter:

- For details on choosing a view, see “Choosing the Time Range and Granularity” in *Reference Information*.
- To choose a profile, click **Profile** to open the **Profile** dialog box. In the **Profile** dialog box, select the profile you want and click **OK**.
- To change the active filters, click **Active Filters** to open the **Active Filters** dialog box. The **Active Filters** dialog box comprises the following tabs:
 - **Transactions**. Enables you to select specific transactions to be included in the report.
 - **Locations**. Enables you to select specific locations to be included in the report.

In the **Transactions** and **Locations** tabs, you select the checkbox next to the transactions and locations you want to include in the report, or use the selection buttons to select **all**, **none**, or **invert** your selection.



- **Advanced**. Enables you to filter the report by one of the following criteria:
 - **Worst Transactions and Worst Locations**. Both the worst transactions and the worst locations are included in the report, without any specific correlation between them. **This is the default setting.**
 - **Worst Locations for Worst Transactions**. The worst locations are selected for inclusion in the report, and then the worst transactions for the selected locations are included.
 - **Worst Transactions for Worst Locations**. The worst transactions are selected for inclusion in the report, and then the worst locations for the selected transactions are included.

You can print, format, and export the Triage report. For details, see “Working in Reports” in *Reference Information*.

Working With the Triage Report

This section explains how to access the Triage report, generate a report, work with the report, and modify the report.

To access the Triage report:

- ▶ **From Dashboard.** You can drill down to the Triage report from any configuration item (CI) of type Business Process Group or Business Process Step. Right-click the CI in the Console to display the context menu. Select **Go to Report > Triage report**.

The Triage report displays data for the profile, transaction, and location of the CI you chose here.

- ▶ **From the End User Management application.** Select **Applications > End User Management > Summary Reports > Triage**.

The Triage report displays data for the transactions and locations of the first profile on the list. (Click the **Profile** link to view the list of profiles.)

To work with the Triage report:

1 End User Management displays:

- ▶ The first 20 transactions and the first 20 locations. The transactions and locations are sorted worst down from top to bottom and left to right. For details on changing the number of transactions and locations displayed, see “Changing the Maximum Number of Transactions and Locations” on page 152.
- ▶ An icon that shows whether transactions have finished successfully (**Script Health**).

When a script in a profile is run, but for some reason does not finish successfully (that is, it does not end with a status of Finished properly or Finished (errors occurred)), samples for transactions that are part of the script but were not run are sent to HP Business Availability Center for inclusion in the Triage report.

A yellow icon signifies that there are problems with the transaction. To view a tooltip showing at which location the script ran with errors, the host machine name, and the number of errors, place the pointer over the icon. The tooltip displays the errors sorted by location.

A green icon signifies that there are no problems.

- ▶ An icon that shows the health of each collector sorted by location (**Collector Health**).

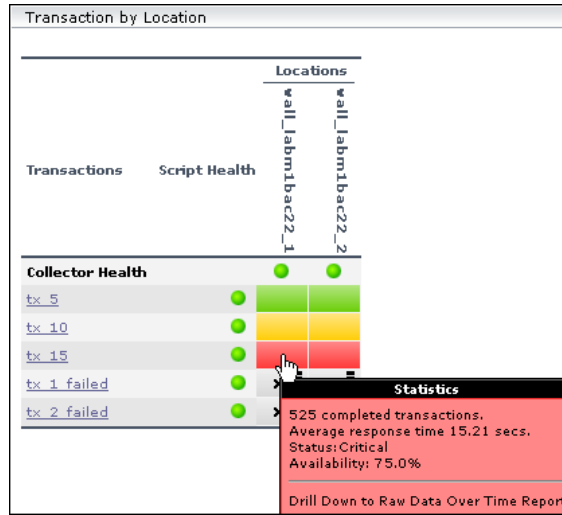
A yellow icon signifies that a Business Process Monitor host has problems. To view a tooltip showing the host machine name, last ping time, and last data time of the problematic host machines, place the pointer over the icon.

For details on changing the values, see “Changing Last Ping Time and Last Data Time Defaults” on page 152.

A green icon signifies that there are no problems.

- ▶ Automatically generated transaction data. For details on setting reports to be automatically generated, see “Configuring Report Generation Settings” in *Platform Administration*.
 - ▶ Transaction data for the first profile in the list, or for the profile, transaction, and location of the CI chosen in Dashboard, depending on how you accessed the Triage report.
- 2** To verify the threshold ranges for the transaction results, use the legend next to the table. Outlier ranges are also shown.

- 3 To view a tooltip showing statistics about completed transactions, average response time of each transaction, the status of the transaction at that location, and transaction availability, place the pointer over any colored cell in the table.



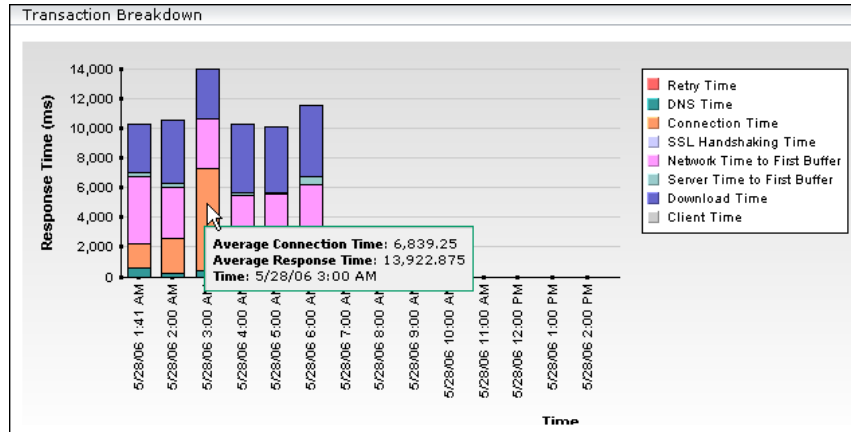
- 4 To drill down and view the raw data upon which the report is calculated, click a cell. The Triage Raw Data report shows data for the transaction and location whose results are shown in the cell you clicked.

To drill down and view the raw data for a transaction, click the transaction.

For details, see "Triage Raw Data Report" on page 157.

- 5 To view a tooltip containing details on the number of failed transactions as well as status and availability, place the pointer over a cell with a black X.

- 6 To view transaction breakdown data, scroll down to the Transaction Breakdown section. Each column in the Transaction Breakdown graph shows the average response time for all the transactions displayed in the Transaction by Location table, for that time.



Time granularity is as follows: on a time scale of 24 hours, points are displayed for each hour. On a time scale of less than two hours, points are displayed for every five minutes. For a discussion of transaction breakdown, see “Understanding the Transaction Breakdown Reports” on page 176.

- 7 To view data for each period, hold the cursor over a column.
- 8 To verify breakdown categories, use the legend next to the table.
- 9 To drill down to HP Diagnostics for a transaction, click on the **Server Time to First Buffer** or the **Download Time** segments for the transaction. The drill down is only enabled if HP Diagnostics is installed. For details on working with HP Diagnostics, see the *HP Diagnostics User's Guide*.
- 10 To drill down to the **Webtrace by Location** report for a transaction, click on any of the segments for the transaction, except for the **Retry Time**, **Connection Time**, **Server Time to First Buffer**, or **Download Time** segments. For details on the Webtrace by Location report, see “WebTrace by Location Report” on page 231.

11 To view a table of errors that occurred during a profile run, over a specified time period, scroll down to the Error Summary section. The Error Summary table includes the following information:

- ▶ **Error ID.** The error ID number. For details on the way Business Process Monitor reports errors, see “Error Summary Report” on page 168.
- ▶ **Example of Error Message.** The description of the first error included in the group of errors with the same error ID, is displayed.
- ▶ **Error Occurrences.** The number of times the error occurred, in the total number of transaction instances that occurred during the specified time period.
- ▶ **Transactions/Total.** The number of defined transactions that caused the error, out of the total number of transactions defined in the profile. Hold the pointer over the value displayed to see a tooltip showing the transaction name.
- ▶ **Locations/Total.** The number of locations from which errors occurred, out of the total number of locations from which scripts ran. Hold the pointer over the value displayed to see a tooltip showing the location name.
 - ▶ To view more errors, click the **Next page** or **Last page** buttons.
 - ▶ To view previous errors in the list, click the **Previous page** or **First page** buttons.
 - ▶ To view the Error Log report for a specific error ID, click the **Drill Down to Error Log** button. For details on the Error Log report, see “Working With the Triage Raw Data Report” on page 158.



To modify the report view:

- 1** Select a new time range or granularity. For details, see “Choosing the Time Range and Granularity” in *Reference Information*.
- 2** Choose a different profile from the profile list.
- 3** To view the report filtered by specific transactions or locations, apply active filters by clicking the **Active Filters** link, and selecting or clearing check boxes.
- 4** To display the transactions and their locations, click **Generate**.

Incorporating a Triage Report into a Custom Report

You can create a custom report from a Triage report. Create a report, choose the Triage Report component, and select the Triage report in the Add Component window. For details, see “Adding a Component to a Report” in *Custom Reporting and Alerting*.

Notes

- ▶ The Triage report does not display deleted transactions, although End User Management does store transaction history.
- ▶ Once you have generated a Triage report with a specific profile and specific filters, End User Management displays the report with these parameters upon subsequent visits to the report, during the same Web session.

16

Network Reports and Tools

You use network reports and tools to analyze the quality of network performance.

This chapter describes:	On page:
About Network Reports and Tools	230
WebTrace by Location Report	231
Network Analysis Report	234
Page Component Breakdown Tool	235
Instant Diagnostics	242

About Network Reports and Tools

Network reports and tools enable you to gain an in-depth view of the network health of your monitored environment.

For details on working with reports (choosing the time range, selecting the profile, saving and sharing reports, and so on), see “Working in Reports” in *Reference Information*.

The following reports and tools are available:

Category	Description	For Details, See...
WebTrace by Location	Displays reports that enable you to analyze network performance by providing traceroute information to specified destinations.	page 231
Network Analysis	Displays reports that enable you to analyze network performance between configured host locations and specified destinations.	page 234
Page Component Breakdown	Displays an on-demand breakdown of download time, by component, for each element of a specified Web page.	page 235
Instant Diagnostics	(For HP Managed Software Solutions customers only) Provides tools that enable gathering of additional information on network and server performance.	page 242

WebTrace by Location Report

The WebTrace by Location report enables you to analyze network performance by providing typical traceroute information from configured host locations to specified destinations. You drill down to view routing details and hop time over time.

You can correlate WebTrace data with transaction performance problems, such as slow transaction response times and failed transactions, to analyze whether the problems are network related.

Note that Business Process Monitor uses WebTrace data. WebTrace records the route through the Internet from your host machines to the destination Web servers specified in the Business Process profile. Unlike standard traceroute programs, WebTrace uses a unique technology that enables it to cross firewalls.

This section includes the following topics:

- ▶ “Understanding the WebTrace by Location Report” on page 231
- ▶ “Analyzing the WebTrace by Location Report” on page 232
- ▶ “Further Analyzing WebTrace Data” on page 233

Understanding the WebTrace by Location Report

For each server destination defined in the profile, the WebTrace by Location report displays a traceroute analysis, grouped by host name, for the specified time frame.

When you configure a WebTrace monitor, you select the host machines or locations to run WebTrace. HP Business Availability Center runs WebTrace according to the schedule set in the profile for running transaction monitors. When you generate the WebTrace by Location report, it displays an average of all the WebTrace runs that took place during the specified time period.

	Avg. Route Time (ms)	Avg. No. of Hops	Retries	unreachable / Total
newt	13.283	4.0	0	5 / 800

For each destination, the WebTrace by Location report breaks down route time from host machine to destination machine as follows:

- ▶ **Avg. Route Time (ms).** The average time it takes for a packet of data to be sent from the host machine to the destination Web site.
- ▶ **Avg. No. of Hops.** The average number of intermediate servers the data packet encounters before it reaches its destination.
- ▶ **Retries.** The number of times a data packet tries, but fails, to reach its destination due to timeout, network difficulty, and so on.
- ▶ **Unreachable/Total.** The number of times the destination was unreachable out of the total number of measurements.

Analyzing the WebTrace by Location Report

The WebTrace by Location report helps you identify problems related to network response time for hosts at various host locations. By correlating transaction response time and service availability information with the WebTrace by Location report data, you can determine whether slow response times or failed transactions are being caused by poor network performance from a specific host location.

For example, using the Performance Matrix report, you might determine that average transaction response times from a particular location are in the critical range, as determined by your transaction threshold settings. By analyzing WebTrace data for the same location over the same time period, you could determine whether network performance was also critical. If so, this could lead you to conclude that the Internet was slow from a particular location during that time period. Alternatively, if network performance for the location and time period seems normal, you could conclude that the problem is server-related, for example, excessive load on your Web server.

The report also displays the average number of hops from the sample, and the total number of retries and unreachables. You can cross-reference this data with transaction response time and service availability information to determine whether poor or failed application performance was caused by specific network errors or network latency for a particular location or time period.

Further Analyzing WebTrace Data

You can further analyze WebTrace data by drilling down in the WebTrace by Location report to get additional route time and hop information. Drilling down helps you determine at exactly which point along the network path bottlenecks are occurring.

To drill down for additional route time information:

- 1** Click a host name link to view the WebTrace Over Time report, which displays two charts:
 - ▶ the host's average route time data with increased time granularity. Place your cursor over a colored bar to see a tooltip with average route time and number of errors.
 - ▶ the number of errors that occurred over the defined time range. Place your cursor over a point on the bar to see a tooltip with the number of errors.
- 2** Click any bar or point in either of the WebTrace over Time charts to view the WebTrace Measurements chart, which displays the WebTrace data with increased time granularity. Place your cursor over a colored bar to see a tooltip with route time statistics.
- 3** Click a specific time measurement in the WebTrace Measurements chart to open the Routing Details window, which displays a detailed breakdown of the specific traceroute run. HP Business Availability Center displays the following routing details:
 - ▶ **hop number.** The order in which the hops occur.
 - ▶ **hop name.** The name of the intermediate server.
 - ▶ **hop IP.** The IP address of the intermediate server.
 - ▶ **errors.** The number of errors associated with a specific hop IP.
 - ▶ **hop time.** The time, in milliseconds, from the source to the specific hop.

Click the **Next** or **Previous** links to move to the next or previous set of time measurements (if available).

To drill down for additional hop information:

Click a link in the **Avg. No. of Hops** column to open the **Hop Time Over Time** report in a new window. The report displays average hop time, for each hop, over the selected time frame. You can view this report in either graph or table format.

Network Analysis Report

The Network Analysis report provides an in-depth picture of network performance for a Business Process profile, if you defined a WebTrace monitor for the profile. The report enables you to understand, for the selected profile and defined time frame:

- ▶ average route time over time between configured host locations and specified destinations
- ▶ errors over time
- ▶ hop time over time between configured host locations and specified destinations

The report is based on WebTrace data. For details on WebTrace, see “WebTrace by Location Report” on page 231. For details on configuring WebTrace monitors, see “Editing WebTrace Monitors” on page 111.

Generating the Network Analysis Report

When you generate the Network Analysis report initially, the WebTrace by Location report is displayed. To analyze data for a specific location, click the location name link. The sub-reports are generated.

The Network Analysis report consists of the following components:

Report Category	Report Name	Description
Main report	WebTrace by Location	Displays a traceroute analysis from configured locations to specified destinations.
Sub-reports	WebTrace over Time	Displays average route time across the network over the selected time frame.
	Errors over Time	Displays the number of errors that occurred over the selected time frame.
	Hop Time over Time	Displays average hop time over the selected time frame.

Page Component Breakdown Tool

Note: This section is applicable to Web based transactions. For the differences in breakdown reports for non-Web based (TCP) transactions, see “Understanding Breakdown Report Data for Non-Web Based (TCP) Transactions” on page 189.

The Page Component Breakdown tool provides an on-demand component breakdown of any Web page. You use the Page Component Breakdown report to analyze network, server, and client health in real time. You correlate this data with transaction performance problems, such as slow transaction response times and failed transactions, to analyze whether they are network-, server-, or client-related.

When generating a Page Component Breakdown report, you select the location from which you want the HTTP requests to originate. By default, the Page Component Breakdown report can be generated from all configured Business Process Monitor locations running Business Process Monitor version 4.5.2 or later.

Note: Page Component Breakdown does not function for streaming objects, such as Java applets, sounds, and movies. This is because the engine that runs Page Component Breakdown uses technology that handles only those components that can be parsed directly from the HTML code (for example, images).

Note to HP Managed Software Solutions customers: The available locations for Page Component Breakdown depend on the locations defined in your HP Managed Software Solutions package.

This section includes the following topics:

- ▶ “Generating the Page Component Breakdown Report” on page 236
- ▶ “Working With the Page Component Breakdown Report” on page 237
- ▶ “Understanding the Page Component Breakdown Report” on page 238
- ▶ “Analyzing the Page Component Breakdown Report” on page 239
- ▶ “Viewing Page Component Breakdown Data in other Contexts” on page 241

Generating the Page Component Breakdown Report

You generate a Page Component Breakdown report by specifying a URL and a location from which to run the breakdown.

To generate the page component breakdown report:

- 1** In the **URL** box, enter an address for the target Web page. This can be:
 - the name of a server on the local network
 - a Web address
 - the full URL for a page, for example:

```
http://www.hp.com/
```

In general, you enter the URLs of specific pages on your Web site, for example, those that are included in the transactions defined in your Business Process Monitor profiles.

- 2** From the **Location** list, select the location from which you want the report to be generated. Each listed location represents a specific Business Process Monitor instance, displayed using the syntax: `location_name (host_name)`.

Note: The system administrator can hide the host name values in the list in the Infrastructure Settings Manager. For details, see “Hiding/Displaying the Host Name Value in the Page Component Breakdown Tool Report” on page 153.

- 3** If you are accessing a secure site, click **Authentication**, and type the user name and password required to access the site.
- 4** Click **Generate** to generate the report.

Working With the Page Component Breakdown Report

- Place the pointer over any link in the Component column to view a tooltip displaying the component’s URL. If the component is an image, the image is also displayed. Click the link to view or open the component.
- Place the pointer over a color-coded portion of any bar in the graph view to get statistics relevant to that portion of the bar.

- Click the **View as Table** link to view the data in table format. The table displays the size of each component, its total download time (in milliseconds), a breakdown of the total download time, and error information if relevant.

Understanding the Page Component Breakdown Report

The Page Component Breakdown report enables you to assess whether transaction response times and service availability are being affected by page content. The report displays the size (in KB) of each page element, the total time it takes for each component of a specified Web page to download, and the offset time for each component. The offset time for a specific component is the time that passes from the start time of the first component on the page until the start time of the specific component. In the graph view, holding the cursor over the white space to the left of a component's colored bar will show a tooltip with the offset time for that component. In the table view, the time is specified in a separate column in the table.

The report further breaks down each component by retry time, DNS resolution time, connection time, network time to first buffer, server time to first buffer, and download time. If your site uses SSL authentication, SSL handshaking time appears in the chart after connection time.

Component/Request	Component/Request Size (KB)	Total Time (ms)	293ms	586ms	879ms	1172ms	1465ms	1758
http://www.hp.com/	68.751	1172						
http://we...lities.js	8.916	460						
http://we...styles.js	4.008	291						
http://we...cookie.js	1.445	97						
http://we...wn_ov2.js	7.479	192						
http://we...me_ov2.js	11.924	289						
http://we...sbmt.gif	0.39	96						
http://we...image.jpg	4.599	97						
http://we...51622.jpg	1.678	97						
http://we...51625.jpg	2.564	97						
http://we...etrics.js	0.568	98						
http://ww...eneric.is	1.888	392						

For information on the breakdown categories used in the Page Component Breakdown report, see “Understanding the Transaction Breakdown Reports” on page 176.

Note:

Gaps in time between elements, in the Breakdown section of the report, represent processing time—client-side delays caused by browser think time, CPU think time, HTML page processing time, time needed to open sockets or threads, and so on.

In certain circumstances, for example, when the Business Process Monitor is using a proxy server, the transaction breakdown mechanism cannot differentiate between server time to first buffer and network time to first buffer. In these cases, the report displays the time between initial HTTP request and receipt of first buffer as Time to First Buffer.

Analyzing the Page Component Breakdown Report

The Page Component Breakdown report helps you identify problematic elements of a Web page, for example, images that download slowly, or broken links. Furthermore, by breaking down an element’s download time, the report can help you identify where problems are occurring along the network (for example, during DNS Resolution, or during Network Time to First Buffer).

By correlating transaction response time and service availability information with Page Component Breakdown report data, you can determine whether slow response times or failed transactions are being caused by specific problematic elements on a Web page that is accessed during the transaction, or by network errors during Web page download.

For example, using the Response Time over Time report, you might determine that the average response times for a particular transaction are suddenly significantly higher than in the past. By running a page component breakdown on the same Web page that is accessed in the transaction, you may discover that a particular image, recently added to the Web page, is downloading very slowly due to its size. This would account for the sudden increase in transaction response times.

The Page Component Breakdown report's color-coded bars enable you to differentiate between retry time, DNS resolution time, connection time, SSL handshaking time (if relevant), network time to first buffer, server time to first buffer, and download time. By analyzing the structure of the page download—for example, how many elements download simultaneously as compared to sequentially—you can pinpoint download bottlenecks.

You can also cross-reference this data with transaction response time and service availability information to determine whether poor or failed application performance is being caused by specific network errors or network latency. For example, if DNS lookup time is slow or returning errors, there may be a problem with your DNS server, which could explain why transactions are failing.

Viewing Page Component Breakdown Data in other Contexts

In addition to generating the Page Component Breakdown report from the Network and Tools tab in the End User Management application, you can generate page component breakdown data in the following contexts:

- ▶ if page component breakdown data collection is enabled for a specific transaction monitor, HP Business Availability Center collects and saves page component breakdown data for a sampling of transaction instances over a given time period. You can view this data via the Breakdown Summary report. For details on enabling page component breakdown data collection, see “Enable/Disable Transaction Breakdown for the Transaction Monitor” on page 104. For details on viewing page component breakdown data in the Breakdown Summary report, see “Breakdown Summary Report” on page 196.
- ▶ a Page Component Breakdown report can be generated on demand from the Business Process Monitor page within the Business Process Monitor Admin. For details, see “Running an On-Demand Page Component Breakdown” in the *Business Process Monitor Administration* PDF.
- ▶ if page component breakdown data collection is enabled for a specific transaction monitor, a Page Component Breakdown report is generated when invoking a task from the transaction monitor Task page within Business Process Monitor Admin. For details, see “Viewing Task Reports” in the *Business Process Monitor Administration* PDF.

Instant Diagnostics

Note: This section applies to HP Managed Software Solutions customers only.

You use Instant Diagnostics tools to obtain additional information on network and server performance.

To access the tools, you select the location from which you want the tools to run. The available locations depend on the locations defined in your HP Managed Software Solutions package.

This section includes the following topics:

- ▶ “Application Diagnostics Tools” on page 242
- ▶ “Advanced Tools” on page 243

Application Diagnostics Tools

The following application diagnostics tools are available:

DNS Lookup. Checks whether the specified DNS server can resolve the specified domain name to an IP address.

Check FTP Server. Checks whether a specified FTP file can be retrieved by sending a file retrieval request to the specified FTP server from the selected location. You also provide FTP server connection parameters.

Ping. Checks whether the specified domain or IP address is available by pinging it from the selected location.

WebTrace. Performs a WebTrace from the selected location to the specified domain or IP address. For details on WebTrace, see “Running WebTrace” in the *Business Process Monitor Administration* PDF.

Traceroute. Performs a standard traceroute from the selected location to the specified domain or IP address.

Advanced Tools

The following advanced diagnostic tools are available. Note that they may require additional setup:

LDAP Authentication. Performs a user authentication on an LDAP server. You provide LDAP server connection parameters and a LDAP query.

Check News Server. Checks whether a News Server is operational by sending informational requests to the server. You provide the server name and other optional parameters.

Part III

Real User Monitor

17

Real User Monitor Administration

This chapter describes:	On page:
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About Real User Monitor

After having installed a Real User Monitor engine and probe (for details, see the *Real User Monitor Administration* PDF) you must configure Real User Monitor in End User Management Administration to be able to monitor applications and end users.

The settings you configure in End User Management Administration are used by the Real User Monitor engine to collect and process real-time data from the Real User Monitor probes. By comparing this data to predefined thresholds, HP Business Availability Center is able to pinpoint performance related issues as experienced by end-users. You use Real User Monitor reports to help identify the cause of delays and determine the business impact of performance issues experienced by end-users.

You use End User Management Administration to:

- ▶ **add a Real User Monitor engine.** This includes configuring the engine, general settings, probes, global HTTP error events, server names, and host aliases.
- ▶ **define applications to be monitored.** This includes configuring applications, application events, pages, page events, and transactions.
- ▶ **create end-user groups.**

You use the monitor tree to navigate through containers and elements in the tree structure and drill down to monitor and other configuration settings. For details on the different hierarchy elements, see “Using End User Management Administration” on page 15.

While there are several ways to perform actions and edit object properties, the method described in this document is that of highlighting an object in the monitor tree and right-clicking it to access a menu of options valid for that object. For details on the different ways to perform actions and edit object properties, see “Navigating and Performing Actions in the Contents Tab and the Monitor Tree” on page 25.

You can customize your view of the enterprise tree to list only those elements with which you are working. For details, see “Setting Views” on page 33.

In addition, End User Management Administration enables you to change configurations across multiple profiles and monitors using **Global Replace**. For details, see “Using Global Replace” on page 39.

Using the URL Builder

You use the URL Builder to define URLs when configuring session reset settings, applications, pages, and error page events.

To specify a URL, you enter the URL in the **URL** box in the upper area of the URL Builder dialog box and click the **Apply** button. The URL is automatically broken down into the five following composite parts in the lower area of the URL Builder dialog box.

- ▶ **URL Protocol.** The protocol used to fetch the URL. HTTP is the standard protocol for regular communications and HTTPS is the protocol used when the URL is accessed using Secure Sockets Layer (SSL.)
- ▶ **URL Host.** The name of the machine on which the file, or resource, that you wish to access via the URL resides.
- ▶ **URL Port.** The port number used to connect to the URL host machine. The default port when using the HTTP protocol is 80 and when using the HTTPS protocol, the default port is 443.
- ▶ **URL Path.** The path to the file, or resource, that you wish to access via the URL.
- ▶ **URL Parameters.** URL parameters form a query string that is used by the URL to narrow its search by filtering for specific values in specific parameters. Each parameter in the string includes the parameter name and the value being searched for. Parameters are separated from the rest of the URL by a question mark (?). Configured URLs must use the ampersand character (&) as the parameter delimiter.

Once the URL is broken down into its parts, you cannot edit the URL directly in the **URL** box in the upper area of the URL Builder dialog box, but do so by editing the composite parts in the lower area of the URL Builder dialog box. Any change to the composite parts is automatically updated and displayed in the full URL in the **URL** box in the upper area of the URL Builder dialog box.

When configuring a URL, you can use the asterisk (*) wildcard. For details, see “URL Wildcards” on page 251.

Note: The URL cannot exceed 1000 characters and cannot include the # sign followed by an asterisk (#*).

When you have finished defining the URL, you can encode it into UTF-8 format and save it, or save it without any encoding. By saving a URL without UTF-8 encoding, you can define a URL that is externally encoded by a different encoding scheme. URL matching is affected by the encoding of recorded and configured URLs. For recorded and configured URLs to match, they must have the same encoding.

Example of URL Composite Parts

The following table shows the composite parts of the URL `http://www.hp.com/cgi-bin/search/search.cgi?country_code=corp&keyword=real%20user%20monitor`

URL Part	Value
Protocol	http
Host	www.hp.com
Port	80 (default)
URL Path	cgi-bin/search/search.cgi
Parameters	country_code=corp&keyword=real%20user%20monitor

URL Wildcards

The asterisk (*) is the only valid wildcard character that can be used when defining a URL. The asterisk can be used in the URL host, the URL port, the URL path, and the URL parameters. The asterisk wildcard character represents any combination of characters and is applicable to where it is placed. For example:

- **hp*** is equivalent to any string of characters that begins with **hp**
- ***hp** is equivalent to any string of characters that ends with **hp**
- ***hp*** is equivalent to any string of characters that has **hp** in it somewhere
- **h*p** is equivalent to any string of characters that begins with **h** and ends with **p**

By default, an asterisk is considered to be a wildcard. If you want to use an asterisk as a literal in a string and not as a wildcard, precede it with a backslash (\). For example, the string **my*str*** will be matched with **my*str123**, but will not be matched with **my123str123**.

Note:

- The asterisk wildcard character cannot be used in the URL port when defining an application URL.
 - The asterisk wildcard character can be used in the value part of a parameter, but cannot be used in the parameter name.
 - If the URL parameter string contains only an asterisk wildcard character and nothing else, this indicates that the URL must contain at least one parameter, but it does not matter what the parameter name or the value is.
-

Correlating Collected Data with Configured Pages

In addition to correlating wildcard expressions (for details, see “URL Wildcards” on page 251), Real User Monitor uses other guiding principles, or rules in correlating recorded URLs collected by the probes with the URLs you configure in End User Management Administration. You can reconfigure some of the default correlation rules according to which Real User Monitor operates in the Real User Monitor Engine. For details, see “URL Correlation Parameters” in the *Real User Monitor Administration* PDF.

This sections describes:

- “Correlating Session ID Parameters” on page 252
- “Correlating URL Suffixes” on page 254
- “Correlation and Case-Sensitivity” on page 254
- “Correlating Parameters Without Values” on page 255
- “Correlating URLs Containing Bookmarks” on page 255
- “Correlating URLs Without URL Paths” on page 255
- “Correlating URLs Ending with a Directory” on page 255
- “Correlating Ports” on page 256
- “Correlating URLs Containing Basic Authentication” on page 256
- “Correlating Parameters” on page 256

Correlating Session ID Parameters

By default, Real User Monitor takes the session ID parameters of the recorded URL into consideration when correlating the recorded URL with a configured URL. It looks to match the recorded URL to a configured URL containing the identical session ID parameter values. In addition, Real User Monitor treats URLs with non-identical session ID parameter values as separate entities when calculating global statistics such as Most Popular Pages.

You can instruct Real User Monitor to ignore session ID parameters when correlating a recorded URL with a configured URL by configuring the

HPRUM\conf\configurationmanager

Application_Server_Types_configuration.xml file on the Real User Monitor engine machine (for details, see “URL Correlation Parameters” in the *Real User Monitor Administration* PDF). For example, if you set the application server as **BroadVision** Real User Monitor ignores the **BV_SessionID** and **BV_EngineID** parameters in the following URL:

http://www.hp.com/~anand/Ticket_Confirm.jsp?BV_SessionID=@@@@1812057630.1043567934@@@@&BV_EngineID=cccdadchgidfmlmcefecehidfhdfdk.0&value=0000144976

The URL is translated as follows:

http://www.hp.com/~anand/Ticket_Confirm.jsp?BV_SessionID=*&BV_EngineID=*&value=0000144976

As a result, the recorded URL can be correlated with a configured URL that contains different **BV_SessionID** and **BV_EngineID** parameters.

The different **BV_SessionID** and **BV_EngineID** parameter values are also ignored when Real User Monitor calculates global statistics such as Most Popular Pages. In the above example, all BroadVision sessions are recorded as [http://www.hp.com/~anand/Ticket_Confirm.jsp?](http://www.hp.com/~anand/Ticket_Confirm.jsp?BV_SessionID=*&BV_EngineID=*&value=0000144976)

[BV_SessionID=*&BV_EngineID=*&value=0000144976](http://www.hp.com/~anand/Ticket_Confirm.jsp?BV_SessionID=*&BV_EngineID=*&value=0000144976) for global statistic purposes.

Note:

- ▶ Vugen and Business Process Monitor transactions that do not contain a session ID in either a header cookie or the URL, cannot be correlated as individual sessions. Vugen and Business Process Monitors should be configured to include a session ID in a header cookie, or the URL, in transactions.
 - ▶ If the interval between Business Process Monitor samples is greater than the session time-out configured for the Real User Monitor engine in End User Management Administration, the open session will be closed and a new session started for the next sample, even if a session ID is not included in the sample.
-

Correlating URL Suffixes

By default, Real User Monitor considers a URL with the suffix of **index.html** to be the same as the root URL. For example, <http://www.hp.com/index.html> is considered to be the same as <http://www.hp.com/>. To instruct Real User Monitor to consider other suffixes as being the same as the root URL, or to instruct Real User Monitor to consider all URL suffixes as being different from the root URL, you can set the **adaptIndexurl** and **urlIndexStrings** parameters in the Real User Monitor engine (for details, see “URL Correlation Parameters” in the *Real User Monitor Administration* PDF).

Correlation and Case-Sensitivity

By default, Real User Monitor URL correlation is case insensitive—that is, a recorded URL such as <http://www.hp.com/rumEnginePage.html> will be correlated with the configured URL <http://www.hp.com/rumenginepage.html>. However, you can instruct Real User Monitor to use case-sensitive URL correlation (for all but the host and protocol parts of a URL) by setting the **adaptCaseSensitive** parameter in the Real User Monitor engine (for details, see “URL Correlation Parameters” in the *Real User Monitor Administration* PDF).

Correlating Parameters Without Values

Real User Monitor will correlate a URL even if it contains a parameter key without a value. For example, a recorded URL such as http://www.hp.com/cgi-bin/search/search.cgi?country_code will still be correlated even though no value has been specified for the `country_code` parameter.

Note: You cannot configure Real User Monitor to operate differently in this respect.

Correlating URLs Containing Bookmarks

Real User Monitor ignores bookmarks when performing URL correlation. For example, the recorded URL <http://www.hp.com:80/?A=2#bookmark3> will be correlated with the configured URL <http://www.hp.com:80/?A=2>.

Correlating URLs Without URL Paths

Real User Monitor considers URLs that do not contain URL paths to be identical to URLs that contain a slash following the host part of the URL. For example, the recorded URL <http://www.hp.com> will be correlated with the configured URL <http://www.hp.com/>.

Note: You cannot configure Real User Monitor to operate differently in this respect.

Correlating URLs Ending with a Directory

Real User Monitor does not consider URLs that contain a double slash representing a directory to be identical to URLs that contain a single slash following the host part of the URL. For example, the recorded URL <http://www.hp.com//> will not be correlated with the configured URL <http://www.hp.com/>.

Note: You cannot configure Real User Monitor to operate differently in this respect.

Correlating Ports

Real User Monitor assigns a default port to a recorded URL in which a port number is not specified. For example, a recorded URL such as <http://www.hp.com> will be correlated with the configured URL <http://www.hp.com:80>.

Correlating URLs Containing Basic Authentication

By default, Real User Monitor ignores basic authentication when performing URL correlation. For example, the recorded URL http://bob.my_password@www.hp.com will be correlated with the configured URL <http://www.hp.com>. However, you can instruct Real User Monitor to consider basic authentication when performing URL correlation by setting the **basicAuthentication** parameter in the Real User Monitor engine (for details, see “URL Correlation Parameters” in the *Real User Monitor Administration* PDF).

Correlating Parameters

By default, Real User Monitor query parameter correlation is not order sensitive. For example, the recorded URL <http://www.hp.com:80/?a=2&b=2&c=3> can be correlated with the configured URL <http://www.hp.com:80/?b=2&c=3&a=2> or the configured URL <http://www.hp.com:80/?b=2&a=2&c=3>.

Note: You cannot configure Real User Monitor to operate differently in this respect.

Correlation Algorithm for Multiple URL Matches of Business Critical Pages

This section describes the algorithm that Real User Monitor uses to determine which URL definition a recorded URL will be correlated with, if several URL definitions match the recorded URL.

Whereas in previous versions of Real User Monitor a recorded URL could be correlated with several configured pages—if the URL matched several page definitions—in the current version of Real User Monitor a URL can be correlated with only one configured page.

If a recorded URL matches several URL definitions, Real User Monitor determines which configured page to correlate with the recorded URL based on the placement of the asterisk (*) wildcard character in the configured URL. URLs comprise up to five parts, separated by delimiters (for details of the different parts, see “Using the URL Builder” on page 249). Real User Monitor will first try to match the recorded URL to a defined URL with an asterisk in the last part of the defined URL. If no match can be made, Real User Monitor will then try to match the recorded URL to a defined URL with an asterisk in the one but last part of the defined URL. In this manner it will keep trying to find a match up to an asterisk, moving backwards from part to part in the defined URL.

For example, if you configured two URLs—**http://www.hp.com/cgi-bin/search/search.cgi?*** and **http://www.hp.com/cgi***—and the URL **http://www.hp.com/cgi-bin/search/search.cgi?country_code=corp&keyword=real+user+monitor** is recorded, the recorded URL will be correlated with **http://www.hp.com/cgi-bin/search/search.cgi?*** because the asterisk is located in the last part (query parameters), rather than in a preceding part of the URL.

If two configured URLs both contain asterisks in the same part of the URL, the Real User Monitor matches the recorded URL to the configured URL with which it shares the greatest number of consecutive joint characters from the beginning of the URL. For example, if you configured two URLs—**http://www.hp.com/cgi*** and **http://www.hp.com/cgi-bin***—and the URL **http://www.hp.com/cgi-bin/search/search.cgi?country_code=corp&keyword=real+user+monitor** is recorded, the recorded URL will be correlated with **http://www.hp.com/cgi-bin***.

Snapshot Settings

When configuring Real User Monitor in End User Management, there are a number of different settings that determine if and how snapshots of pages will be taken. The following table describes the various options and the fields that must be enabled for each one:

Snapshot Option	Description	Real User Monitor Engine	Application Setting	Text Pattern Event (per application) or Global HTTP Error Event (in Engine Settings)
Save snapshot on event	Saves a snapshot of the page (or a configured number of pages back) on which a configured text event, or global HTTP error, occurs.	Snapshot on event checkbox in the Data Reporting Settings pane in General Settings . If this option is enabled, you can configure the number of pages back (including the event page itself) of which snapshots are saved.	<ul style="list-style-type: none"> ▶ Snapshot on event checkbox in the Snapshot Collection Settings pane. ▶ Enable application clickstream checkbox in the Main Settings pane. 	Create snapshot on event checkbox in the Main Settings pane.

Snapshot Option	Description	Real User Monitor Engine	Application Setting	Text Pattern Event (per application) or Global HTTP Error Event (in Engine Settings)
Save session snapshots	Saves snapshots of all the pages from the beginning of a session, up to and including the page on which a configured text pattern event, or global HTTP error, occurs.	N/A	<ul style="list-style-type: none"> ▶ Session snapshot on event checkbox in the Snapshot Collection Settings pane. ▶ Enable application clickstream checkbox in the Main Settings pane. 	Save session snapshots checkbox in the Main Settings pane.
Snapshot on transaction detection	Enables you to configure a transaction snapshot collection schedule. Transaction snapshots can be viewed when displaying session details in the Session Analyzer report, and are used to include the monitored real-user transactions in a VuGen script generated from the Business Process distribution Report.	N/A	<ul style="list-style-type: none"> ▶ Snapshot on transaction detection checkbox in the Snapshot Collection Settings pane. ▶ Enable application clickstream checkbox in the Main Settings pane. 	N/A

Note:

- ▶ Saving all the pages from the beginning of a session enables more accurate frames unification, thus improving session replay, but may adversely affect Real User Monitor probe performance.
 - ▶ If both **Session snapshot on event** and **Snapshot on event** are enabled, **Session snapshot on event** is used.
-

User Name Translation

When configuring an application to be monitored in End User Management Administration, you can select a user name translation file if you want Real User Monitor to translate the user name it locates in the monitored data.

A name translation file called **Login_Users.csv** must be created in the **<Real User Monitor engine root directory>\conf\resolver** directory on the Real User Monitor engine machine. A sample of the **Login_Users.csv** file that can be copied is located in the **<Real User Monitor engine root directory>\conf\resolver\samples** directory.

To add a user to the **<Real User Monitor engine root directory>\conf\resolver>Login_Users.csv** file, edit the file, and enter the user's login name in the first column and the user's real name in the second column.

Note: It is recommended that you use a user name translation file if you choose **IP address** in the **Search in** box in the **User Name Detection** pane when configuring an application. Otherwise, the user name will be reported only as an IP address.

Session Property Search Settings

When you configure a session property to be tagged for an application by Real User Monitor, you specify whether Real User Monitor should search a page's content, header, or get/post parameters, as well as the expressions that enclose the string you want Real User Monitor to extract as the session property value. You use the session property tags to filter sessions included in the Session Analyzer Report (for details, see "Session Analyzer Report" on page 486) and can see the session property values when viewing session details (for details, see "Session Details Page" on page 490).

You configure a session property in the Session Property Dialog Box (for details, see "Session Property Dialog Box" on page 368) and use the following fields to configure the page area to be searched and the expressions enclosing the string to be extracted:

- ▶ **Search in.** The area of the page in which Real User Monitor searches for the expressions enclosing the string to be extracted.
- ▶ **Field/Tag/Parameter.** A specific header field, html tag, or get/post parameter within the specified area to be searched.
- ▶ **<From expression>.** The expression that precedes the string to be extracted.
- ▶ **<To expression>.** The expression that follows the string to be extracted.

Note: Click the **Advanced Criteria** button in the Session Property Dialog Box (for details, see "Session Property Dialog Box" on page 368) to open the **Advanced Finding and Retrieving** dialog box, where you can enter a regular expression that represents the string for Real User Monitor to find to tag the session, and configure the data to retrieve as the session property value.

The following table lists the options that can be used in the **Search in** field, the corresponding fields, tags and parameters that are valid for each option, and the resulting string that is extracted according to the configured from and to expressions:

Note: The extracted string is limited to 50 characters.

Search in	Field/Tag/ Parameter	Both To and From expressions configured	Only To expression configured	Only From expression configured	Neither To nor From expressions configured
get/post parameters	All This field is disabled and by default, the entire get/post parameter string is searched.	Returns the get/post parameters string, starting after the first occurrence of the From expression and ending with the first occurrence of the To expression.	Returns the get/post parameters string, starting from the beginning of the string and ending with the first occurrence of the To expression.	Returns the get/post parameters string that starts after the first occurrence of the From expression until the end of the get/post parameters string.	Returns the entire get/post parameters string.

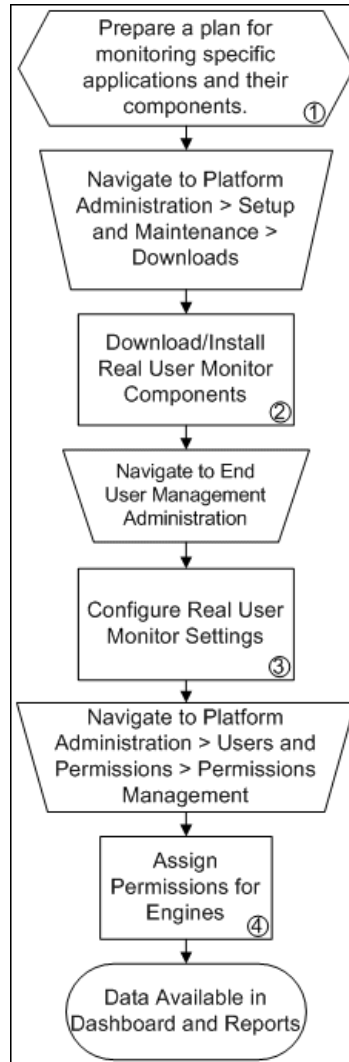
Search in	Field/Tag/ Parameter	Both To and From expressions configured	Only To expression configured	Only From expression configured	Neither To nor From expressions configured
header	Enter the specific header field to be searched. Note: This field is mandatory.	Returns the content of the specific header field, starting from first occurrence of the From expression and ending with the first occurrence of the To expression.	Returns the content of the specific header field, ending with the first occurrence of the To expression.	Returns the entire content of the specific header field, starting from first occurrence of From expression.	Returns the entire content of the specific header field.
content	Enter the name of the html tag to search for in the page content. Note: The default value of All enables you to search the entire content instead of a specific html tag.	Returns the content of the first html tag that contains both the To and From expressions, starting after the first occurrence of the From expression and ending with the first occurrence of the To expression.	Returns the content of the first html tag that contains the To expression, starting from the beginning of the tag and ending with the first occurrence of the To expression.	Returns the content of the first html tag that contains the From expression, starting after the first occurrence of the From expression until the end of the tag.	Returns the entire contents of all matching html tags.

Backward Compatibility

HP Real User Monitor 7.0 no longer sends details of unconfigured end-user groups to HP Business Availability Center for inclusion in Dashboard views.

Collect Data on Real User Traffic Accessing a Specific Application

The flowchart below describes the process required to set up and use Real User Monitor to collect data on the performance of real users accessing defined applications. The numbered elements are referenced in the table on the following page, which provides additional details about the steps and a reference to more information.



Ref. No.	Comment
1	<p>Prepare a plan that maps out the applications about which you want to collect data, and any specific pages, transactions, and end users on which you want to focus. Keep in mind that the Real User Monitor collects large quantities of data so it is recommended to focus only on the components considered critical for monitoring. Include information about the monitored IT infrastructure components associated with the applications (for example, servers being monitored by SiteScope that are running a Web-based application against which you plan to monitor real user traffic).</p>
2	<p>Install the Real User Monitor engine, probe, and MySQL database. Use the Real User Monitor Engine Web Console to administer connection parameters between Real User Monitor and HP Business Availability Center and for other engine administration tasks. For more information, see the <i>Real User Monitor Administration</i> PDF.</p>
3	<p>In End User Management Administration, you add the Real User Monitor engine you installed to the monitor tree. You then add one or more probes to the engine and configure the probe(s) to collect data from specific Web servers. In addition, you configure applications to monitor, and the pages, transactions, events and end users for which you want to collect specific data. For more information, see “Real User Monitor Administration User Interface” in <i>Using End User Management</i>.</p> <p>Once defined, the applications, pages, events, and end users are added as CIs to the CMDB and are automatically attached to the various Real User Views (applications, end users, locations, and servers) from where they can be added to other views (if the views are not updated, perform a synchronization in Source Manager). When configuring new pages and transactions to monitor, you can associate the page or transaction with existing CIs using Configuration Item Attachment Settings. For more information, see “Real User Monitor Views” on page 271.</p>
4	<p>Engine permissions set in the Monitors context in the Permissions Manager do not affect the permissions to view that engine in views defined in IT Universe Manager. Permissions for views must be set separately. For more information, see “Permissions Management” in <i>Platform Administration</i>.</p>

Install and Configure Real User Monitor

Install Real User Monitor

Install Real User Monitor, which comprises an engine, probe and database. For details, see the *Real User Monitor Administration* PDF.

Configure a Real User Monitor Engine in End User Management

Configure at least one Real User Monitor engine in End User Management. For details, see “Configure Real User Monitor Engine Settings” on page 268.

Use the Real User Monitor Reports to Analyze Monitored Data

Once a Real User Monitor engine has been installed, and configured in End User Management, you use the Real User Monitor reports to analyze the data monitored and collected by Real User Monitor. For details of the Real User Monitor reports, see “Real User Monitor Reports User Interface” on page 377.

Configure the Real User Monitor Engine

Configure Real User Monitor Engine Settings

Configure at least one Real User Monitor engine in End User Management Administration. For details, see “New/Edit Real User Monitor Engine” on page 347.

Configure Applications

Configure the applications that you want to monitor. For details, see “Configure Applications” on page 269.

Configure End Users

Configure the end users you want to monitor. For details, see “New/Edit End-User Group” on page 328.

Configure Real User Monitor Engine Settings

Configure General Settings

Configure the general settings for a Real User Monitor engine in End User Management. For details, see “Edit General Settings” on page 304.

Configure Probe Settings

Configure the probe settings for a Real User Monitor engine in End User Management. For details, see “New/Edit Probe” on page 345.

Configure Global HTTP Error Events

Configure global HTTP error events for a Real User Monitor engine in End User Management. For details, see “New/Edit Global HTTP Error Event” on page 334.

Configure Server Names

Configure server names for a Real User Monitor engine in End User Management. For details, see “New/Edit Server Name” on page 352.

Configure Host Aliases

Configure host aliases for a Real User Monitor engine in End User Management. For details, see “New/Edit Host Alias” on page 337.

Configure Applications

In End User Management, configure the applications you want to be monitored by Real User Monitor.

Configure Specific Applications

Configure the specific applications you want to monitor. For details, see “New/Edit Application” on page 314.

Configure Pages

Configure the pages to be included in the monitored applications. For details, see “New/Edit Page” on page 339.

Configure Transactions

Configure the transactions that are part of an application you want to monitor. For details, see “New/Edit Transaction” on page 362.

Configure Events

Configure error and information events for the applications and pages you want to monitor. For applications, you can configure session unavailable pages events, session pages events, text pattern events, and error page events. For pages you can configure text pattern events and page size events. For details on:

- Error Page events, see “New/Edit Error Page Event” on page 332.
- Page Size events, see “New/Edit Page Size Event” on page 343.
- Session Pages events, see “New/Edit Session Pages Event” on page 354.
- Session Unavailable Pages events, see “New/Edit Session Unavailable Pages Event” on page 356.
- Text Pattern events, see “New/Edit Text Pattern Event” on page 358.

18

Real User Monitor Views

This chapter describes the content and structure of the Real User Monitor views.

This chapter describes:	On page:
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KPIs Used for Real User Monitor CIs	273
Real User Applications View	274
Real User End Users View	277
Real User Locations View	279
Real User Servers View	282
All RUM Monitors View	283

About Real User Monitor Views

The Real User Monitor views present real-time performance, availability, and other data for your network and servers, collected by Real User Monitor by monitoring real traffic generated by end users. The data enables you to analyze the business impact of detected performance issues related to end users, and helps you to identify the cause of delays. From the views, you can access various Real User Monitor reports, where you can analyze the collected data to isolate the root cause of detected problems.

For information on Real User Monitor functionality, see the *Real User Monitor Administration* PDF.

The CIs and relationships for the incoming Real User Monitor samples are created by the Real User Monitor source adapter (described in “Real User Monitor Source Adapter Details” in *IT World Model Management*). The hierarchical structure for each Real User Monitor view is determined by the TQL for the view (described in “Working with Pattern and Instance Views in IT Universe Manager” in *IT World Model Management*).

The views include information about applications, containers, pages, end users, servers, user sessions, and so forth.

The Real User Monitor views are:

- ▶ “Real User Applications View” on page 274
- ▶ “Real User End Users View” on page 277
- ▶ “Real User Locations View” on page 279
- ▶ “Real User Servers View” on page 282
- ▶ “All RUM Monitors View” on page 283

Note: You can also see Real User Monitor applications data in the All RUM Monitors View and the End User Monitors View. For an explanation of the data in these views, see “Real User Applications View” on page 274.

Tip: If you are not using Real User Monitor in your HP Business Availability Center system, then it is recommended that you deactivate the Real User Monitor views. For more information, see “View Manager Window” in *IT World Model Management*.

KPIs Used for Real User Monitor CIs

The following KPI are used for the CIs in the Real User Monitor views:

- **Performance.** Displays information on the average download time of a page or transaction, or the percentage of sessions with no page performance problems, for an application monitored by Real User Monitor.
- **Availability.** Displays information on the average availability of a page, transaction, or session, for an application monitored by Real User Monitor.
- **Volume.** Displays information on traffic volume, such as: page hits, transaction runs, amount of sessions, errors, events.
- **Latency.** Displays information on the average round-trip time for packets travelling between the end users and the server monitored by Real User Monitor.
- **Component Availability.** Displays information on the percentage of application pages without server errors for a monitored server.
- **Bandwidth.** Displays the amount of traffic (in bytes) between the server and end users accessing the server (for traffic in both directions), including both HTTP and HTTPS traffic.

For more details about the KPIs, see “KPI Repository Reference” in *Using Dashboard*.

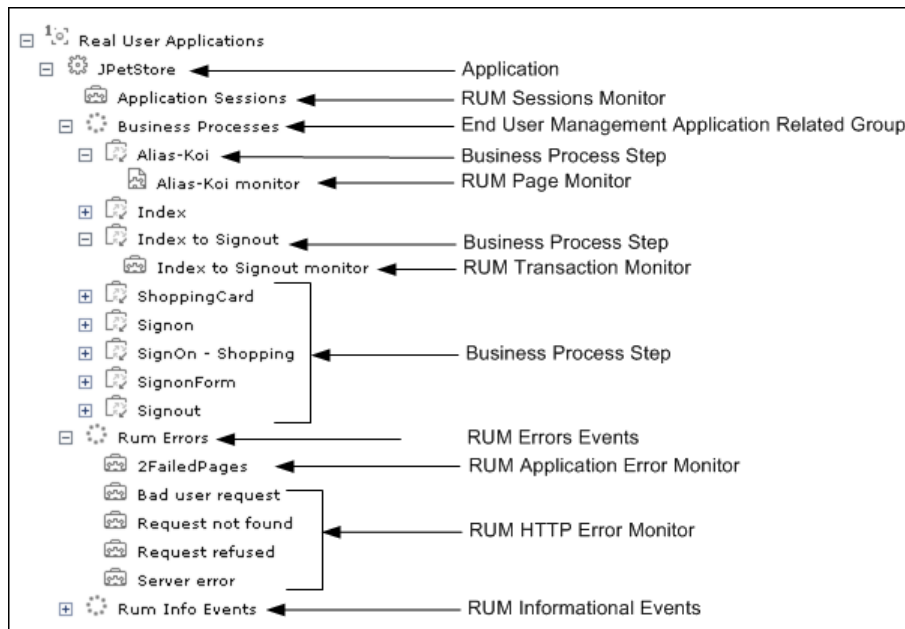
Real User Applications View

The **Real User Applications** view displays data on the pages and transactions accessed in the applications monitored by Real User Monitor, and data on errors and events for the applications.

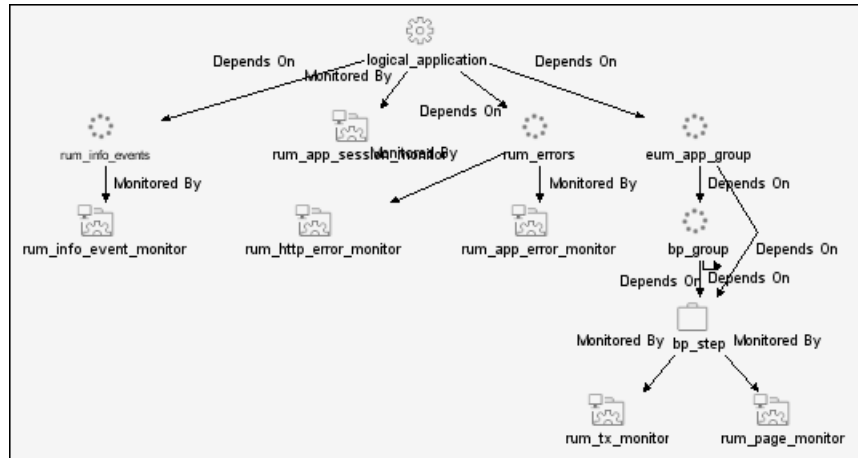
The applications are configured in End User Management Administration. For information on configuring applications to be monitored, see “New/Edit Application” on page 314.

Note: The hierarchies in the Real User Application view are also displayed in the All RUM Monitors View and the End User Monitors View.

The Real User Applications view generally contains the following hierarchical structure:



The TQL for the view is built as follows:



Note: The TQL nodes use the internal names for the CITs.

CI Types

This section provides a description of each CIT in the Real User Applications view.

The CITs are:

- **Application.** An Application CI is created for, and with the same name as, each application configured in End User Management Administration.

Note: The Application CI does not show information on volume, even though the Volume KPI is defined for each of the child CIs. Volume does not propagate up to Application, because it shows volume of different traffic types for each of the child groups, and these cannot be logically amalgamated.

- **Business Process Group.** Business Process Group CIs are created automatically with a default name by HP Business Availability Center.
- **Business Process Step.** Business Process Step CIs are added automatically by HP Business Availability Center using the names of the pages and transactions configured for the application in End User Management Administration.
- **End User Management Application Related Group.** An End User Management Application Related Group CI is automatically created for each application configured in End User Management Administration, using a default name from HP Business Availability Center.
- **RUM Application Error Monitor.** A RUM Application Error Monitor CI is automatically created for, and with the same name as, each error event configured for the application in End User Management Administration.
- **RUM Errors Events.** A RUM Error Event CI is created with a default name by HP Business Availability Center for each application configured in End User Management Administration which has error events defined.
- **RUM HTTP Errors Monitor.** A RUM HTTP Error Monitor CI is automatically created for, and with the same name as, each HTTP error event configured for the Real User Monitor engine in End User Management Administration. When a new Real User Monitor engine is created in End User Management Administration, four default HTTP error events are automatically created for the engine (bad user request, request not found, request refused, and server error), and the corresponding RUM HTTP Error Monitor CIs are added to the Application branch in the views.

- ▶ **RUM Informational Event Monitor.** A RUM Informational Event Monitor CI is automatically created for, and with the same name as, each informational error event configured for the application in End User Management Administration.
- ▶ **Rum Informational Events.** A RUM Informational Event CI is created with a default name by HP Business Availability Center for each application configured in End User Management Administration which has informational error events defined.
- ▶ **RUM Page Monitor.** A RUM Page Monitor CI is automatically created for each page that is configured for the application in End User Management Administration. The name of the CI comprises the page name and the word **monitor** (for example, **p1 monitor**).
- ▶ **RUM Session Monitor.** RUM Session Monitor CIs are created with a default name by HP Business Availability Center.
- ▶ **RUM Transaction Monitor.** A RUM Transaction Monitor CI is automatically created for each transaction that is configured for the application in End User Management Administration. The name of the CI comprises the transaction name and the word **monitor** (for example, **transaction1 monitor**).

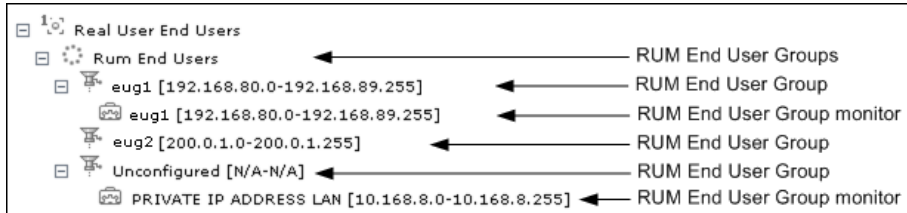
Real User End Users View

The Real User End Users view displays data for the end-user groups that are configured for Real User Monitor in End User Management Administration. The data includes information for each end-user group on the availability, performance, and volume of sessions that were accessed by end users.

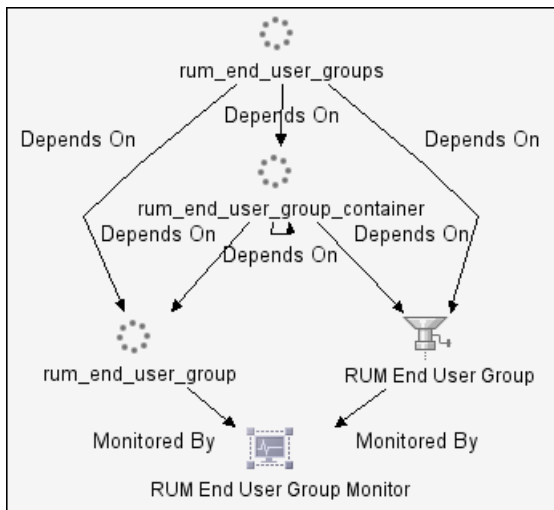
If IP addresses that have not been configured in end-user groups in End User Management Administration are received in Real User Monitor samples, then a hidden Dynamic Node Factory creates a separate branch for them in the view, under a RUM End User Group CI called **Unconfigured**.

For information on configuring end-user groups to be monitored, see “New/Edit End-User Group” on page 328.

The Real User End Users view generally contains the following hierarchical structure:



The TQL for the view is built as follows:



Note: The TQL nodes use the internal names for the CITs.

CI Types

This section provides a description of each CIT in the Real User End Users view.

The CITs are:

- ▶ **RUM End User Groups.** RUM End User Groups CIs are created automatically by HP Business Availability Center using a default name.
- ▶ **RUM End User Group.** A RUM End User Group CI is created automatically for each end-user group configured in End User Management Administration. The name comprises the configured end-user group name, together with the IP range of the end-user group.
- ▶ **RUM End User Group Monitor.** A RUM End User Group Monitor CI is automatically created for each end-user group configured in End User Management Administration that has been received in Real User Monitor samples. The name comprises the end-user group name together with the IP range of the end-user group.

In addition, a RUM End User Group Monitor CI called **Private IP Address Lan** (with an IP range) is created for IP addresses received in Real User Monitor samples, but not included in end-user groups configured in End User Management Administration.

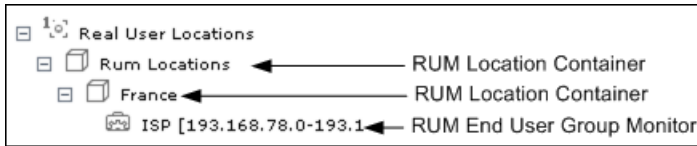
Real User Locations View

The Real User Locations view displays data for end-user groups, organized by location. The locations displayed are those configured in End User Management Administration. The data includes information on the availability, performance, and volume of sessions that were accessed by end users.

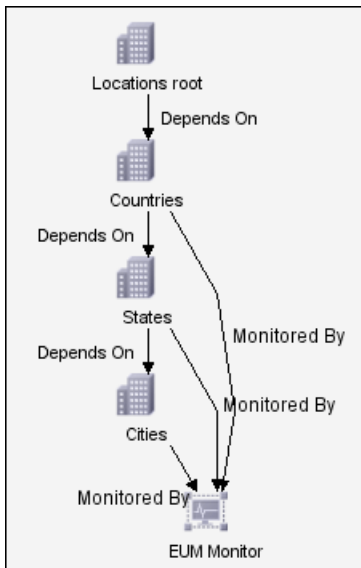
If IP addresses that have not been configured in end-user groups in End User Management Administration are received in Real User Monitor samples, then a hidden Dynamic Node Factory creates a separate branch for them in the view, under a RUM Location Container CI called **Unknown**.

For information on configuring end-user groups to be monitored, see “New/Edit End-User Group” on page 328.

The Real User Locations view contains the following hierarchical structure:



The TQL for the view is built as follows:



Note: The TQL nodes use the internal names for the CITs.

CI Types

This section provides a description of each CIT in the Real User Locations view.

The CITs are:

- **RUM Location Container.** A RUM Location Container CI is created for each location defined in End User Management Administration (for end-user groups), when data is received for that location in the Real User Monitor samples. A RUM Location Container CI called **Unknown** is created for samples without a configured location.
- **RUM End User Group Monitor.** RUM End User Group Monitor CIs are created for each end-user group for which an IP address has been received in the Real User Monitor samples. The name comprises the configured end-user group name together with the IP range of the end-user group.

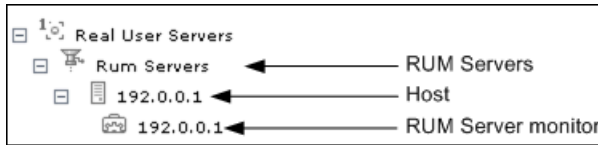
In addition, a RUM End User Group Monitor CI called **Private IP Address Lan** (with an IP range) is created for IP addresses received in Real User Monitor samples, but not included in end-user groups configured in End User Management Administration.

Real User Servers View

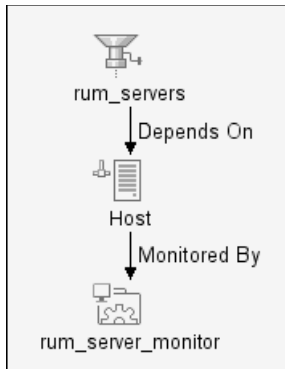
The Real User Servers view displays information on bandwidth usage and server errors for the servers monitored by Real User Monitor.

For information on configuring servers to be monitored, see “New/Edit Server Name” on page 352.

The Real User Servers view contains the following hierarchical structure:



The TQL for the view is built as follows:



Note: The TQL nodes use the internal names for the CITs.

CI Types

This section provides a description of each CIT in the Real User Servers view.

The CITs are:

- **RUM Servers.** The RUM Servers CI is automatically created with a default name by HP Business Availability Center.
- **Host.** A Host CI is automatically created for each host (server) for which information has been received in the Real User Monitor samples. If a name has been defined for the server in End User Management Administration, the CI uses the that name. Otherwise, the CI name will generally be the IP address of the host.
- **RUM Server monitor.** A RUM Server Monitor CI is automatically created under each Host CI, using the same name.

All RUM Monitors View

The All RUM Monitors view includes all of the hierarchies from other views for Real User Monitor views. For details on these hierarchies, see the following sections:

- “Real User Applications View” on page 274
- “Real User End Users View” on page 277
- “Real User Locations View” on page 279
- “Real User Servers View” on page 282

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Real User Monitor Reports

This chapter describes:	On page:
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Overview of Real User Monitor Reports

Real User Monitor reports enable you to monitor the experience of real users that access your application, regardless of the location of these users. This helps you track real-user performance and availability, and assess the business impact of your application on real users across multiple domains and geographical regions.

The following are the main Real User Monitor reports:

Global Statistics

The Global Statistics report contains tables displaying general page, end-user, and broken link data that is not related to the specific pages and end-users that you define for Real User Monitor in End User Management Administration. To configure monitoring settings for Global Statistics report data, see “Edit General Settings” on page 304. For details on the Global Statistics report, see “Global Statistics Report” on page 443.

Page Summary

The Page Summary report displays data for the monitored Web pages that you configure in End User Management Administration. For information on configuring Web pages to be monitored, see “New/Edit Page” on page 339. For details on the Page Summary report, see “Page Summary Report” on page 461.

Transaction Summary

The Transaction Summary report displays data for monitored transactions that you configure in End User Management Administration. For information on configuring transactions to be monitored, see “New/Edit Transaction” on page 362. For details on the Transaction Summary report, see “Transaction Summary Report” on page 508.

End User Summary

The End User Summary report displays data for monitored end-user groups that you configure in End User Management Administration. For information on configuring end-user groups to be monitored, see “New/Edit End-User Group” on page 328. For details on the End-User Summary report, see “End User Summary Report” on page 407.

Server Summary

The Server Summary report displays data for the servers that are monitored by the Real User Monitor probe. For information on configuring the probe to monitor specific servers, see “New/Edit Probe” on page 345. To assign a specific name to a monitored server, see “New/Edit Server Name” on page 352. For details on the Server Summary report, see “Server Summary Report” on page 479.

Session Analyzer

The Session Analyzer report displays data for all sessions in monitored applications that you configure in End User Management Administration. Sessions in applications that have not been configured for monitoring are also reported as part of a default entity for other applications in the Real User Monitor engine. For information on configuring applications to be monitored, see “New/Edit Application” on page 314. For details on the Session Analyzer report, see “Session Analyzer Report” on page 486.

Event Count Over Time

The Event Count Over Time report displays data for all events in monitored applications that you configure in End User Management Administration, broken down by time intervals. For information on configuring applications to be monitored, see “New/Edit Application” on page 314. For details on the Event Count Over Time report, see “Event Count Over Time Report” on page 432.

Event Summary

The Event Summary report displays a summary of events in monitored applications that you configure in End User Management Administration. For information on configuring applications to be monitored, see “New/Edit Application” on page 314. For details on the Event Summary report, see “Event Summary Report” on page 438.

Business Process Distribution

The Business Process Distribution report shows transaction run and transaction response time data over time for the transactions that you configure in End User Management Administration. For information on configuring transactions to be monitored, see “New/Edit Transaction” on page 362. For details on the Business Process Distribution report, see “Business Process Distribution Report” on page 395.

Note: You can also create custom reports and trend reports using Real User Monitor data. For details on creating these reports, see “Custom Report Manager” in *Custom Reporting and Alerting*.

Aggregating Real User Monitor Data

The Real User Monitor engine sends data samples to Business Availability Center, which aggregates the data for use in Real User Monitor reports. For details on Business Availability Center data aggregation, see “Data Aggregation” in *Reference Information*.

There are nine data sample types that the Real User Monitor engine aggregates itself, before sending them to Business Availability Center. Once received in Business Availability Center, these pre-aggregated data samples are further aggregated by Business Availability Center on a daily basis. The following table lists the data sample types, the Real User Monitor report for which they are used, and their aggregation period in Real User Monitor:

Data Sample Type	Real User Monitor Report	Aggregation Period in Real User Monitor
Top Domain	Global Statistics	Every hour
Top Page	Global Statistics	Every hour
Missing Component	Global Statistics	Every five minutes
Page with Most Errors	Global Statistics	Every five minutes
Slow Domain	Global Statistics	Every five minutes
Slow Page	Global Statistics	Every five minutes
Domain	End User Summary	Every five minutes
Page	Page Summary	Every five minutes
Server	Server Summary	Every five minutes

You can change the aggregation period of these data sample types in the Real User Monitor engine JMX console. For details on changing the aggregation period, see “Using the HP Real User Monitor JMX Console” in the *Real User Monitor Administration* PDF.

Viewing Session Details in the Session Analyzer Report

When you view session details from the Session Analyzer report, the report is regenerated and contains the most current data for the selected session. This means that if the session was still open when the Session Analyzer report was originally generated, the data included in the Session Detail page will be more up to date, and may differ from that included in the Session Analyzer report for the same session.

When viewing session details, all the pages that are included in all monitored application sessions that started on the same day as the application session for which you are viewing data, and that are part of the entire application server session, are displayed. For example, in End User Management Administration you configure three applications. My_application_A consists of page_1, page_2, and page_3, my_application_B consists of page_4, page_5, and page_6, and my_application_C consists of page_7, page_8, and page_9. You log in to Business Availability Center and at 11:59 PM you hit page_1. After midnight (that is, when the date has changed) you hit all the other pages. You then log out of Business Availability Center. You run the Session Analyzer report for my_application_B and the session described above is included in the report and shows 3 page hits (page_4, page_5, and page_6), but when you drill down to view session details, all the pages from my_application_B and my_application_C are displayed and not only the pages for my_application_B. The pages for my_application_A are not displayed as the application session was started on the previous day to the requested application (my_application_B).

Note:

- ▶ Events displayed when viewing session details are the events that occurred only on the pages configured in End User Management Administration as being part of the application.
 - ▶ When clicking on the breadcrumb to return to the Session Analyzer report, the report is not regenerated and the original Session Analyzer report is redisplayed.
-

Drilling Down Within Real User Monitor Reports

In each of the reports, except the Global Summary report, it is possible to drill down to view more detailed information about end user groups, pages, events, transactions, servers, and sessions, depending on the specific report. To drill down within a report, select a specific row in the report by clicking on it and then click the required drill down button.

When you drill down within a report, or move from one report to another, any active filters that have been set are automatically applied to the new report. However, if you use the breadcrumb link to return to a previously displayed report, the current active filters are not used and the original filters for the report in question are applied, until you regenerate the report or generate a different report.

For details on active filters, see “Active Filters Dialog Box” on page 378.

Displaying End-User Names in Reports

End-user names are displayed in reports for end users that have been configured in End User Management Administration, or that are included in the predefined list of end users and domains that is part of Business Availability Center. For details on configuring end users in End User Management Administration, see “New/Edit End-User Group” on page 328.

Analyzing the Business Process Distribution Report

You use the Business Process Distribution report to pinpoint the Real User Monitor transactions with the greatest number of runs and the highest session popularity. You then drill down in this report to view the individual sessions in which these transactions were run. You can also use the Business Process Distribution report to pinpoint the transactions that were problematic in terms of response time and availability and drill down so that you can isolate the sessions, and pages within the sessions, that were problematic.

To analyze the Business Process Distribution report:

- 1 Select a transaction, based on the total number of runs for the transaction as well as the transaction's session popularity (or response time/availability data), and click the **View Sessions** button. The Sessions page opens, displaying data for each session in which the selected transaction was run and a transaction snapshot was collected, as well as certain key statistic averages of all the displayed sessions.



Select a session to use for script template generation							
Session Statistics - Averages							
Session duration [hh:mm:ss]: 00:00:18				HTTP errors: 0.0			
Application errors: 0.0				Total pages: 11.554			
Sessions Containing Snapshots for All Pages							
User name	Start time	Session duration [hh:mm:ss]	Application errors	HTTP errors	Total pages	Details	
192.168.83.87	2/1/06 1:35 AM	00:00:06	0	0	9		
192.168.83.87	2/1/06 1:35 AM	00:00:03	0	0	9		
192.168.83.87	2/1/06 1:35 AM	00:00:02	0	0	9		
192.168.83.87	2/1/06 1:35 AM	00:00:05	0	0	9		
192.168.83.87	2/1/06 1:35 AM	00:00:07	0	0	9		
192.168.83.87	2/1/06 1:35 AM	00:00:07	0	0	9		
192.168.83.87	2/1/06 1:34 AM	00:00:04	0	0	9		
192.168.83.87	2/1/06 1:28 AM	00:00:07	0	0	10		
192.168.83.87	2/1/06 1:28 AM	00:00:04	0	0	9		
192.168.83.87	2/1/06 1:28 AM	00:00:06	0	0	10		
192.168.83.87	2/1/06 1:28 AM	00:00:07	0	0	9		
192.168.83.87	2/1/06 1:28 AM	00:00:03	0	0	9		
192.168.83.87	2/1/06 1:27 AM	00:00:06	0	0	9		
192.168.83.87	2/1/06 1:27 AM	00:00:03	0	0	9		
192.168.83.87	2/1/06 1:27 AM	00:00:01	0	0	8		
192.168.83.87	2/1/06 1:21 AM	00:00:05	0	0	9		
192.168.83.87	2/1/06 1:21 AM	00:00:08	0	0	10		
192.168.83.87	2/1/06 1:21 AM	00:00:03	0	0	9		
192.168.83.87	2/1/06 1:20 AM	00:00:05	0	0	9		

For additional information on the Sessions page, see the “Session Analyzer Report” on page 486.



- 2 Select a session, based on page hit and error data, and click the **View Session Details** button. The Session Details page opens, displaying general session and event information as well a list of all the pages accessed as part of the session and the events and response time for each page. The pages that were included in the selected transaction's definition are highlighted.

Properties			
Start time:	2/1/06 1:28 AM	End user group:	RnD
Overall traffic [KB]:	186.82	IP address:	192.168.83.87
Duration [hh:mm:ss]:	00:00:07	Host name:	brake.global.com
Operating system:	Windows	User name:	N/A
Browser:	Internet Explorer 6.0	Server IP:	192.168.83.56
Location:	USA, California, Los Angeles	Arrived from:	http://casanova:8080/jpetstore/

Pages			
			Session Replay
Start time ▲	Page	Events	Response time [seconds]
2/1/06 01:28:23 AM	http://casanova:8080/jpetstore/	-	1.81
2/1/06 01:28:25 AM	http://casanova:8080/jpetstore/	-	0.18
2/1/06 01:28:29 AM	Index	-	0.05
2/1/06 01:28:29 AM	SearchProduct	-	0.22
2/1/06 01:28:29 AM	http://casanova:8080/jpetstore/shop/switchSearchListPage.shtml?pageDirection=next	-	0.26
2/1/06 01:28:30 AM	http://casanova:8080/jpetstore/shop/viewProduct.shtml?productId=K9-RT-02	-	0.02
2/1/06 01:28:30 AM	http://casanova:8080/jpetstore/shop/viewItem.shtml?itemId=EST-25	-	0.01
2/1/06 01:28:30 AM	AddItemToCart	-	0.03
2/1/06 01:28:30 AM	http://casanova:8080/jpetstore/shop/check.out.shtml	-	0.01
2/1/06 01:28:30 AM	http://casanova:8080/jpetstore/shop/newOrderForm.shtml	-	0.01

Note: Event data is displayed only if you configured events for the application with which the transaction you are viewing is associated. For information on events and their configuration, see “Real User Monitor Administration User Interface” on page 303.

For additional information on the Session Details page, see “Session Details Page” on page 490.

HTTP Error Codes

The following tables show the various categories of HTTP errors and the error codes they include, that are predefined in Business Availability Center. For information on configuring HTTP error codes, see “New/Edit Global HTTP Error Event” on page 334.

Bad User Requests

The following codes indicate bad user requests:

Code	Description
400	Bad Request
405	Method Not Allowed
406	Not Acceptable
408	Request Timeout
411	Length Required
414	Request - URI Too Large
416	Requested range not satisfiable
417	Expectation Failed

Refused Requests

The following codes indicate refused requests:

Code	Description
402	Payment Required
403	Forbidden
407	Proxy Authentication Required
409	Conflict
410	Gone

Code	Description
412	Precondition Failed
413	Request Entity Too Large
415	Unsupported Media Type

Requests Not Found

The following code indicates requests not found:

Code	Description
404	Not Found

Server Errors

The following codes indicate server errors:

Code	Description
500	Internal Server Error
501	Not Implemented
502	Bad Gateway
503	Service Unavailable
504	Gateway Timeout
505	HTTP Version not supported

Changing the Default Number of Rows Displayed in a Table

By default, each table in a report displays a maximum of 20 rows. You can configure HP Business Availability Center to display a different number of rows in a table, in the Infrastructure Settings Manager.

To modify the number of rows displayed in a table:

To modify the number of rows displayed in a table, select **Admin > Platform > Setup and Maintenance > Infrastructure Settings**, choose **Applications**, select **End User/System Availability Management**, and locate the **Max Table Rows** entry in the **End User/System Availability Management - Data** table. Modify the value to the number of rows you want to be displayed in a table.

Changing the Number of Rows Returned from the Database for the Session Analyzer Report and the Event Log

By default, the maximum number of rows that are returned from the database for the Session Analyzer report and the Event Log, which is accessed by drilling down from the Event Summary report, is 200. You can configure HP Business Availability Center to return a different number of rows from the database, in the Infrastructure Settings Manager.

To modify the number of rows displayed:

Select **Admin > Platform > Setup and Maintenance > Infrastructure Settings**, choose **Applications**, select **End User/System Availability Management**, and locate the **Max rows returned from the database in EUM Reports** entry in the **End User/System Availability Management - Data** table. Modify the value to the number of rows you want to be returned.

Retrieving Snapshots Directly From the Real User Monitor Engine

By default, the Real User Monitor Session Replay applet communicates directly with the Real User Monitor engine to retrieve snapshots. You can configure HP Business Availability Center so that the Real User Monitor Session Replay applet will communicate with the Real User Monitor engine via the HP Business Availability Center Gateway Server, instead of directly. This enables the Real User Monitor Session Replay applet to work properly when there is no network communication between a client machine and the Real User Monitor engine.

To change the way the Real User Monitor Session Replay applet communicates with the Real User Monitor engine:

Select **Admin > Platform > Setup and Maintenance > Infrastructure Settings**, choose **Applications**, select **End User/System Availability Management**, and locate the **Retrieve RUM snapshots directly from RUM engine** entry in the **End User/System Availability Management - Data** table. Change the setting to **true** if you want the Real User Monitor Session Replay applet to communicate directly with the Real User Monitor engine. Change the setting to **false** if you want the Real User Monitor Session Replay applet to communicate with the Real User Monitor engine via the HP Business Availability Center Gateway Server.

Note: You can also change this setting in the **Advanced Settings** pane when configuring a Real User Monitor engine in End User Management Administration. For details, see “New/Edit Real User Monitor Engine” on page 347.

Enabling Summary Rows in Real User Monitor Reports

You can configure HP Business Availability Center to display a summary row for custom Real User Monitor summary reports, in the Infrastructure Settings Manager.

To enable summary rows in custom Real User Monitor summary reports:

Select **Admin > Platform > Setup and Maintenance > Infrastructure Settings**, choose **Applications**, select **End User/System Availability Management**, and locate the **Show Summary Row in Real User Monitor Summary Reports** entry in the **End User/System Availability Management - Data** table. Change the settings to **true** to enable the summary row to be displayed.

Note:

- Enabling the summary row may cause some delay in generating the summary reports.
 - The summary row takes into account pages that you cannot view in the table if you have activated the thresholds filter. It does not take into account pages that have been filtered out using the other active filter tabs.
-

Configuring Real User Monitor Reports for Auto Generation

All the Real User Monitor reports can be configured for auto generation. In addition, the Session Analyzer, Event Count Over Time, and Event Summary reports, as well as the Session Details, Pages Details and Event Log pages accessed when drilling down within reports, can be customized to achieve different behavior, looks, and displays. The features available for customization in these reports and pages are:

- The addition of headers and footers.
- Changing report elements for different looks and displays.

For details on customizing reports, see “Customizing Reports” in *Platform Administration*.

Troubleshooting and Limitations

This section includes troubleshooting and limitations for Real User Monitor reports.

Drilling Down to HP Diagnostics

- If HP Diagnostics has been registered and enabled on your Business Availability Center system, you can drill down directly to the HP Diagnostics Server Requests view from the Real User Monitor Page Summary report, the Page Summary Over Time report, and the Session Analyzer report. You register and enable HP Diagnostics in Business Availability Center using **Admin > Diagnostics**. For details on working with the Diagnostics Server Requests view, see the *HP Diagnostics User's Guide*. When drilling down to the Diagnostics Server Requests view from Real User Monitor reports, note the following:
 - If the URL of a page you have configured for monitoring in End User Management Administration has passed through a Web server that uses URL rewriting, the URL in Real User Monitor will differ from the corresponding URL in HP Diagnostics and a match will not be found when drilling down.

- ▶ If an application is installed on multiple servers working behind a load balancer, the URL of a page in Real User Monitor will have multiple corresponding URLs in HP Diagnostics. In such a case, when you drill down to the Server Requests view in HP Diagnostics all the corresponding URLs will be displayed, but only one of those URLs will be selected.
- ▶ When you drill down to the Server Requests view in HP Diagnostics from a Real User Monitor report, you will only view server requests that are included in the slowest 100 server requests in HP Diagnostics.
- ▶ Parameters aggregation is enabled by default in the Diagnostics Probe points file. If you have turned off parameter aggregation in the Probe points file, and the URL that you are drilling down from in the Real User Monitor report includes a parameter, an exact match will not be found when drilling down and you will have to manually locate the server request in the Server Requests view in HP Diagnostics.
- ▶ If the application server handling a particular page is not monitored by a Diagnostics probe, there will be no data displayed when you click the View Diagnostics Data button.

Part IV

User Interface

20



Real User Monitor Administration User Interface

This chapter describes the pages and dialog boxes that are part of the Real User Monitor Administration user interface, listed alphabetically.

This chapter describes:	On page:
Edit General Settings	304
New/Edit Application	314
New/Edit End-User Group	328
New/Edit Error Page Event	332
New/Edit Global HTTP Error Event	334
New/Edit Host Alias	337
New/Edit Page	339
New/Edit Page Size Event	343
New/Edit Probe	345
New/Edit Real User Monitor Engine	347
New/Edit Server Name	352
New/Edit Session Pages Event	354
New/Edit Session Unavailable Pages Event	356
New/Edit Text Pattern Event	358
New/Edit Transaction	362
Sensitive Data Dialog Box	366

This chapter describes:	On page:
Session Property Dialog Box	368
URL Builder	371

Edit General Settings

Description	<p>Configure general monitoring settings for all pages, applications, transactions, servers, and end users being monitored by the Real User Monitor engine.</p> <p>To access: Select Admin > End User Management, select the Monitors tab and right-click General Settings (under Engine Settings) for an existing engine in the monitor tree. Click Edit in the displayed menu.</p>
Important Information	Use the up and down arrow buttons   to expand and collapse the panels.
Included in Tasks	“Configure Real User Monitor Engine Settings” on page 268
Useful Links	“Naming Conventions” in <i>Reference Information</i>

The General Settings page comprises the following panels:

- “Page Settings” on page 305
- “Transaction Settings” on page 306
- “Server and End User Group Settings” on page 307
- “Data Reporting Settings” on page 308
- “Broken Link Referral Settings” on page 311
- “Session Reset Settings” on page 312

Page Settings

Description	Configure the default threshold settings that are displayed when you configure a new Page in Real User Monitor. The page and server times you enter here are those displayed by default when you configure a new application in Real User Monitor.
--------------------	--

The Page Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
Availability (%)	Enter the page availability threshold, as a percentage. If the availability of a page falls within this threshold, the page’s availability is displayed in green in the Real User Monitor reports, otherwise it is displayed in red.
Page Time (seconds)	Enter the page download time threshold, in seconds. If a page is downloaded within this amount of time, its page time is displayed in green in the Real User Monitor reports, otherwise it is displayed in red.

GUI Element	Description
Server Time (seconds)	Enter the server time threshold for the page, in seconds. If the server time for a page falls within this threshold, the page's server time is displayed in green in the Real User Monitor reports, otherwise it is displayed in red. Note: The server time threshold must be lower than the page download time threshold.
Timeout (seconds)	Enter, in seconds, the amount of time after which Real User Monitor considers the downloading of a page's components to have timed out.

Transaction Settings

Description	Configure the default threshold settings that are displayed when you configure a new Transaction in Real User Monitor.
--------------------	--

The Transaction Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
Availability (%)	Enter the transaction availability threshold, as a percentage. If the availability of a transaction falls within this threshold, the transaction's availability is displayed in green in the Real User Monitor reports, otherwise it is displayed in red.
Net Time (seconds)	Enter the net transaction time threshold, in seconds. If the net time of a transaction falls within this threshold, the transaction's net time is displayed in green in the Real User Monitor reports, otherwise it is displayed in red.

GUI Element	Description
Server Time (seconds)	Enter the server time threshold for the transaction, in seconds. If the server time for a transaction falls within this threshold, the transaction's server time is displayed in green in the Real User Monitor reports, otherwise it is displayed in red. Note: This threshold must be lower than the total time and net time thresholds.
Timeout (seconds)	Enter, in seconds, the amount of time after which Real User Monitor considers the downloading of a page within a transaction to have timed out.
Total Time (seconds)	Enter the total transaction time (download time + think time) threshold, in seconds. If the total time of a transaction falls within this threshold, the transaction's total time is displayed in green in the Real User Monitor reports, otherwise it is displayed in red.

Server and End User Group Settings

Description	Configure the server availability threshold for all servers, as well as the default latency threshold setting that is displayed when you define a new end-user group.
--------------------	---

The Server and End User Group Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
Latency (milliseconds)	Enter the average network latency threshold for each end-user within an end-user group subnet, in milliseconds. If the latency of an end-user falls within this threshold, the end-user's latency is displayed in green in the Real User Monitor reports, otherwise it is displayed in red.
Server Availability (%)	Enter the server availability threshold, as a percentage. If the availability of a server falls within this threshold, the server's availability is displayed in green in the Real User Monitor reports, otherwise it is displayed in red.

Data Reporting Settings

Description	Configure the collection parameters for global reporting statistics.
--------------------	--

The Data Reporting Settings panel includes the following elements (listed alphabetically):


GUI Element	Description
Most Active End Users	<p>Select this checkbox and configure the maximum number of most active end users you want Real User Monitor to collect per hour. You can define whether activity is measured by the number of page requests, or the amount of bandwidth used. To instruct Real User Monitor not to collect this information, clear the checkbox.</p> <p>Note: A maximum number of 100 most active end-users can be collected.</p>
Most Popular Pages	<p>Select this checkbox and configure the maximum number of most popular pages—that is, the pages that received the highest number of end-user requests (hits)—you want Real User Monitor to collect per hour. To instruct Real User Monitor not to collect this information, clear the checkbox.</p> <p>Note: A maximum number of 100 most popular pages can be collected.</p>
Pages with Most Errors	<p>Select this checkbox and configure the maximum number of pages with most errors—that is, the pages on which the greatest number of HTTP and application errors occurred—you want Real User Monitor to collect during each five-minute period. You can define the minimum number of hits required for a page's data to be collected. To instruct Real User Monitor not to collect this information, clear the checkbox.</p> <p>Note: A maximum of 20 slowest pages can be collected.</p>

GUI Element	Description
Slowest End Users	<p>Select this checkbox and configure the maximum number of slowest end users—that is, the end users whose average network latency was highest—you want Real User Monitor to collect during each five-minute period. You can define the minimum number of hits required for an end user's data to be collected. To instruct Real User Monitor not to collect slowest end-user data, clear the checkbox.</p> <p>Note: A maximum of 50 slowest end-users can be collected. The minimum number of hits required cannot exceed 10,000.</p>
Slowest Pages	<p>Select this checkbox and configure the maximum number of slowest pages—that is, the pages that took the greatest amount of time to download—you want Real User Monitor to collect during each five-minute period. You can define the minimum number of hits required for a page's data to be collected. To instruct Real User Monitor not to collect this information, clear the checkbox.</p> <p>Note: A maximum of 50 slowest pages can be collected. The minimum number of hits required cannot exceed 10,000.</p>
Snapshot on Event	<p>Select this checkbox and configure the maximum number of previous, session pages (including the page with the error or event itself) that you want the Real User Monitor to report when a page with a global HTTP error or text event is encountered. This is used as the setting for the default application and is also used as the default setting for other applications. To instruct Real User Monitor not to collect this information, clear the checkbox.</p> <p>Note: For snapshots to be reported by Real User Monitor, the Snapshot on Event checkbox must also be enabled in the application configuration and the HTTP global error or text event configuration.</p>

Broken Link Referral Settings

Description	Configure the number of broken links that Real User Monitor collects in a given time period, and define the hosts from which Real User Monitor collects broken link data.
Important Information	By default, no broken link referral settings are defined. Unless you define hosts in this section, no broken link data will be collected and no data will be displayed in the Broken Links table in the Global Statistics report.


The Broken Link Referral Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
	Click to delete a selected host name from the list of hosts from which to report broken link data. To select a host, select the checkbox at the left of the host name.
Broken Links	Select this checkbox and configure the maximum number of broken links you want Real User Monitor to collect during each five-minute period. To instruct Real User Monitor not to collect broken link data, clear the checkbox. Note: A maximum number of 50 broken links can be collected.
New Referring Host Name	Click the New Referring Host Name button to add a new host name to the list of hosts from which to report broken link data.
Referring Host Name(s)	Define the host names from which to report broken link data. If a user clicks a link on a page from one of these hosts and the link is broken, the broken link data is collected by Real User Monitor. If a user clicks a link on a page from a host that is not defined in this section, the data is ignored by Real User Monitor. Note: You need only enter the host part of the URL – for example, hp.com.



Session Reset Settings

Description	<p>Configure the parameters that will cause a session to be reported to Real User Monitor and a new session to be started.</p> <p>For example, in a call center, such as directory enquiries for a telephone company, a default session for an operator may be from the log-in at the beginning of a shift to the log-out at the end of a shift. However, you may wish to report a separate session for each inquiry handled by the operator ,so you can set the By URL setting to the URL of the page that begins each new inquiry. Whenever that page is accessed, the previous session will be closed and reported and a new session will be opened.</p>
--------------------	--

The Session Reset Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
	Click to delete a selected URL from the list of session delimiter URLs. To select a URL, select the checkbox at the left of it.
Behavior	Shows for each defined URL in the list, whether it should be included as the first page of a new session, or the last page of an old session on reset.
By Timeout	Enter, in minutes, the maximum time that a session can be open before it is reported to Real User Monitor and a new session is started.
By URL	Define the URLs which, when accessed, will cause the current session to be reported to Real User Monitor and a new session to be started.
End Session	Click the End Session button to include the URL as the last page of the old session on reset. Note: By default, the URL is included as the first page of the new session on reset.
New Session Delimiter URL	Click the New Session Delimiter URL button to open the URL Builder, where you can define a URL as a session delimiter. For details on the URL Builder, see “URL Builder” on page 371.
Session Delimiter URL	Lists the defined session delimiter URLs.
Start Session	Click the Start Session button to include a selected URL as the first page of the new session on reset. Note: This is the default used for new session delimiter URLs.

New/Edit Application

Description	<p>Add a new application to be monitored by Real User Monitor, or edit an existing application.</p> <p>To access:</p> <ul style="list-style-type: none"> ➤ To create a new application, select Admin > End User Management, select the Monitors tab and right-click Applications in the monitor tree. Click New Application in the displayed menu. ➤ To edit an existing application, select Admin > End User Management, select the Monitors tab and right-click an existing application (under Applications) in the monitor tree. Click Edit in the displayed menu.
Important Information	<ul style="list-style-type: none"> ➤ If an application or session passes through more than one server, for example in the case of load balancing or server delegation, only the first server listed in the session will be reported. ➤ If an application or session includes resources from more than one server, for example images in a page coming from a separate image server, these resources will not be correlated for statistical purposes as they do not contain the session identifier. ➤ An application can be copied from one Real User Monitor engine to another, but cannot be copied within the same Real User Monitor engine. ➤ Use the up and down arrow buttons   to expand and collapse the panels.
Included in Tasks	“Configure Applications” on page 269
Useful Links	“Naming Conventions” in <i>Reference Information</i>

The Application page comprises the following panels:

- “Main Settings” on page 315
- “Application Location Settings” on page 316
- “User Name Detection” on page 317
- “Session Identification” on page 320

- “Page Names Configuration” on page 321
- “Snapshot Collection Settings” on page 323
- “Session Properties” on page 325
- “Advanced Settings” on page 327

Main Settings


The Main Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
Enable	Select the Enable checkbox to enable monitoring for the application, or clear the checkbox to disable monitoring. Default value: Enabled
Enable Application Clickstream	Select the Enable Application Clickstream checkbox to enable snapshots of the pages and related events included in the application to be recorded, or clear the checkbox to disable this feature. Default value: Enabled Note: Disabling the Application Clickstream results in snapshots of the pages and events not being available for viewing in the Session Analyzer report.
Name	Enter the name you want to assign the application. Syntax Exceptions: Cannot exceed 100 characters. Note: The name must be unique.
Page time threshold	Configure the page time threshold, in seconds, to be used as default for all pages being monitored as part of the application.

GUI Element	Description
Probe	Select the probes to be used in monitoring the application. Use the CTRL key to select multiple probes, or choose All to select all the probes within the Real User Monitor engine.
Server time threshold	Configure the server time threshold, in seconds, to be used as default for all pages being monitored as part of the application.

Application Location Settings

The Application Location Settings panel includes the following elements (listed alphabetically):


GUI Element	Description
	Click to delete a selected application server IP address or URL from the list.
<Bottom radio button>	Select to stipulate the URLs to be associated with the application you are defining.
<Top radio button>	Select to stipulate the application servers and ports to be associated with the application you are defining, by IP address.

GUI Element	Description
New Application URL	<p>Click the New Application URL button to open the URL Builder, where you configure a URL that you want to associate with the application you are defining. The URL appears in the list of Application URLs. Repeat this procedure for each URL you want to add to the list. For details on the URL Builder, see “URL Builder” on page 371.</p> <p>Note: Do not include a URL in more than one application otherwise it will not be associated with any of the applications you define.</p>
New IP Range	<p>Click the New IP Range button to enter the IP address, or IP range, of application servers you want to associate with the application you are defining and the port, or port range that the application server is using. Repeat this procedure for each application server you want to add.</p> <p>Syntax exceptions: A single IP address, or port number should be entered as is and ranges should be separated by a dash (-). For example, a range of IP addresses is entered as 110.132.10.96-110.132.10.99.</p> <p>Note: Do not associate an application server with more than one application otherwise it will not be associated with any of the applications you define.</p>

User Name Detection

Description	<p>Enables you to stipulate where to search for a user name in the application you are defining, so that the data for the sessions associated with the application will contain the names of the session users (or their IP addresses, if you select this option).</p>
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The User Name Detection panel includes the following elements (listed alphabetically):


GUI Element	Description
	Click to delete a selected login page URL from the list.
Advanced Criteria	Click the Advanced Criteria button to open the Advanced Finding and Retrieving dialog box, where you can enter the regular expression that represents the string within which you want Real User Monitor to locate the user name.
Advanced options	Select the radio button to enable you to configure a regular expression that represents the string within which you want Real User Monitor to locate the user name.
Between...and	Select the radio button to enable you to configure the strings between which the user name can be located. Enter the strings in the Between and and text boxes. Note: If you select IP address in the Search in field, the Between and and text boxes are irrelevant and are greyed out.
Field/Tag/Parameter	If you select HTTP header , Content , or Parameter in the Search in field, enter the specific HTML tag, header parameter, or parameter within which the user name can be located.
New Login Page URL	Click the New Login Page URL button to open the URL Builder, where you configure the URL that you want to include in the Login Page URL list. For details on the URL Builder, see “URL Builder” on page 371. Note: The New Login Page URL button is enabled only if you select the Scan login pages radio button.

GUI Element	Description
Scan all pages	<p>Select the radio button to configure Real User Monitor to search for the user name in all the pages associated with the application.</p> <p>Note: For more efficient performance, it is recommended to configure specific login pages to be searched rather than configuring Real User Monitor to search all pages.</p>
Scan login pages	<p>Select the radio button to configure Real User Monitor to search for the user name in specific login pages that you define.</p> <p>Note: For more efficient performance, it is recommended to configure specific login pages to be searched rather than configuring Real User Monitor to search all pages.</p>
Search in	<p>Select the string in which you want Real User Monitor to locate the user name: All Parameters, HTTP header, Content, IP address or Parameter (for a single parameter).</p>
Use name translation	<p>Select the Use name translation file checkbox to configure Real User Monitor to translate the user name it locates.</p> <p>Note:</p> <ul style="list-style-type: none"> ➤ A name translation file called Login_Users.csv must be created in the <Real User Monitor engine root directory>\conf\resolver directory on the Real User Monitor engine machine. ➤ It is recommended that you select this option if you choose IP address in the Search in box. Otherwise, the user name will be reported only as an IP address.

Session Identification

Description	Enables you to configure where to search for the session ID of the application you are defining.
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The Session Identification panel includes the following elements (listed alphabetically):

GUI Element	Description
	Click to delete a selected session ID search.
In application type	Select the application type that is the same as, or similar to, the type of application you are defining. The parameter in which Real User Monitor will search for the session ID is automatically displayed in Search in Header fields... If the application you are defining does not match one of the default types listed, select User defined application to stipulate your own session identification parameters.
Search in Header fields...	If you select a default type of application in In application type , the parameter in which Real User Monitor will search for the session ID is displayed. If you select User defined application in In application type , enter the name of the parameter in which the session ID is located. This parameter will be searched for in Header fields, Parameters and Content tags.
Between...and	Enter strings within the parameter between which the session ID is located, if applicable.
Advanced options	Click the Advanced options radio button to enable the Advanced Criteria button.

GUI Element	Description
Advanced Criteria	Click the Advanced Criteria button to open the Advanced Finding and Retrieving dialog box, where you define regular expression you wish to use for locating the session ID.
New	Click the New button to configure additional parameters in which to search for the session ID, if it is not located in previously searched parameters.

Page Names Configuration

Description	<p>Enables you to configure how names are assigned to pages that have not been configured in End User Management Administration. You can specify an XML file to be used by the application to assign meaningful names to pages, and can also configure the application to use page titles as names.</p> <p>For details on assigning meaningful names to pages and configuring an XML file, see “Configuring Meaningful Page Names” in the <i>Real User Monitor Administration</i> PDF.</p>
Important Information	If you configure an XML file to be used and also select the option to use page titles, the application will first try to assign a name to the page using the XML file and only if unsuccessful will use the page title.

The Page Names Configuration panel includes the following elements (listed alphabetically):

GUI Element	Description
<p>Page Names Configuration file</p>	<p>Select an existing file that is available for the application from the dropdown list, or select user defined from the dropdown list and enter a new file name in the adjacent field.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ The full file name including the extension (.xml) must be entered. ▶ The files are located on the Real User Monitor engine machine in the <HPRUM>\conf\resolver\meaningful_pages directory.
<p>Use page title if a meaningful name is not assigned</p>	<p>Select this checkbox to enable the application to use page titles when assigning names to pages.</p>

Snapshot Collection Settings

Important Information	If both Session snapshot on event and Snapshot on event are enabled, Session snapshot on event is used.
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The Snapshot Collection Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
Resource caching	<p>Select this checkbox to store the static resources (such as images and style sheets) included in a session's pages on the Real User Monitor probe machine.</p> <p>Retrieving resources from the Real User Monitor probe machine, instead of the original monitored application's site, makes viewing snapshots and replaying sessions more reliable as the resources are always available, and does not add any extra burden on the application's performance.</p>
Session snapshot on event	<p>Select this checkbox to enable snapshots to be made of all the pages from the beginning of a session, up to and including the page on which a text event or global HTTP error that has been configured for session snapshots, occurs.</p> <p>Saving all the pages from the beginning of a session enables more accurate frames unification, thus improving session replay, but may adversely affect Real User Monitor probe performance.</p> <p>Note: For snapshots of all the pages from the beginning of a session to be saved by Real User Monitor, both the Session snapshot on event checkbox for the application, and the Save session snapshots checkbox for the HTTP global error or text event must be enabled.</p>



GUI Element	Description
<p>Snapshot on event</p>	<p>Select this checkbox to enable snapshots to be made of pages on which text events or global HTTP errors that have been configured for snapshots occur. Clear the check box to disable snapshots of event pages in the application.</p> <p>If you select this checkbox, enter the number of pages back for which snapshots should be made when an event occurs, including the event page itself. Using any number greater than one may adversely affect Real User Monitor probe performance.</p> <p>Note: For snapshots to be reported by Real User Monitor, the Snapshot on Event checkbox must also be enabled in the Real User Monitor engine configuration and the HTTP global error or text event configuration.</p>

GUI Element	Description
Snapshot on transaction detection	<p>Select this checkbox to configure a transaction snapshot collection schedule. Transaction snapshots can be viewed when displaying session details in the Session Analyzer report and are used to include the monitored real-user transactions in a VuGen script generated from the Business Process distribution Report.</p> <p>If you select this checkbox, configure whether you want to collect transaction snapshots immediately, during a single interval or at various points throughout the monitoring process, by clicking one of the following radio buttons:</p> <ul style="list-style-type: none"> ▶ Run now. If you select this option, specify the number of hours and minutes for which you want Real User Monitor to collect transaction snapshots. ▶ Run every. If you select this option, specify the days of the week, as well as the time and duration, for which you want to schedule Real User Monitor transaction snapshot collection. <p>Note: When transaction snapshot collection is configured, a significant amount of data is generated. Ensure that the duration for which transaction snapshots are collected is not excessive so that Real User Monitor is not overloaded.</p>



Session Properties

Description	<p>Enables you to configure session properties to be tagged by Real User Monitor. The tags can be used to filter sessions included in the Session Analyzer report and to view the tagged properties for a session when viewing the session details.</p>
Important Information	<ul style="list-style-type: none"> ▶ A maximum of five session properties can be configured for an application. ▶ The string extracted as the session property value cannot exceed 50 characters.



The Session Properties panel includes the following elements (listed alphabetically):

GUI Element	Description
	Click to delete a selected session property.
	Click to edit a selected session property.
New Session Property	Click the New Session Property button to configure a new session property for the application. The Session Property dialog box opens. For details, see “Session Property Dialog Box” on page 368.
Session Property	Lists the configured session properties for the application.

Advanced Settings

GUI Element	Description
	Click to delete a selected sensitive data configuration.
	Click to edit a selected sensitive data configuration.
Sensitive Data	Lists the configured sensitive data settings.
HTTP parameters to omit	Enter any HTTP POST and/or GET parameters (such as password parameters) that you want to exclude from Real User Monitor for security reasons. These parameters will not appear on Real User Monitor reports, or anywhere else in HP Business Availability Center. Use semicolons to separate the parameters you enter in this box.
HTTP parameter values to include for most popular pages	Enter any HTTP POST and/or GET parameters (such as session ID, or time stamp) that Real User Monitor should include as part of the page request, when assessing the pages that received the highest number of hits for inclusion in the Global Statistics report's Most Popular Pages table. Use semicolons to separate the parameters you enter in this box.
New Sensitive Data	Click the New Sensitive Data button to configure a new sensitive data setting for the application. The Sensitive Data dialog box opens. For details, see "New/Edit Error Page Event" on page 332.

New/Edit End-User Group

Description	<p>Add a new end-user group for which, when it accesses monitored servers, Real User Monitor will collect data. Also, edit an existing end-user group.</p> <p>To access:</p> <ul style="list-style-type: none"> ▶ To create a new end-user group, select Admin > End User Management, select the Monitors tab and right-click End User Groups in the monitor tree. Click New End User Group in the displayed menu. ▶ To edit an existing end-user group, select Admin > End User Management, select the Monitors tab and right-click an existing end-user group in the monitor tree. Click Edit in the displayed menu.
Important Information	<ul style="list-style-type: none"> ▶ An end-user group, or end-user group container, can be copied from one Real User Monitor engine to another, but cannot be copied within the same Real User Monitor engine. ▶ Use the up and down arrow buttons   to expand and collapse the panels.
Included in Tasks	“Configure the Real User Monitor Engine” on page 267
Useful Links	“Naming Conventions” in <i>Reference Information</i>

The End User Group page comprises the following panels:

- “Main Settings” on page 329

Main Settings



The Main Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
City	Select the city in which the IP range you are defining is located. Note: This field is enabled only when the Select a physical location checkbox is selected.
Country	Select the country in which the IP range you are defining is located. Note: This field is enabled only when the Select a physical location checkbox is selected.
Description	Enter the description of the end-user group, which you can view in End User Management only. Syntax exceptions: Cannot exceed 260 characters.
Enable	Select this checkbox to enable the end-user group configuration, or clear the checkbox to disable it. Default value: Enabled
End user group name	Enter the name of the end-user group. Syntax exceptions: Cannot exceed 100 characters. Note: The name must be unique.
From IP	Enter the starting IP address of the IP range (subnet) of the end-user group.

GUI Element	Description
<p>IP Resolution</p>	<p>Select one of the following methods by which the subnet is displayed in the Real User Monitor reports:</p> <ul style="list-style-type: none"> ▶ As entered. The defined IP range is displayed in the Real User Monitor reports according to the way in which you enter it in this dialog box. ▶ Class A. The IP addresses in the range you defined are displayed in the Real User Monitor reports according to the Class A network IP addressing method. ▶ Class B. The IP addresses in the range you defined are displayed in the Real User Monitor reports according to the Class B network IP addressing method. ▶ Class C. The IP addresses in the range you defined are displayed in the Real User Monitor reports according to the Class C network IP addressing method. ▶ According to RFC. The IP addresses in the range you defined are displayed in the Real User Monitor reports according to RFC class divisions (0.0.0.0 to 127.255.255.255 = Class A; 128.0.0.0 to 191.255.255.255 = Class B; 192.0.0.0 to 255.255.255.255 = Class C). ▶ Defined CIDR mask. The IP addresses in the range you defined are displayed in the Real User Monitor reports according to the mask (CIDR notations, 0 to 32) you define in the text box provided to the right of the selector.
<p>Latency threshold (milliseconds)</p>	<p>Enter the average network latency threshold in milliseconds, for each end user in the end-user group.</p>

GUI Element	Description
Monitoring conditions	Select one of the following options: <ul style="list-style-type: none"> ▶ Always. Instructs Real User Monitor to collect data for all traffic generated by end users within the end-user group. This data appears in the Real User Monitor reports. ▶ Never. Instructs Real User Monitor not to collect data for the end users within the end-user group. Data for the end-user group will not appear in the Real User Monitor reports.
Perform host name resolution	Select this checkbox to instruct Real User Monitor to use internal methods (such as the DNS, the NIS, or other internal files) to resolve the host name of each IP address within the subnet you are defining.
Select a physical location	Select this checkbox to configure the country, state, and city in which the IP range you are defining is located
State	Select the state in which the IP range you are defining is located. Note: This field is enabled only when the Select a physical location checkbox is selected.
To IP	Enter the ending IP address of the IP range (subnet) of the end-user group.

New/Edit Error Page Event

Description	<p>Add a new error page event to an application, or edit an existing error page event.</p> <p>An error page event is triggered when a specified page in an application encounters an error.</p> <p>To access:</p> <ul style="list-style-type: none"> ▶ To create a new error page event, select Admin > End User Management, select the Monitors tab and right-click the application in the monitor tree, for which you want to configure the event. Click New Error Page Event in the displayed menu. ▶ To edit an existing error page event, select Admin > End User Management, select the Monitors tab and right-click an existing error page event (within an application) in the monitor tree. Click Edit in the displayed menu.
Important Information	<p>Use the up and down arrow buttons   to expand and collapse the panels.</p>
Included in Tasks	<p>“Configure Applications” on page 269</p>
Useful Links	<p>“Naming Conventions” in <i>Reference Information</i></p>

The Error Page Event page comprises the following panels:



- “Main Settings” on page 333

Main Settings

The Main Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
Enable	Select this checkbox to enable the error page event configuration, or clear the checkbox to disable it. Default value: Enabled
Name	Enter the name of the error page event, which you can view in End User Management only. Syntax exceptions: Cannot exceed 100 characters. Note: The name must be unique.
Report as error	Select this checkbox to instruct Real User Monitor to report the error page event as an error event instead of an informational event.
URL	Displays the URL of the page which, if an error is encountered on it, will trigger the event.
URL Builder	Click the URL Builder button to open the URL Builder, where you define the URL for the page which, if an error is encountered on it, will trigger the event. For details on the URL Builder dialog box, see “URL Builder” on page 371.

New/Edit Global HTTP Error Event


Description	<p>Create new HTTP errors to be recorded by the Real User Monitor for reporting in Real User Monitor reports, or edit existing HTTP errors.</p> <p>To access:</p> <ul style="list-style-type: none"> ▶ To create a new HTTP error, select Admin > End User Management, select the Monitors tab and right-click Global HTTP Error Events (under Engine Settings) in the monitor tree. Click New Global HTTP Error Event in the displayed menu. ▶ To edit an existing HTTP error, select Admin > End User Management, select the Monitors tab and right-click an existing Global HTTP Error Event name (under Engine Settings > Global HTTP Error Events) in the monitor tree. Click Edit in the displayed menu.
Important Information	<ul style="list-style-type: none"> ▶ By default, the most common HTTP error codes are predefined under four global HTTP error events—Bad user request, Request not found, Request refused, and Server error. For details, see “HTTP Error Codes” on page 294. ▶ Use the up and down arrow buttons   to expand and collapse the panels.
Included in Tasks	“Configure Real User Monitor Engine Settings” on page 268
Useful Links	“Naming Conventions” in <i>Reference Information</i>

The Global HTTP Error Events page comprises the following panels:

- “Main Settings” on page 335



Main Settings

The Main Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
	Click to delete a selected HTTP error code from the list of HTTP error codes included in a global HTTP error event.
Create snapshot for event	Select the Create snapshot for event checkbox to enable a page snapshot for the event, if it occurs in an application. Default value: Enabled Note: For snapshots to be reported by Real User Monitor, the Snapshot on Event checkbox must also be enabled in the Real User Monitor engine configuration and the application configuration.
Enable	Select the Enable checkbox to enable monitoring for the HTTP error event, or clear the checkbox to disable monitoring. Default value: Enabled
Error code	Lists the HTTP error codes that are included in the HTTP error event.
Name	Enter the name of the HTTP error event. For example, you can create an HTTP global error event called Database errors and include the applicable HTTP error codes for this.

GUI Element	Description
<p>New Error Code</p>	<p>Click the New Error Code button to add an HTTP error code to the list of codes included in the HTTP error event.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ HTTP error codes must be a value between 400-599. ▶ An HTTP error code cannot be included in more than one HTTP error event within the same Real User Monitor engine.
<p>Save session snapshots</p>	<p>Select the Save session snapshots checkbox to enable snapshots to be made of all the pages from the beginning of a session, up to and including the page on which the global HTTP error event occurs.</p> <p>Default value: Disabled</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ Saving all the pages from the beginning of a session enables more accurate frames unification, thus improving session replay, but may adversely affect Real User Monitor probe performance. ▶ For snapshots of all the pages from the beginning of a session to be saved by Real User Monitor, both the Session snapshot on event checkbox for the application, and the Save session snapshot checkbox for the global HTTP error event must be enabled.

New/Edit Host Alias

Description	<p>Create a new host alias, or edit an existing one. For analysis purposes, it is often helpful to group several hosts and monitor these hosts together, as a unit. This enables you to monitor pages that are located on multiple servers as the same page and view them as such in the Real User Monitor reports. For example, if your organization has different Web sites in a number of countries, each showing similar information such as company profile, events, products, and so forth, you could create a host alias for all of the required pages so that they would appear as one unit in the Real User Monitor reports. The host unit is known as a host alias, which you can define on the New Host Alias page. Once a host alias has been defined, you can view the host alias settings, edit the host alias, or delete the host alias from the monitor tree.</p> <p>To access:</p> <ul style="list-style-type: none"> ➤ To create a new host alias, select Admin > End User Management, select the Monitors tab and right-click Host Aliases (under Engine Settings) in the monitor tree. Click New Host Alias in the displayed menu. ➤ To edit an existing host alias, select Admin > End User Management, select the Monitors tab and right-click an existing host alias (under Engine Settings > Host Aliases) in the monitor tree. Click Edit in the displayed menu.
Important Information	<p>Use the up and down arrow buttons   to expand and collapse the panels.</p>
Included in Tasks	<p>“Configure Real User Monitor Engine Settings” on page 268</p>
Useful Links	<p>“Naming Conventions” in <i>Reference Information</i></p>

The Host Alias page comprises the following panels:

- “Main Settings” on page 338
- “Hosts” on page 338


Main Settings

The Main Settings panel includes the following elements (listed alphabetically):



GUI Element	Description
Name	Enter the name you want to assign the host alias. Syntax Exceptions: Cannot exceed 100 characters. Note: The name must be unique within the Real User Monitor engine.

Hosts

The Hosts panel includes the following elements (listed alphabetically):

GUI Element	Description
	Click to delete a selected host from the list of hosts included in a host alias.
Hosts	Enter the host part of the URL that you want to include in the host alias you are defining (for example, hp.com). Note: Each host entered must be unique.
New Host	Click the New Host button to add a new entry in the list of hosts

New/Edit Page

Description	<p>Add a new page for which to collect data, that is part of an application you want to monitor, or edit an existing page.</p> <p>To access:</p> <ul style="list-style-type: none"> ▶ To create a new page, select Admin > End User Management, select the Monitors tab and right-click Pages in the monitor tree. Click New Page in the displayed menu. ▶ To edit an existing page, select Admin > End User Management, select the Monitors tab and right-click an existing page (within an application) in the monitor tree. Click Edit in the displayed menu.
Important Information	<ul style="list-style-type: none"> ▶ Pages can only be configured for an existing application. ▶ A maximum of 2000 pages can be configured for each engine. ▶ Use the up and down arrow buttons   to expand and collapse the panels.
Included in Tasks	“Configure Applications” on page 269
Useful Links	“Naming Conventions” in <i>Reference Information</i>

The Page page comprises the following panels:

- ▶ “Main Settings” on page 340
- ▶ “Threshold Settings” on page 341
- ▶ “Configuration Item Attachment Settings” on page 341

Main Settings

The Main Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
Description	Enter the description of the page, which you can view in End User Management only. Syntax exceptions: Cannot exceed 260 characters.
Enable	Select this checkbox to enable the page configuration, or clear the checkbox to disable it. Default value: Enabled
Monitoring conditions	Enter the monitoring condition for the page you are defining. From the Monitoring conditions box, select one of the following options: <ul style="list-style-type: none"> ➤ Always. Instructs Real User Monitor to collect data for all requests of the page. This data appears in the Global Statistics and Page Summary reports. ➤ Never. Instructs Real User Monitor not to collect data for the page. Data for this page will not appear in the Global Statistics or Page Summary reports. ➤ Only as part of a transaction. Instructs Real User Monitor to collect data for the page only if the page is included in a transaction. If the page is part of a transaction, data for it will appear in the Transaction Summary report. Data for the page will not appear in the Page Summary report.
Name	Enter the name you want to assign the page. Syntax exceptions: Cannot exceed 100 characters. The page name can include the following special characters: ; / ? = * & { } % @ + - \$. Note: <ul style="list-style-type: none"> ➤ The name must be unique. ➤ If you change the name of a page, the Real User Monitor reports display data for the page under both the original and the new page names.

GUI Element	Description
URL	Displays the configured URL of the page.
URL Builder	Click the URL Builder button to open the URL Builder, where you define the URL for the page. For details on the URL Builder dialog box, see “URL Builder” on page 371.

Threshold Settings

Important Information	The default values for all of the fields in this panel are the values configured for the page settings for the Real User Monitor engine. For details, see “Page Settings” on page 305.
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The Threshold Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
Availability (%)	Set the default page availability percentage threshold.
Page Time (seconds)	Set the default page download time threshold, in seconds.
Server Time (seconds)	Set the default server time threshold for the page, in seconds.
Timeout (seconds)	Set the default amount of time, in seconds, after which the downloading of the page’s components is considered to have timed out.



Configuration Item Attachment Settings

Description	Enables you to attach a CI to the page. Note: The Configuration Item Attachment Settings are available only when adding a page to End User Management and cannot be set while editing a page.
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The Configuration Item Attachment Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
	Click to delete a selected attached CI.
CI Name	List the names of the attached CIs.
CI Type	Lists the CI type of the attached CIs.
Select CIs	Click the Select CIs button to attach a CI to the page. For details, see “Configuration Items and End User Management Monitor Objects” on page 26.

New/Edit Page Size Event

<p>Description</p>	<p>Add a new page size event to a page or page container that are part of an application you wish to monitor. Also, edit an existing page size event.</p> <p>A page size event is triggered when a page size is either greater than or less than a defined number of kilobytes.</p> <p>To access:</p> <ul style="list-style-type: none"> ▶ To create a new page size event, select Admin > End User Management, select the Monitors tab and right-click the transaction, page or page container in the monitor tree, for which you want to configure the event. Click New Text Pattern Event in the displayed menu. ▶ To edit an existing page size event, select Admin > End User Management, select the Monitors tab and right-click an existing text pattern event (within an application) in the monitor tree. Click Edit in the displayed menu.
<p>Important Information</p>	<ul style="list-style-type: none"> ▶ If you are defining an event for a page container, the event will be applied to all pages contained within that page container. ▶ Use the up and down arrow buttons   to expand and collapse the panels.
<p>Included in Tasks</p>	<p>“Configure Applications” on page 269</p>
<p>Useful Links</p>	<p>“Naming Conventions” in <i>Reference Information</i></p>

The Page Size Event page comprises the following panels:



- “Main Settings” on page 344

Main Settings

The Main Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
Enable	Select this checkbox to enable the page size event configuration, or clear the checkbox to disable it. Default value: Enabled
Name	Enter the name of the page size event, which you can view in End User Management only. Syntax exceptions: Cannot exceed 100 characters. Note: The name must be unique.
Report as error	Select this checkbox to instruct Real User Monitor to report the page size event as an error event instead of an informational event.
Trigger event when page size	Select either greater than (>), or less than (<) and enter the page size in kilobytes in the adjacent box.

New/Edit Probe

Description	<p>Create a new probe, or configure an existing probe for the Real User Monitor engine.</p> <p>To access:</p> <ul style="list-style-type: none"> ➤ To create a new probe, select Admin > End User Management, select the Monitors tab and right-click Probes (under Engine Settings) in the monitor tree. Click New Probe in the displayed menu. ➤ To edit an existing probe, select Admin > End User Management, select the Monitors tab and right-click an existing probe name (under Engine Settings > Probes) in the monitor tree. Click Edit in the displayed menu.
Important Information	Use the up and down arrow buttons   to expand and collapse the panels.
Included in Tasks	“Configure Real User Monitor Engine Settings” on page 268
Useful Links	“Naming Conventions” in <i>Reference Information</i>

The Probe page comprises the following panels:

- “Main Settings” on page 346



Main Settings

The Main Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
Description	Enter a description of the probe machine, which you can view in End User Management. Syntax Exceptions: Limited to 260 characters.
Enable	Clear this checkbox to disable the probe from monitoring, while retaining its configuration. This enables you to temporarily stop the probe from monitoring, without deleting it. For example, you may want to disable a probe from monitoring if you are expecting heavy network traffic which is of no particular interest to you, during a certain period of time. Default value: Selected (enabled).
IP address	Enter the IP address of the Real User Monitor probe machine.
Name	Enter the name of the Real User Monitor probe machine. Syntax Exceptions: Cannot exceed 100 characters. Note: The probe’s name must be unique within the Real User Monitor engine you are adding.

GUI Element	Description
Password	<p>Enter the password for accessing the Real User Monitor probe machine.</p> <p>Note: The password must be same as the password configured during the Real User Monitor probe installation. For details on installing the Real User Monitor probe, see “Installing the HP Real User Monitor Probe” in the <i>Real User Monitor Administration</i> PDF.</p>
User name	<p>Enter the user name for accessing the Real User Monitor probe machine.</p> <p>Note: The user name must be same as the user name configured during the Real User Monitor probe installation. For details on installing the Real User Monitor probe, see “Installing the HP Real User Monitor Probe” in the <i>Real User Monitor Administration</i> PDF.</p>

New/Edit Real User Monitor Engine

Description	<p>Add a new Real User Monitor engine to the monitor tree in End User Management Administration, or edit an existing engine.</p> <p>To access:</p> <ul style="list-style-type: none"> ▶ Select Admin > End User Management, select the Monitors tab and right-click Enterprise in the monitor tree. Click New Real User Monitor Engine in the displayed menu. ▶ Select Admin > End User Management, select the Monitors tab and right-click an existing engine in the monitor tree. Click Edit in the displayed menu.
Important Information	<p>Use the up and down arrow buttons   to expand and collapse the panels.</p>

Included in Tasks	<ul style="list-style-type: none"> ➤ “Install and Configure Real User Monitor” on page 267 ➤ “Configure the Real User Monitor Engine” on page 267 ➤ “Configure Real User Monitor Engine Settings” on page 268
Useful Links	“Naming Conventions” in <i>Reference Information</i>

The Real User Monitor Engine page comprises the following panels:

- “Main Settings” on page 348
- “Probe Settings” on page 349
- “Advanced Settings” on page 351

Main Settings

The Main Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
Description	Enter a description for the Real User Monitor engine machine, which you can view in End User Management Administration only. Syntax Exceptions: Cannot exceed 260 characters.
Engine name	Enter the name of the Real User Monitor engine machine. Syntax Exceptions: Cannot exceed 100 characters.

GUI Element	Description
IP Address	Enter the IP address of the Real User Monitor engine machine.
Report data only for defined applications	Select this checkbox if you want the Real User Monitor engine to report data for defined applications only. A Real User Monitor probe gathers data for all the applications that pass through it. You can limit the amount of data reported by the probe by defining specific applications for the probe to report. For details on defining applications, see “New/Edit Application” on page 314.

Probe Settings

Important Information	This panel is visible only when adding a new Real User Monitor engine.
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The Probe Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
Description	Enter a description for the Real User Monitor probe machine, which you can view in End User Management Administration only. Syntax Exceptions: Cannot exceed 260 characters.
Enable	Clear this checkbox to disable the probe from monitoring, while retaining its configuration. This enables you to temporarily stop the probe from monitoring, without deleting it. For example, you may want to disable a probe from monitoring if you are expecting heavy network traffic which is of no particular interest to you, during a certain period of time. Default value: Selected (enabled).
IP Address	Enter the IP address of the Real User Monitor probe machine.



GUI Element	Description
<p>Password</p>	<p>Enter the password for accessing the Real User Monitor probe machine.</p> <p>Note: The password must be same as the password configured during the Real User Monitor probe installation. For details on installing the Real User Monitor probe, see “Installing the HP Real User Monitor Probe” in the <i>Real User Monitor Administration</i> PDF.</p>
<p>Probe name</p>	<p>Enter the name of the Real User Monitor probe machine.</p> <p>Syntax Exceptions: Cannot exceed 100 characters.</p> <p>Note: The probe’s name must be unique within the Real User Monitor engine you are adding.</p>
<p>User name</p>	<p>Enter the user name for accessing the Real User Monitor probe machine.</p> <p>Note: The user name must be same as the user name configured during the Real User Monitor probe installation. For details on installing the Real User Monitor probe, see “Installing the HP Real User Monitor Probe” in the <i>Real User Monitor Administration</i> PDF.</p>

Advanced Settings

The Advanced Settings panel includes the following elements (listed alphabetically):

<p>Real User Monitor engine URL</p>	<p>If SSL is configured on the Real User Monitor engine machine, you must define the Real User Monitor engine URL setting.</p> <p>To define the URL, enter the https protocol, together with the host name of the machine on which the Real User Monitor engine resides (an IP address cannot be used), and the port number (the default port is 443).</p> <p>Example: https://myenginemachinename:443</p>
<p>Retrieve snapshots directly from the Real User Monitor engine</p>	<p>Select this checkbox to configure the Session Replay applet to retrieve snapshots directly from the Real User Monitor engine, or clear the checkbox to configure the applet to communicate with the Real User Monitor engine via the HP Business Availability Center Gateway Server.</p> <p>For further information on retrieving session snapshots, see “Retrieving Snapshots Directly From the Real User Monitor Engine” on page 297.</p> <p>Note: This setting is applicable to all Real User Monitor engines.</p>

New/Edit Server Name

Description	<p>Create a new server name, or edit an existing one. You can define a server name for each IP address that is being monitored, which appears in the Real User Monitor reports, thereby making them more meaningful.</p> <p>To access:</p> <ul style="list-style-type: none"> ▶ To create a new server name, select Admin > End User Management, select the Monitors tab and right-click Server Names (under Engine Settings) in the monitor tree. Click New Server Name in the displayed menu. ▶ To edit an existing server name, select Admin > End User Management, select the Monitors tab and right-click an existing server name (under Engine Settings > Server Names) in the monitor tree. Click Edit in the displayed menu.
Important Information	<p>Use the up and down arrow buttons   to expand and collapse the panels.</p>
Included in Tasks	<p>“Configure Real User Monitor Engine Settings” on page 268</p>
Useful Links	<p>“Naming Conventions” in <i>Reference Information</i></p>

The Server Name page comprises the following panels:



- “Main Settings” on page 353

Main Settings

The Main Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
Description	Enter a description of the server which you can view in End User Management only. Syntax Exceptions: Cannot exceed 260 characters.
IP address	Enter the IP address of the server you are defining.
Name	Enter the server name you want to assign the server. Syntax Exceptions: Cannot exceed 100 characters. Note: The server name must be unique within the Real User Monitor engine.

New/Edit Session Pages Event

Description	<p>Add a new session pages event to an application, or edit an existing session pages event.</p> <p>A session pages event is triggered when a session in an application includes a defined number of pages.</p> <p>To access:</p> <ul style="list-style-type: none"> ▶ To create a new session pages event, select Admin > End User Management, select the Monitors tab and right-click the application in the monitor tree, for which you want to configure the event. Click New Session Pages Event in the displayed menu. ▶ To edit an existing session pages event, select Admin > End User Management, select the Monitors tab and right-click an existing session pages event (within an application) in the monitor tree. Click Edit in the displayed menu.
Important Information	<p>Use the up and down arrow buttons   to expand and collapse the panels.</p>
Included in Tasks	<p>“Configure Applications” on page 269</p>
Useful Links	<p>“Naming Conventions” in <i>Reference Information</i></p>

The Session Pages Event page comprises the following panels:



- “Main Settings” on page 355

Main Settings

The Main Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
Enable	Select this checkbox to enable the session pages event configuration, or clear the checkbox to disable it. Default value: Enabled
Name	Enter the name of the session pages event, which you can view in End User Management only. Syntax exceptions: Cannot exceed 100 characters. Note: The name must be unique.
Report as error	Select this checkbox to instruct Real User Monitor to report the session pages event as an error event instead of an informational event.
Trigger event when the number of pages in the session reaches	Enter the number of pages which, when reached, will trigger the event.

New/Edit Session Unavailable Pages Event

Description	<p>Add a new session unavailable pages event to an application, or edit an existing session unavailable pages event.</p> <p>A session unavailable pages event is triggered when a session in an application includes a defined number of unavailable pages.</p> <p>To access:</p> <ul style="list-style-type: none"> ▶ To create a new session unavailable pages event, select Admin > End User Management, select the Monitors tab and right-click the application in the monitor tree, for which you want to configure the event. Click New Session Unavailable Pages Event in the displayed menu. ▶ To edit an existing session unavailable pages event, select Admin > End User Management, select the Monitors tab and right-click an existing session unavailable pages event (within an application) in the monitor tree. Click Edit in the displayed menu.
Important Information	<p>Use the up and down arrow buttons   to expand and collapse the panels.</p>
Included in Tasks	<p>“Configure Applications” on page 269</p>
Useful Links	<p>“Naming Conventions” in <i>Reference Information</i></p>

The Session Unavailable Pages Event page comprises the following panels:



- “Main Settings” on page 357

Main Settings

The Main Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
Enable	Select this checkbox to enable the session unavailable pages event configuration, or clear the checkbox to disable it. Default value: Enabled
Name	Enter the name of the session unavailable pages event, which you can view in End User Management only. Syntax exceptions: Cannot exceed 100 characters. Note: The name must be unique.
Report as error	Select this checkbox to instruct Real User Monitor to report the session unavailable pages event as an error event instead of an informational event.
Trigger event when the number of unavailable pages in the session reaches	Enter the number of unavailable pages which, when reached, triggers the event.

New/Edit Text Pattern Event

<p>Description</p>	<p>Add a new text pattern event to an application, or to a page or page container that are part of an application you wish to monitor. Also, edit an existing text pattern event.</p> <p>A text pattern event is triggered when a page includes, or fails to include, a defined string of characters.</p> <p>To access:</p> <ul style="list-style-type: none"> ▶ To create a new text pattern event, select Admin > End User Management, select the Monitors tab and right-click the transaction, page or page container in the monitor tree, for which you want to configure the event. Click New Text Pattern Event in the displayed menu. ▶ To edit an existing text pattern event, select Admin > End User Management, select the Monitors tab and right-click an existing text pattern event (within an application) in the monitor tree. Click Edit in the displayed menu.
<p>Important Information</p>	<ul style="list-style-type: none"> ▶ If you are defining an event for an application, the event will be applied to all pages contained within that application. If you are defining an event for a page container, the event will be applied to all pages contained within that page container. ▶ Use the up and down arrow buttons   to expand and collapse the panels.
<p>Included in Tasks</p>	<p>“Configure Applications” on page 269</p>
<p>Useful Links</p>	<p>“Naming Conventions” in <i>Reference Information</i></p>

The Text Pattern Event page comprises the following panels:

- “Main Settings” on page 363

Main Settings



The Main Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
Advanced Criteria	<p>Click the Advanced Criteria button to open the Advanced Finding and Retrieving dialog box, where you can enter the regular expression to use for locating and extracting the required string. In the Scan for (Regular Expression) box, enter the regular expression that represents the string from which you want Real User Monitor to retrieve data. In the Retrieve box, enter the phrase representing the object to be retrieved.</p> <p>Note: This field is enabled only when the radio button to the left of it is selected.</p>
Any value between the expressions and	<p>Enter the expressions on the page, between which the value to be extracted for use in Real User Monitor Event reports is located.</p> <p>Note:</p> <ul style="list-style-type: none"> ➤ This option is valid only if a value is found on the page where specified. ➤ The option works in conjunction with the main Trigger an event for pages option so that both conditions must be met for the event to be triggered. <p>This field is enabled only when the Trigger an event for pages radio button is selected.</p>

GUI Element	Description
<p>Create Snapshot for Event</p>	<p>Select this checkbox to create a snapshot of the page on which the event occurs.</p> <p>Note: For snapshots to be reported by Real User Monitor, this checkbox must be enabled, as well as the Snapshot on Event checkbox in the Real User Monitor engine configuration and the application configuration.</p>
<p>Enable</p>	<p>Select this checkbox to enable the text pattern event configuration, or clear the checkbox to disable it.</p> <p>Default value: Enabled</p>
<p>Extract text from the html source to be displayed as event description</p>	<p>Select this checkbox to instruct Real User Monitor to extract a configured value from the page, which is used as the event name in Real User Monitor Event reports.</p> <p>Note: This field is enabled only when the Trigger an event for pages radio button is selected.</p>
<p>Field/Tag/Parameter</p>	<p>Configure a specific field within a header, or a specific html tag within the content, in which to search for the string of characters.</p> <p>Default value:</p> <ul style="list-style-type: none"> ➤ Cookie for header ➤ All for get/post parameters ➤ HTML for content
<p>Name</p>	<p>Enter the name of the text pattern event, which you can view in End User Management only.</p> <p>Syntax exceptions: Cannot exceed 100 characters.</p> <p>Note: The name must be unique.</p>
<p>Report as error</p>	<p>Select this checkbox to instruct Real User Monitor to report the text pattern event as an error event instead of an informational event.</p>

GUI Element	Description
Save session snapshots	<p>Select this checkbox to enable snapshots to be made of all the pages from the beginning of a session, up to and including the page on which the text pattern event occurs.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ Saving all the pages from the beginning of a session enables more accurate frames unification, thus improving session replay, but may adversely affect Real User Monitor probe performance. ▶ For snapshots of all the pages from the beginning of a session to be saved by Real User Monitor, both the Session snapshot on event checkbox for the application, and the Save session snapshots checkbox for the text pattern event must be enabled.
Search in	<p>Select where on the page to search for the string of characters. Available options are:</p> <ul style="list-style-type: none"> ▶ Header. Instructs Real User Monitor to look for the pattern in the page header. You can further define a specific field within the header in which to search. ▶ Get/post parameters. Instructs Real User Monitor to look for the pattern in the get/post parameters. All the get/post parameters will be searched. ▶ Content. Instructs Real User Monitor to look for the pattern in the page content. You can further define a specific HTML tag within the content in which to search.
Trigger an event for pages	<p>Select whether you want to trigger an event for pages that contain, or do not contain, a specific string, which you enter in the adjacent field.</p> <p>Note: This field is enabled only when the radio button to the left of it is selected.</p>

New/Edit Transaction

Description	<p>Add a new transaction for which to collect data, that is part of an application you want to monitor, or edit an existing transaction.</p> <p>To access:</p> <ul style="list-style-type: none"> ▶ To create a new page, select Admin > End User Management, select the Monitors tab and right-click Transaction in the monitor tree. Click New Transaction in the displayed menu. ▶ To edit an existing transaction, select Admin > End User Management, select the Monitors tab and right-click an existing transaction (within an application) in the monitor tree. Click Edit in the displayed menu.
Important Information	<ul style="list-style-type: none"> ▶ Transactions can only be configured for an existing application. ▶ If an application does not include a session ID, it is possible that two or more simultaneous transactions originating from a single end-user may be reported by Real User Monitor as a single transaction. ▶ A transaction can be copied only within the same Real User Monitor engine. ▶ Use the up and down arrow buttons   to expand and collapse the panels.
Included in Tasks	“Configure Applications” on page 269
Useful Links	“Naming Conventions” in <i>Reference Information</i>

The Transaction page comprises the following panels:

- ▶ “Main Settings” on page 363
- ▶ “Included Pages Settings” on page 363
- ▶ “Threshold Settings” on page 364
- ▶ “Advanced Settings” on page 365
- ▶ “Configuration Item Attachment Settings” on page 365



Main Settings

The Main Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
Description	Enter the description of the transaction, which you can view in End User Management only. Syntax exceptions: Cannot exceed 260 characters.
Enable	Select this checkbox to enable the transaction configuration, or clear the checkbox to disable it. Default value: Enabled
Name	Enter the name you want to assign the transaction. Syntax exceptions: Cannot exceed 100 characters. Note: The name must be unique.

Included Pages Settings

The Included Pages Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
	Click the up or down arrow to change the order of a selected page in the transaction.
	Click to remove a selected page from the transaction.
Pages Added	Lists the pages that are included in the transaction.
Select Pages To Add	Lists all the pages that have been configured for the application. Click on a page to include it in the transaction.

Threshold Settings

Important Information	The default values for all of the fields in this panel are the values configured for the transaction settings for the Real User Monitor engine. For details, see “Transaction Settings” on page 306.
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The Threshold Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
Availability (%)	Set the default transaction availability percentage threshold.
Net Time (seconds)	Set the default net transaction time threshold for the pages included in the transaction, in seconds.
Server Time (seconds)	Set the default server time threshold for the transaction, in seconds.
Timeout (seconds)	Set the default amount of time, in seconds, after which the downloading of a page in the transaction is considered to have timed out.
Total Time (seconds)	Set the default total transaction time threshold (download time + think time), in seconds.

Advanced Settings


The Advanced Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
Measure first/last page instance	Select the appropriate radio button to instruct Real User Monitor to report data for either the first or last instance of a page refresh. Default value: Last page instance is reported.
Report unavailable transaction is user reaches page	Select one of the configured transaction pages from the dropdown list to instruct Real User Monitor to report data for an unavailable transaction, only if the transaction stream includes the selected page. An unavailable transaction is a transaction that does not end properly due to a session reset, a transaction timeout, or because an error on one of the transaction's pages prevents it from completing. Default value: The first page you added to the transaction.

Configuration Item Attachment Settings

Description	Enables you to attach a CI to the transaction. Note: The Configuration Item Attachment Settings are available only when adding a transaction to End User Management and cannot be set while editing a transaction.
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The Configuration Item Attachment Settings panel includes the following elements (listed alphabetically):

GUI Element	Description
	Click to delete a selected attached CI.
CI Name	List the names of the attached CIs.
CI Type	Lists the CI type of the attached CIs.
Select CIs	Click the Select CIs button to attach a CI to the page. For details, see “Configuration Items and End User Management Monitor Objects” on page 26.

Sensitive Data Dialog Box

Description	The dialog box used to configure sensitive data to be removed by Real User Monitor. To Access: Click the New Sensitive Data button in the Advanced Settings panel, when configuring an application.
Included in Tasks	“Configure Applications” on page 269

The Sensitive Data dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Advanced Criteria	<p>Click the Advanced Criteria button to open the Advanced Finding and Retrieving dialog box, where you can enter the regular expression from which to remove sensitive data. In the Scan for (Regular Expression) box, enter the regular expression that represents the string within which you want Real User Monitor to replace sensitive data. In the Remove box, enter the phrase representing the objects) to be removed.</p> <p>Note: This button is enabled only after you select the radio button next to it.</p>
Enable	<p>Select this checkbox to enable the sensitive data configuration, or clear the checkbox to disable it.</p> <p>Default value: Enabled</p>
Remove any value between the expressions.....and	<p>Enter the expressions between which sensitive data will be removed.</p> <p>Note: These fields are enabled only after you select the radio button next to them.</p>

Session Property Dialog Box

Description	The dialog box used to configure a new session property for an application. To Access: Click the New Session Property button in the Session Properties panel, when configuring an application.
Important Information	<ul style="list-style-type: none">▶ A maximum of five session properties can be configured for an application.▶ The string extracted as the session property value cannot exceed 50 characters.
Included in Tasks	“Configure Applications” on page 269

The Session Property dialog box includes the following elements (listed alphabetically):


GUI Element	Description
Advanced Criteria	<p>Click the Advanced Criteria button to open the Advanced Finding and Retrieving dialog box, where you can enter the regular expression that represents the string for Real User Monitor to find to tag the session, and configure the data to retrieve as the session property value.</p> <p>Note: This button is enabled only after you select the radio button next to it.</p>
and save any value between the expressions.....and	<p>Enter the <to> and <from> expressions in the search area, between which the required session property value is located.</p> <p>For details on Session Property search settings, see “Session Property Search Settings” on page 261.</p> <p>Note: This field is enabled only after you select the radio button next to it.</p>
Enable	<p>Select this checkbox to enable the session property configuration, or clear the checkbox to disable it.</p> <p>Default value: Enabled</p>
Field/Tag/Parameter	<p>Enter the specific HTML tag, header field, or parameter in the search area configured in the Search in field.</p> <p>For details on Session Property search settings, see “Session Property Search Settings” on page 261.</p>

GUI Element	Description
Name	Enter the name of the session property.
Search in	<p>Select the search area in which you want Real User Monitor to look for the expressions between which the required session property value is located. Valid options are:</p> <ul style="list-style-type: none">➤ header➤ content➤ get/post parameters. <p>For details on Session Property search settings, see “Session Property Search Settings” on page 261.</p>

URL Builder

<p>Description</p>	<p>Configure a URL using its composite parts when configuring Real User Monitor engine settings, applications, pages and events.</p> <p>To access:</p> <ul style="list-style-type: none"> ➤ When configuring a Real User Monitor engine's general settings, in the Session Reset Settings panel click the New Session Delimiter URL button. ➤ When configuring an application: <ul style="list-style-type: none"> ➤ in the Application Location Settings panel, click the New Application URL button. ➤ in the User Name Detection panel, click the New Logon Page URL button. ➤ When configuring an Error Page event, click the URL Builder button in the Main Settings panel. ➤ When configuring a page, click the URL Builder button in the Main Settings panel.
<p>Included in Tasks</p>	<ul style="list-style-type: none"> ➤ “Configure Real User Monitor Engine Settings” on page 268 ➤ “Configure Applications” on page 269

The URL Builder includes the following elements (listed alphabetically):

GUI Element	Description
	Click to delete a selected parameter.
Add New Parameter	Click the Add New Parameter button to add additional parameters.
Apply	<p>Click the Apply button to break down the URL into its five components—protocol, host, port, path, and parameters.</p> <p>Note: Once you click the Apply button and the URL is broken down into its parts, you cannot edit the URL directly in the URL box, but do so by editing the individual components. Any change to the individual components is automatically updated and displayed in the full URL in the URL box .</p>
Encode & Save	<p>Click the Encode & Save button to convert the URL into UTF-8 format and save it in your configuration.</p> <p>Note: URL matching is affected by the encoding of recorded and configured URLs. For recorded and configured URLs to match, they must have the same encoding.</p>
Host	Enter the URL host, which is the name of the machine on which the file, or resource, that you wish to access via the URL resides.
Name	Enter the name of the parameter.

GUI Element	Description
Parameters	<p>Select one of the following parameter options:</p> <ul style="list-style-type: none"> ▶ None. This option does not define any parameters. ▶ None or more. This option specifies that either no parameters, or any combination of parameters are valid. ▶ Only the parameters listed below. This option allows you to specify specific parameters and values that must be matched. ▶ Those parameters listed below as well as other parameters. This option allows you to specify specific parameters and values that must be matched, but will also accept any other additional parameters and values. ▶ At least one parameter. This option indicates that the URL must contain at least one parameter, but it does not matter what the parameter name, or the value, is. <p>Note: If you select Only the parameters listed below, or Those parameters listed below as well as other parameters, you must configure specific parameters.</p>
Port	<p>Enter the port number used to connect to the URL host machine. If no port is specified, a default port number will be used. The default port when using the HTTP protocol is 80 and when using the HTTPS protocol, the default port is 443.</p> <p>The asterisk wildcard character can be used. For example, if you enter 44* as the URL port, any port that begins with 44 can be correlated with the configured URL.</p> <p>Note: The asterisk wildcard character cannot be used in the URL port when defining an application URL.</p>

GUI Element	Description
Protocol	<p>Select the URL protocol used to fetch the URL. Available options are:</p> <ul style="list-style-type: none"> ➤ HTTP. The standard protocol for regular communications. ➤ HTTPS. The protocol used when the URL is accessed using Secure Sockets Layer (SSL). ➤ HTTP or HTTPS. Either option is valid.
Save	<p>Click the Save button to save the URL without any encoding. By saving a URL without UTF-8 encoding, you can define a URL that is externally encoded by a different encoding scheme.</p> <p>Note: URL matching is affected by the encoding of recorded and configured URLs. For recorded and configured URLs to match, they must have the same encoding.</p>
Type	<p>Select All to include all values of the parameter, or = to include only a specific parameter value.</p>
URL	<p>Enter the URL you want to configure. You can enter a URL by typing it in the URL box directly, or by copying a URL from an external source and pasting it in the URL box.</p> <p>You can use wildcards when defining a URL. For details, see “URL Wildcards” on page 251.</p> <p>Syntax exceptions: The URL cannot exceed 1000 characters and cannot include the # sign followed by an asterisk (#*).</p>

GUI Element	Description
URL Path	<p>Enter the URL path to the file, or resource, that you wish to access via the URL.</p> <p>The asterisk wildcard character can be used. For example, if you enter cgi*search.cgi as the URL path, any path that begins with cgi and ends with search.cgi can be correlated with the configured URL.</p>
Value	<p>If you chose to include only a specific parameter value (by selecting = in the Type field), enter the specific value.</p> <p>Note: The asterisk wildcard (*) can be used in a parameter value.</p>

21

Real User Monitor Reports User Interface

This chapter describes the pages and dialog boxes that are part of the Real User Monitor reports user interface, listed alphabetically.

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Active Filters Dialog Box

Description	<p>Enables you to set filters on specific report components, which helps you pinpoint problem areas, or focus on specific areas that you have already determined to be problematic.</p> <p>To access: Click the Active Filters link in any of the Real User Monitor reports.</p>
Important Information	<ul style="list-style-type: none"> ▶ The Active Filters dialog box includes all the filters available for Real User Monitor reports. Only the filters that are valid for the report from which you are accessing the Active Filters dialog box are displayed. ▶ Active filters are saved across reports. For details, see “Drilling Down Within Real User Monitor Reports” on page 290.


The Active Filters dialog box includes the following filter tabs and areas (listed alphabetically), which you access by clicking on the appropriate tab:

- “End User Groups” on page 379
- “Events” on page 383
- “Pages” on page 384
- “Servers” on page 388
- “Session Properties” on page 389
- “Transactions” on page 391
- “User Properties” on page 393

End User Groups

Description	Enables you to filter the data included in the report according to specific end user groups that you select, a wildcard expression, or a range of IP addresses.
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The End User Group Filter tab includes the following elements (listed alphabetically):

GUI Element	Description
	<p>Clear all, select all, and invert selection buttons to clear all selections, select all end user groups, and to invert selection (clear end user groups that were selected and select end user groups that were not selected)</p>
<p><End user group tree></p>	<p>Displays the existing end user CIs in the Universal CMDB. Click on an entry in the tree to expand it.</p> <p>Select the check box for the end user groups you want to include in the filter.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ If an end user group you configured in End User Management Administration does not appear in the tree, synchronize the Real User Monitor engine in End User Management Administration, or wait until an automatic synchronization occurs, which can take up to an hour. ▶ Descendents of selected items in the tree are automatically included in the filter as well, but do not appear as being selected in the tree.
<p>Browse</p>	<p>Click to open the filter's Browse mode , where you configure the filter tab's main settings.</p> <p>Note: The Browse link is enabled only when you are in the Search mode.</p>
<p>City</p>	<p>You can further filter selected end user groups by selecting a city from the dropdown list. Only selected end user groups (whether you chose specific end user groups, or entered an end user group name or an IP range) that are configured as being in the selected city, are displayed in the report.</p> <p>Note: To select a city, you must first select a country and, if applicable, a state.</p>


GUI Element	Description
Country	You can further filter selected end user groups by selecting a country from the dropdown list. Only selected end user groups (whether you chose specific end user groups, or entered an end user group name or an IP range) that are configured as being in the selected country, are displayed in the report.
End user group name	Choose this option to specify a specific end user group name to include in the filter. Any end user group whose name includes the text you enter is added to the filter. Note: It is recommended to select the end user group from the end user group tree, even if the search option is used, to enable the report to be generated faster.
IP between	Choose this option to specify a range of IP addresses to include in the filter. Enter the starting and ending IP addresses of the required range.
Search	Click to open the Search mode, where you can search for end user groups with names containing a specific string. Note: <ul style="list-style-type: none"> ▶ The search is not case sensitive. ▶ You can use the asterisk (*) wildcard in your string to match one or more words of text. ▶ The Search link is enabled only when you are in the Browse mode.
Show <Real User Monitor component> only for end user groups with poor performance	Select this check box to show only the Real User Monitor component relevant for the report you are generating, for end user groups with poor performance. That is, end user groups whose latency is greater than the latency threshold you configured for the end user group in End User Management Administration.

GUI Element	Description
<p>Show unconfigured end user groups</p>	<p>Select this check box to include data in the report applicable to unconfigured end user groups, or clear the check box to exclude such data from the report. An unconfigured end user group is one that is not configured in End User Management Administration, but that is still detected and recognized by the Real User Monitor engine.</p> <p>Default value: Selected</p>
<p>Specific end user groups</p>	<p>Choose this option to select specific end user groups from the end user group tree.</p>
<p>State</p>	<p>You can further filter selected end user groups by selecting a state from the dropdown list. Only selected end user groups (whether you chose specific end user groups, or entered an end user group name or an IP range) that are configured as being in the selected state, are displayed in the report.</p> <p>Note: To select a state, you must first select a country.</p>

Events

Description	Enables you to filter the data included in the report according to specific events that you select.
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The Events Filter tab includes the following elements (listed alphabetically):

GUI Element	Description
	Clear all, select all, and invert selection buttons to clear all selections, select all events, and to invert selection (clear events that were selected and select events that were not selected)
<Event tree>	<p>Displays the existing event CIs in the Universal CMDB. Click on an entry in the tree to expand it.</p> <p>Select the check box for the events you want to include in the filter.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ If an event you configured in End User Management Administration does not appear in the tree, synchronize the Real User Monitor engine in End User Management Administration, or wait until an automatic synchronization occurs, which can take up to an hour. ▶ Descendents of selected items in the tree are automatically included in the filter as well, but do not appear as being selected in the tree.
Browse	<p>Click to open the filter's Browse mode , where you configure the filter tab's main settings.</p> <p>Note: The Browse link is enabled only when you are in the Search mode.</p>

GUI Element	Description
Filter <Real User Monitor component> with pages that have performance events	Select this check box to include the Real User Monitor component relevant for the report you are generating, that includes pages on which events occurred due to poor performance. That is, events caused by thresholds not being met or being exceeded, and not necessarily including specific events that you configured in End User Management Administration.
Search	Click to open the Search mode, where you can search for events with names containing a specific string. Note: <ul style="list-style-type: none"> ➤ The search is not case sensitive. ➤ You can use the asterisk (*) wildcard in your string to match one or more words of text. ➤ The Search link is enabled only when you are in the Browse mode.

Pages


Description	Enables you to filter the data included in the report according to specific pages that you select.
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The Pages Filter tab comprises the following:

- “Pages Filter Tab Main Area” on page 385
- “Select URLs with Meaningful Names Dialog Box” on page 387

Pages Filter Tab Main Area

The Pages Filter tab main area includes the following elements (listed alphabetically):

GUI Element	Description
	<p>Clear all, select all, and invert selection buttons to clear all selections, select all end user groups, and to invert selection (clear end user groups that were selected and select end user groups that were not selected)</p>
<p><Pages tree></p>	<p>Displays the existing page CIs in the Universal CMDB. Click on an entry in the tree to expand it.</p> <p>Select the check box for the pages you want to include in the filter.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ If a page you configured in End User Management Administration does not appear in the tree, synchronize the Real User Monitor engine in End User Management Administration, or wait until an automatic synchronization occurs, which can take up to an hour. ▶ Descendents of selected items in the tree are automatically included in the filter as well, but do not appear as being selected in the tree.
<p>Browse</p>	<p>Click to open the filter's Browse mode , where you configure the filter tab's main settings.</p> <p>Note: The Browse link is enabled only when you are in the Search mode.</p>
<p>Search</p>	<p>Click to open the Search mode, where you can search for pages with names containing a specific string.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ The search is not case sensitive. ▶ You can use the asterisk (*) wildcard in your string to match one or more words of text. ▶ The Search link is enabled only when you are in the Browse mode.

GUI Element	Description
<p>Selected URLs with meaningful names</p>	<p>Click this link to open the Select URLs with Meaningful Names dialog box, where you select unconfigured URLs with meaningful names to include in the report. For details on the Select URLs with Meaningful Names dialog box, see “Select URLs with Meaningful Names Dialog Box” on page 387.</p> <p>For details on meaningful names, see “Configuring Meaningful Page Names” in the <i>Real User Monitor Administration</i> PDF.</p>
<p>Show <Real User Monitor component> for defined pages</p>	<p>Select this checkbox to show the Real User Monitor component for the pages you configured in End User Management Administration. Select the pages for which you want to include the Real User Monitor component from the Page tree, or leave the Page tree completely unselected to include the Real User Monitor component for all the pages you configured in End User Management Administration.</p> <p>Clear this checkbox to show the Real User Monitor component for only unconfigured pages and pages with meaningful names.</p> <p>Default value: Selected</p> <p>Note: When Real User Monitor reports are included in custom reports, this checkbox is not selected by default. For details on custom reports, see “Custom Report Manager” in <i>Custom Reporting and Alerting</i>.</p>
<p>Show <Real User Monitor component> only for pages with low average availability</p>	<p>Select this checkbox to show the Real User Monitor component relevant for the report you are generating, that include only pages whose average availability is less than the page availability you configured in End User Management Administration.</p>

GUI Element	Description
Show <Real User Monitor component> only for pages with poor average performance	Select this checkbox to show the Real User Monitor component relevant for the report you are generating, that include only pages whose average page time is less than the page time you configured in End User Management Administration.
Show <Real User Monitor component> only for pages with poor average server performance	Select this checkbox to show the Real User Monitor component relevant for the report you are generating, that include only pages whose average server time is less than the server time you configured in End User Management Administration.

Select URLs with Meaningful Names Dialog Box

The URLs with Meaningful Names dialog box includes the following elements (listed alphabetically):

GUI Element	Description
All	Select the All radio button to include all pages with meaningful names in the report.
None	Select the None radio button to exclude all pages with meaningful names from the report.
Results	Lists the pages with meaningful names that match the search criteria. Select the checkbox for each page you want to include in the report. Note: This element is only visible when the Selected radio button has been chosen.
Search	Click the Search button to find all the pages with meaningful names that match the search criteria. Note: This element is only visible when the Selected radio button has been chosen.

GUI Element	Description
Search for	Enter the string to be matched when searching for pages with meaningful names. Any page whose name includes the string you enter will be included in the search results. Note: This element is only visible when the Selected radio button has been chosen.
Selected	Select the Selected radio button to display the fields that you use to search for pages with meaningful names that match a specific search criteria. From the search results you select the pages you want to include in the report.

Servers

Description	Enables you to filter the data included in the report according to specific servers that you select, a wildcard expression or a server IP address.
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The Server Filter tab includes the following elements (listed alphabetically):

GUI Element	Description
Server IP	Select a server for inclusion in the report by a specific IP address.

GUI Element	Description
Server Name	Select servers for inclusion in the report by name. Any server whose name matches the text you enter will be added to the filter. Note: <ul style="list-style-type: none"> ▶ The server name is case sensitive. ▶ You can use the asterisk (*) wildcard to represent any string of characters in the server name.
Show <Real User Monitor component> only for servers with low average availability	Select this check box to show the Real User Monitor component relevant for the report you are generating, that include only servers whose availability is less than the average server availability you configured in End User Management Administration.

Session Properties

Description	Enables you to filter the sessions displayed in the report according to session status and session properties.
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The Session Properties tab includes the following elements (listed alphabetically):


GUI Element	Description
Operator	Select the operator to use on a specific session property. Valid options are: <ul style="list-style-type: none"> ▶ =. The session property must equal the entry in the Value field. ▶ Ignore. Do not use the session property for filtering. ▶ Starts with. The session property must start with the entry in the Value field.
Session Property	The names of all the session properties configured in End User Management Administration for the selected applications for the report are listed.

GUI Element	Description
Show sessions	<p>Select the session status by which sessions will be included in the report. Valid options are:</p> <ul style="list-style-type: none"> ➤ All. Include all session in the report. ➤ Active. Include only active sessions in the report. ➤ Closed. Include only closed sessions in the report. <p>Default value: All</p> <p>Note: Sessions are filtered for inclusion in the report by status AND session properties.</p>
Value	Enter the value to be used when filtering sessions by the specific session property.

Transactions

Description	Enables you to filter the data included in the report according to specific transactions that you select.
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The Transactions Filter tab includes the following elements (listed alphabetically):

GUI Element	Description
	Clear all, select all, and invert selection buttons to clear all selections, select all transactions, and to invert selection (clear transactions that were selected and select transactions that were not selected)
<Transactions tree>	<p>Displays the existing transaction CIs in the Universal CMDB. Click on an entry in the tree to expand it. Select the check box for the transactions you want to include in the filter.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ If a transaction you configured in End User Management Administration does not appear in the tree, synchronize the Real User Monitor engine in End User Management Administration, or wait until an automatic synchronization occurs, which can take up to an hour. ▶ Descendents of selected items in the tree are automatically included in the filter as well, but do not appear as being selected in the tree.
Browse	<p>Click to open the filter's Browse mode , where you configure the filter tab's main settings.</p> <p>Note: The Browse link is enabled only when you are in the Search mode.</p>

GUI Element	Description
<p>Search</p>	<p>Click to open the Search mode, where you can search for transactions with names containing a specific string.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ The search is not case sensitive. ▶ You can use the asterisk (*) wildcard in your string to match one or more words of text. ▶ The Search link is enabled only when you are in the Browse mode.
<p>Show <Real User Monitor component> only for transactions with low average availability</p>	<p>Select this checkbox to show the Real User Monitor component relevant for the report you are generating, that include only transactions whose average availability is less than the transaction availability threshold you configured in End User Management Administration.</p>
<p>Show <Real User Monitor component> only for transactions with poor average net performance</p>	<p>Select this checkbox to show the Real User Monitor component relevant for the report you are generating, that include only transactions whose average net performance time is less than the net performance time threshold you configured in End User Management Administration.</p>
<p>Show <Real User Monitor component> only for transactions with poor average performance</p>	<p>Select this checkbox to show the Real User Monitor component relevant for the report you are generating, that include only transactions whose average transaction time is less than the transaction time threshold you configured in End User Management Administration.</p>
<p>Show <Real User Monitor component> only for transactions with poor average server performance</p>	<p>Select this checkbox to show the Real User Monitor component relevant for the report you are generating, that include only transactions whose average server time is less than the server time threshold you configured in End User Management Administration.</p>

User Properties

Description	Enables you to filter the data displayed in the report according to users, computers, and IP addresses.
Important Information	If more than one field is used for filtering, all conditions must be met for data to be included in the report. That is, there is an AND relationship between the fields.


The User Properties tab includes the following elements (listed alphabetically):

GUI Element	Description
Computer name	Enter the name of a computer by which to filter the data. Any computer whose name includes the text you enter will be added to the filter. Note: You can use the asterisk (*) wildcard to represent any string of characters in the computer name.
IP Address	Enter an IP address by which to filter the data.
User name	Enter the name of a user by which to filter the data. Any user whose name includes the text you enter will be added to the filter. Note: You can use the asterisk (*) wildcard to represent any string of characters in the user name.

Applications Dialog Box

Description	Enables you to select the applications for which data will be included in Real User Monitor reports. To access: Click the Applications link in the report settings area of a Real User Monitor report.
Important Information	In the Global Statistics report, you select an application from the dropdown list in the Application field. For details on the Global Statistics report, see “Global Statistics Report” on page 443.

The Applications dialog box includes the following elements (listed alphabetically):

GUI Element	Description
	Click the required button to select all applications, clear all applications, or reverse the current selection.
<Application>	Lists all the applications configured in End User Management Administration. For details on configuring applications in End User Management Administration, see “New/Edit Application” on page 314.
<Checkbox>	Select the checkboxes for the applications you want to include in the Real User Monitor report.

Business Process Distribution Report

<p>Description</p>	<p>Displays transaction run and transaction response time data over time for the transactions that you configure in End User Management Administration.</p> <p>You use the Business Process Distribution report to pinpoint the Real User Monitor transactions with the greatest number of runs and the highest session popularity. You then drill down in this report to view the individual sessions in which these transactions were run. You can also use the Business Process Distribution report to pinpoint the transactions that were problematic in terms of response time and availability and drill down so that you can isolate the sessions, and pages within the sessions, that were problematic.</p> <p>For details on analyzing the Business Process Distribution report, see “Analyzing the Business Process Distribution Report” on page 291.</p> <p>To access: Select Applications > End User Management > Real User > Business Process Distribution</p>
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The Business Process Distribution report includes the following areas:

- “Report Settings” on page 396
- “Summary Table” on page 397
- “Transaction Runs Over Time Graph” on page 398
- “Transaction Response Time Over Time Graph” on page 399

Report Settings


The area includes the following elements (listed alphabetically):

GUI Element	Description
<Common report settings>	For details, see “Understanding Common Report Elements” in <i>Reference Information</i> .
<Radio buttons>	Select a radio button to choose the filter for including transactions in the Business Process Distribution report. Available options are: <ul style="list-style-type: none"> ▶ Show X transactions. Enables you to select a specific number of transactions with certain characteristics, from selected applications ▶ Transaction Selection. Enables you to select specific transactions.
from	Opens a list from which you select the application whose transactions are included in the report. Select an individual application or All .
Generate	Click to generate the report using the selected filters.
Show	Opens a list from which you select the number of transactions from the selected application that are included in the report.

GUI Element	Description
Transaction Selection	Click to open the Select Transactions dialog box. In the Select Transactions dialog box, choose All applications to display the transactions from all monitored applications, or choose a specific application to display only transactions that were defined for that application. Select the transaction(s) for which you want to view data, and click the first arrow. To view data for all the transactions listed, click the second arrow. Click OK to close the dialog box and save your settings.
transactions	Opens a list from which you select the characteristics for selecting the transactions to be included in the report. Available options are: <ul style="list-style-type: none"> ➤ with the greatest number of runs ➤ with the worst response times ➤ with the highest session popularity ➤ with the lowest availability Note: Popularity is determined by dividing the number of unique sessions running a transaction by the total number of sessions.

Summary Table

The Summary table includes the following elements (listed alphabetically):

GUI Element	Description
	View Sessions button. Click to open the Sessions page, which displays data for each session in which the selected transaction was run and a transaction snapshot was collected, as well as certain key statistic averages of all the displayed sessions. For additional information on the Sessions page, see the “Session Analyzer Report” on page 486.
Application	Displays the application with which the transaction is associated.

GUI Element	Description
Availability	<p>Displays the transaction's availability. This column is color-coded, based on the transaction's availability in relation to the transaction availability threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical <p>Tooltip: The transaction availability threshold you defined in End User Management Administration.</p>
Average Response Time	Displays the average total transaction time, in seconds.
Popularity	Displays the percentage of sessions in which the transaction was run.
Total Runs	Displays the total number of run instances for the transaction.
Transaction	Displays the transaction name.

Transaction Runs Over Time Graph

The Transaction Runs Over Time graph includes the following elements (listed alphabetically):

GUI Element	Description
<Data points>	<p>Display the number of runs for a transaction at a given time. Consecutive data points for the same transaction are joined by a line.</p> <p>Tooltip: The number of runs for the transaction at that time.</p>
<Legend>	Describes the color coding used in the graph.
Runs <y-axis>	Displays the number of runs for a transaction.
Time <x-axis>	Displays the time division units for the time range that you defined when generating the report.

Transaction Response Time Over Time Graph

The Transaction Response Time Over Time graph includes the following elements (listed alphabetically):

GUI Element	Description
<Data points>	<p>Display the response time for a transaction at a given time. Consecutive data points for the same transaction are joined by a line.</p> <p>Tooltip: Hold the cursor over a data point to display a the response time (in milliseconds) for the transaction at that time.</p>
<Legend>	Describes the color coding used in the graph.
Response Time <y-axis>	Displays the response time for a transaction.
Time <x-axis>	Displays the time division units for the time range that you defined when generating the report.

Define Page Dialog Box

<p>Description</p>	<p>Enables you to add an undefined page to the list of configured pages in End User Management Administration, directly from a Real User Monitor report.</p> <p>To access: Click the Define Page button in the Global Statistics (Most Popular Pages, Pages with Slowest Server Time, and Pages with Most Errors tables), or Session Analyzer (View Page) reports.</p> <p>For details on the Global Statistics report, see “Global Statistics Report” on page 443.</p> <p>For details on the Session Analyzer report, see “Session Analyzer Report” on page 486.</p>
<p>Important Information</p>	<ul style="list-style-type: none"> ▶ A newly defined page is only listed as defined when the next data sample is compiled by the Real User Monitor engine. ▶ A page added using the Define Page dialog box, acquires the default settings for page thresholds configured in End User Management Administration. To change any of the page’s default settings, you must do so in End User Management Administration.
<p>Useful Links</p>	<p>“Naming Conventions” in <i>Reference Information</i></p>

The Define Page dialog box includes the following elements (listed alphabetically):

GUI Element	Description
Group	The group (Real User Monitor engine and application) to assign to the page.
Monitoring Conditions	<p>The monitoring condition for the page. Data for monitored pages appears in the Global Statistics and Page Summary reports. Available options are:</p> <ul style="list-style-type: none"> ▶ Always. Instructs Real User Monitor to collect data for all requests of the page. ▶ Never. Instructs Real User Monitor not to collect data for the page.
Name	<p>The name you want to assign the page.</p> <p>Syntax Exceptions: The page name must be unique and must not exceed 100 characters. The page name can include the following special characters: ; / ? = * & { } % @ + - \$</p>
URL	<p>The URL of the page.</p> <p>Default Value: The URL as reported by Real User Monitor.</p> <p>Syntax Exceptions: By default, asterisks in URLs are treated as wildcards. To define an asterisk as a literal and not as a wildcard, precede it with a backslash (\). For example, my*str.</p>

End User Over Time Report

<p>Description</p>	<p>Displays a selected end-user group's hits, latency, events and traffic over the course of time.</p> <p>The data in the End User Over Time report can be viewed either as a graphs (see page 403), or as a table (see page 406), by clicking on the appropriate tab.</p> <p>To access: Click the End User Over Time button for a selected end-user group in the End User Summary Report (see page 407).</p>
<p>Important Information</p>	<ul style="list-style-type: none"> ▶ Data for end users is aggregated by the Real User Monitor engine for each five minute period. This means that you will not see a real picture of such data if you view this report using a time breakdown of less than five minutes. ▶ If you select Week, Month, Quarter, Year, Past Week, Past Month, Past Quarter, or Past Year from the View box, the query is rounded to full days, 12 AM to 12 AM, based on the time zone set for the database (set by the database administrator in Platform Administration). The query is based only on aggregated data—not raw data—and can therefore be processed more quickly. The data is displayed according to the time zone set for the user, which is indicated on the right-hand side of the report title bar.

Report Settings

The area includes the following elements (listed alphabetically):

GUI Element	Description
<Common report settings>	For details, see “Understanding Common Report Elements” in <i>Reference Information</i> .
Active Filters	Indicates which active filters have been set. To set active filters, click the Active Filters link. For details, see “Active Filters Dialog Box” on page 378. Note: The active filters tabs enabled for this report are: ► End User Groups
Applications	Indicates the name of the selected application for which data is included in the report. If more than one application is selected, the number of selected applications is displayed. To select applications, click the Applications link. For details, see “Applications Dialog Box” on page 394.
Clear All	Click to clear any active filters that have been previously set.

End User Over Time Graphs

Description	When viewed as a graph, the End User Over Time report contains four graphs, one each for latency, page hits, traffic, and page events.
Important Information	Click on a data point or bar in any of the graphs to display the data for a shorter time range. The data displayed on all of the graphs changes accordingly.

Latency Graph

The Latency graph includes the following elements (listed alphabetically):

GUI Element	Description
<Legend>	Describes the color coding used in the graph.
<Line connecting data points>	Indicates the average latency in milliseconds for the end-user group at each point over the course of the defined time period. Tooltip: Hold the cursor over a data point to display the end-user group's average latency time at that point of time.
Latency <y-axis>	Displays the network latency time in milliseconds.
Time <x-axis>	Displays the time division units for the time range that you defined when generating the report.

Page Hits Graph

The Page Hits graph includes the following elements (listed alphabetically):

GUI Element	Description
<Bars>	Indicate the number of available and unavailable page hits for the end-user group at each point over the course of the defined time period. Tooltip: The end-user group's number of available or unavailable hits at that point of time.
<Legend>	Describes the color coding used in the graph.
Number of Hits <y-axis>	Displays the number of hits.
Time <x-axis>	Displays the time division units for the time range that you defined when generating the report.

Traffic Graph

The Traffic graph includes the following elements (listed alphabetically):

GUI Element	Description
<Bars>	Indicate the amount of HTTP and HTTPS traffic sent and received by the end-user group at each point over the course of the defined time period. Tooltip: The amount of HTTP or HTTPS traffic sent and received by the end-user group at that point of time.
<Legend>	Describes the color coding used in the graph.
KB <y-axis>	Displays the number of kilobytes.
Time <x-axis>	Displays the time division units for the time range that you defined when generating the report.

Pages with Events Graph

The Pages with Events graph includes the following elements (listed alphabetically):

GUI Element	Description
<Bars>	Indicate the number of pages on which error or performance events occurred, that were hit by the end-user group at each point over the course of the defined time period. Tooltip: The number of pages with events hit by the end-user group at that point of time.
<Legend>	Describes the color coding used in the graph.
Number of Pages <y-axis>	Displays the number of pages.
Time <x-axis>	Displays the time division units for the time range that you defined when generating the report.

End User Over Time Table

The End User Over Time table includes the following elements (listed alphabetically):

GUI Element	Description
Available Hits	Displays the total number of available page hits generated by the end-user group at a given point of time.
Errors	Displays the total number of pages hit by the end-user group at a given point of time, that had errors.
HTTP Traffic	Displays the number of kilobytes that the end-user group sent to, and received from, the servers via HTTP at a given point of time.
HTTPS Traffic	Displays the number of kilobytes that each end-user group sent to, and received from, the servers via HTTPS at a given point of time.
Latency	Displays the average network latency, in milliseconds, for the end-user group at a given point of time.
Performance Problems	Displays the total number of pages hit by the end-user group at a given point of time, that had performance events.
Time	Displays the time division units for the time range that you defined when generating the report.
Unavailable Hits	Displays the total number of unavailable page hits generated by the end-user group at a given point of time.

End User Summary Report

Description	<p>Displays data for specific end-user groups that were configured for Real User Monitor in End User Management Administration. Also displays aggregated data for unconfigured end-user groups, which is displayed grouped by country, or if the country is unknown, then grouped as OTHER.</p> <p>To access: Select Applications > End User Management > Real User > End User Summary</p>
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Report Settings


The area includes the following elements (listed alphabetically):

GUI Element	Description
<Common report settings>	For details, see “Understanding Common Report Elements” in <i>Reference Information</i> .
Active Filters	<p>Indicates which active filters have been set.</p> <p>To set active filters, click the Active Filters link. For details, see “Active Filters Dialog Box” on page 378.</p> <p>Note: The active filters tabs enabled for this report are:</p> <ul style="list-style-type: none"> ▶ End User Groups
Applications	<p>Indicates the name of the selected application for which data is included in the report. If more than one application is selected, the number of selected applications is displayed.</p> <p>To select applications, click the Applications link. For details, see “Applications Dialog Box” on page 394.</p>
Clear All	Click to clear any active filters that have been previously set.

Report Content

The End User Summary report includes the following elements (listed alphabetically):

GUI Element	Description
	<ul style="list-style-type: none"> ▶ End User Over Time button. Click to open the End User Over Time report for a selected configured end-user group, where you can view graphs or a table showing the end-user group's hits, latency, events and traffic over the course of time. For details on the End User Over Time report, see "End User Over Time Report" on page 402. ▶ Unconfigured End Users by Country/State button. Click to open the Unconfigured End Users by Country/State report for the selected unconfigured end-user group, which shows the same data as the End User Summary report for the end-users included in the selected unconfigured end-user group, grouped by country and state. For details on the Unconfigured End Users by Country/State report, see "Unconfigured End Users by Country/State, City, or IP" on page 516.
	<p>Page Summary button. Click to open the Page Summary report for a selected end-user group, where you can view data for the Web pages configured in End User Management Administration that were hit by the end-user group.</p> <p>For details on the Page Summary report, see "Page Summary Report" on page 461.</p>
	<p>Transaction Summary button. Click to open the Transaction Summary report for a selected end-user group, where you can view data for specific transactions that you configured in End User Management Administration.</p> <p>For details on the Transaction Summary report, see "Transaction Summary Report" on page 508.</p>

GUI Element	Description
	<p>Event Summary button. Click to open the Event Summary report for a selected end-user group, where you can view a summary of events in monitored applications that you configured in End User Management Administration.</p> <p>For details on the Event Summary report, see “Event Summary Report” on page 438.</p>
Available Page Hits	<p>Displays the total number of available page hits generated by each end-user group.</p> <p>Note: The sum of all the available page hits for each end-user group is displayed in the summary row.</p>
End User	<p>Displays the names of the end-users groups that were defined in End User Management Administration, as well as the end-user group IP addresses. For unconfigured end-user groups, the country name and IP addresses are displayed, or if the country is unknown, OTHER is displayed.</p>
HTTP Traffic	<p>Displays the number of kilobytes that each end-user group sent to, and received from, the servers via HTTP.</p> <p>Note: The sum of all the sent and received HTTP kilobytes for each end-user group is displayed in the summary row.</p>
HTTPS Traffic	<p>Displays the number of kilobytes that each end-user group sent to, and received from, the servers via HTTPS.</p> <p>Note: The sum of all the sent and received HTTPS kilobytes for each end-user group is displayed in the summary row.</p>

GUI Element	Description
<p>Latency</p>	<p>Displays the average network latency, in milliseconds, for each end-user group. This column is color-coded, based on the end-user group's latency in relation to the end-user latency threshold you configured for the end-user group in End User Management Administration, or the default end-user group latency threshold that is configured.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical <p>Tooltip: The configured, or default, end-user group latency threshold in milliseconds.</p> <p>Note: The average latency for all end-user groups is displayed in the summary row.</p>
<p>Location</p>	<p>Displays the geographic location (city, state, and country) of each end-user group. If the geographic location is unknown, OTHER is displayed.</p>
<p>Pages with Errors</p>	<p>Displays, for each end-user group, the total number of pages hit that had errors.</p> <p>Note: The sum of all the pages with errors for each end-user group is displayed in the summary row.</p>
<p>Pages with High Latency</p>	<p>Displays, for each end-user group, the total number of pages whose average network latency exceeded the configured latency threshold.</p> <p>Note: The sum of all the slow page hits for each end-user group is displayed in the summary row.</p>
<p>Pages with Performance Problems</p>	<p>Displays, for each end-user group, the total number of pages hit that had performance events.</p> <p>Note: The sum of all the pages with performance problems for each end-user group is displayed in the summary row.</p>

GUI Element	Description
Slow Pages Latency	<p>Displays the average latency, in milliseconds, of each end-user group's slow page hits.</p> <p>Note: The average latency for all end-user groups slow page hits is displayed in the summary row.</p>
Unavailable Page Hits	<p>Displays the total number of unavailable page hits generated by each end-user group.</p> <p>Note: The sum of all the unavailable page hits for each end-user group is displayed in the summary row.</p>

End Users by Page Report

Description	<p>Displays data for a selected Web page configured for Real User Monitor in End User Management Administration, broken down by end-user groups.</p> <p>For information on configuring Web pages to be monitored, see “New/Edit Page” on page 339.</p> <p>The End Users by Page report contains the following tables, accessed by clicking the appropriate tab:</p> <ul style="list-style-type: none"> ▶ General (for details, see page 413) ▶ Availability (for details, see page 415) ▶ Performance (for details, see page 416) <p>To access: Click the End Users by Page button for the page in the “Page Summary Report” on page 461.</p>
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The End Users by Page report includes the following areas:

Report Settings



The area includes the following elements (listed alphabetically):

GUI Element	Description
<Common report settings>	For details, see “Understanding Common Report Elements” in <i>Reference Information</i> .
Active Filters	<p>Indicates which active filters have been set.</p> <p>To set active filters, click the Active Filters link. For details, see “Active Filters Dialog Box” on page 378.</p> <p>Note: The active filters tabs enabled for this report are:</p> <ul style="list-style-type: none"> ➤ Events ➤ Pages ➤ End Users ➤ User Properties ➤ Servers
Applications	<p>Indicates the name of the selected application for which data is included in the report. If more than one application is selected, the number of selected applications is displayed.</p> <p>To select applications, click the Applications link. For details, see “Applications Dialog Box” on page 394.</p>
Clear All	Click to clear any active filters that have been previously set.

General

Description	Displays general data related to the selected Web page, broken down by end-user groups.
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The General table includes the following elements (listed alphabetically):



GUI Element	Description
	<p>Page Over Time button. Click to open the Page Over Time report, where you can view details of the availability, performance, hits availability, and breakdown for the selected Web page over the course of time, for an end-user group.</p> <p>For details on the Page Over Time report, see “Page Over Time Report” on page 453.</p>
	<p>View Event Summary button. Click to open the Event Summary report, where you can view event summary data for each end-user group for the page you selected.</p> <p>For details on the Event Summary report, see “Event Summary Report” on page 438.</p>
# of Components	<p>Displays the average number of page components that were downloaded for the page.</p> <p>Note: The average number of components may not always be an integer. This is caused by caching, which means that the components of a page may not all be downloaded each time the page is hit.</p>
Availability	<p>Displays the percentage of requests for which the page was available for each end-user group. This column is color-coded, based on the page’s availability in relation to the page availability threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical <p>Note: If a page is unavailable, its data is not included in the page performance calculations.</p>

GUI Element	Description
End User	Displays the end-user groups that accessed the selected page.
Informational Events	Displays the number of informational events that occurred on the page, based on the informational events you defined for the page, or application, in End User Management Administration.
Page Size	Displays the average downloaded size, in kilobytes, of the page.
Page Time	<p>Displays the average amount of time, in seconds, it took for the page to download. This column is color-coded, based on the page's download time in relation to the page time threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical
Server Time	<p>Displays the average amount of time, in seconds, that it took the server to process the requests for the page. This column is color-coded, based on the page's server time in relation to the server time threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical
Total Hits	Displays the total number of requests that the page received.

Availability

Description	Displays availability data related to the selected Web page, broken down by end-user groups.
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The Availability table includes the following elements (listed alphabetically):



GUI Element	Description
	<p>Page Over Time button. Click to open the Page Over Time report, where you can view details of the availability, performance, hits availability, and breakdown for the selected Web page over the course of time, for an end-user group.</p> <p>For details on the Page Over Time report, see “Page Over Time Report” on page 453.</p>
	<p>View Event Summary button. Click to open the Event Summary report, where you can view event summary data for each end-user group for the page you selected.</p> <p>For details on the Event Summary report, see “Event Summary Report” on page 438.</p>
Application Errors	Displays the number of application errors encountered by the page, based on the application errors you defined for the page, or the application, in End User Management Administration.
Availability	<p>Displays the percentage of requests for which the page was available for each end-user group. This column is color-coded, based on the page’s availability in relation to the page availability threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical <p>Note: If a page is unavailable, its data is not included in the page performance calculations.</p>
End User	Displays the end-user groups that accessed the selected page.

GUI Element	Description
HTTP Errors	Displays the number of HTTP errors encountered by the page, based on the HTTP errors you defined for the Real User Monitor engine in End User Management Administration.
Stopped	Displays the number of hits for which the page was unavailable because page downloading was stopped.
Total Hits	Displays the total number of requests that the page received.
Unavailable Hits	Displays the number of hits for which the page was unavailable.

Performance

Description	Displays performance data related to the selected Web page, broken down by end-user groups.
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The Performance table includes the following elements (listed alphabetically):

GUI Element	Description
	<p>Page Over Time button. Click to open the Page Over Time report, where you can view details of the availability, performance, hits availability, and breakdown for the selected Web page over the course of time, for an end-user group.</p> <p>For details on the Page Over Time report, see “Page Over Time Report” on page 453.</p>
	<p>View Event Summary button. Click to open the Event Summary report, where you can view event summary data for each end-user group for the page you selected.</p> <p>For details on the Event Summary report, see “Event Summary Report” on page 438.</p>
Client Time	Displays the average amount of time, in seconds, that the page’s requests were delayed on the client machine.
End User	Displays the end-user groups that accessed the selected page.
Max Page Time	Displays the maximum amount of time, in seconds, it took for the page to download.
Network Time	Displays the average amount of time, in seconds, that the page’s requests were delayed on the network.
Page Time	<p>Displays the average amount of time, in seconds, it took for the page to download. This column is color-coded, based on the page’s download time in relation to the page time threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical
Page Time of Slow Hits	Displays the average amount of time, in seconds, that it took to download the page’s slow page requests.

GUI Element	Description
Server Time	Displays the average amount of time, in seconds, that it took the server to process the requests for the page.
Server Time of Slow Server Hits	Displays the average server time, in seconds, for the page's slow hits.
Server Time to First Buffer	<p>Displays the amount of time that passes from the receipt of ACK of the initial HTTP request (usually GET) until the first buffer is successfully received back from the Web server.</p> <p>Note: The server time to first buffer measurement is a good indicator of Web server delay.</p>
Slow Hits	Displays the total number of hits for the page, whose page time exceeded the configured page time threshold.
Slow Server Hits	Displays the total number of hits for the page, whose server time exceeded the configured server time threshold.
Total Hits	Displays the total number of requests that the page received.

End Users by Transaction Report

Description	<p>Displays general, availability, total performance, net performance, or server performance data for each end-user group that ran the transaction you selected, depending on the table in the Transaction Summary report from which you accessed the Transaction Broken Down by End Users report.</p> <p>You configure end-user groups to be monitored in Admin > Monitors.</p> <p>The End Users by Transaction report contains the following tables, accessed by clicking the appropriate tab:</p> <ul style="list-style-type: none">▶ General (see page 421)▶ Availability (see page 423)▶ Total Performance (see page 424)▶ Net Performance (see page 425)▶ Server Performance (see page 426) <p>To access: Click the End Users by Transaction button for the transaction in the Transaction Summary Report (see page 508).</p>
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The End Users by Transaction report includes the following areas:

Report Settings


The area includes the following elements (listed alphabetically):

GUI Element	Description
<Common report settings>	For details, see “Understanding Common Report Elements” in <i>Reference Information</i> .
Active Filters	<p>Indicates which active filters have been set.</p> <p>To set active filters, click the Active Filters link. For details, see “Active Filters Dialog Box” on page 378.</p> <p>Note: The active filters tabs enabled for this report are:</p> <ul style="list-style-type: none"> ➤ Transactions ➤ End User Groups ➤ User Properties ➤ Servers
Applications	<p>Indicates the name of the selected application for which data is included in the report. If more than one application is selected, the number of selected applications is displayed.</p> <p>To select applications, click the Applications link. For details, see “Applications Dialog Box” on page 394.</p>
Clear All	Click to clear any active filters that have been previously set.

General

Description	Displays general data related to the selected transaction, broken down by end-user groups.
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The General tab includes the following elements (listed alphabetically):


GUI Element	Description
	<p>Transaction Over Time button. Click to open the Transaction Over Time report, where you can view details of the availability, page times, run availability, and breakdown for the selected transaction, over the course of time, for an end-user group.</p> <p>For details, see “Transaction Over Time Report” on page 501.</p>
Availability	<p>Displays the percentage of transactions for which there were no availability problems. This column is color-coded, based on the transaction’s availability in relation to the transaction availability threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ▶ Green. OK ▶ Red. Critical <p>Note: If a transaction is unavailable, its data is not included in the transaction performance calculations.</p>
Client Time	Displays the total time, in seconds, that each page included in the transaction was delayed on the client machine.
End User	Displays the end-user group name and IP range.

GUI Element	Description
Net Time	<p>Displays the total download time of all the pages included in the transaction (in End User Management Administration, you define for each page included in the transaction whether this includes download time only, or both download time and think time), in seconds, for each end-user group. This column is color-coded, based on the transaction's net time in relation to the net time threshold you configured in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical
Network Time	<p>Displays the total time, in seconds, that each page included in the transaction was delayed on the network.</p>
Server Time	<p>Displays the total server time of all the pages included in the transaction. This column is color-coded, based on the transaction's server time in relation to the transaction server time threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical
Think Time	<p>Displays the total think time, in seconds, for the transaction for each end-user group.</p>
Total Time	<p>Displays an average of the overall transaction time (from the start of the first page to the end of the last page), in seconds, for each end-user group. This column is color-coded, based on the transaction's total time in relation to the total time threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical
Transaction Runs	<p>Displays the total number of run instances for the transaction, for each end-user group.</p>
Transaction Size	<p>Displays the size, in kilobytes, of the transaction for each end-user group.</p>

Availability

Description	Displays availability data related to the selected transaction, broken down by end-user groups.
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The Availability tab includes the following elements (listed alphabetically):

GUI Element	Description
	<p>Transaction Over Time button. Click to open the Transaction Over Time report, where you can view details of the availability, page times, run availability, and breakdown for the selected transaction, over the course of time, for an end-user group.</p> <p>For details, see “Transaction Over Time Report” on page 501.</p>
Availability	<p>Displays the percentage of transactions for which there were no availability problems. This column is color-coded, based on the transaction’s availability in relation to the transaction availability threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ▶ Green. OK ▶ Red. Critical <p>Note: If a transaction is unavailable, its data is not included in the transaction performance calculations.</p>
Availability Threshold	Displays the availability threshold configured for the transaction in End User Management Administration.
End User	Displays the end-user group name and IP range.
Transaction Runs	Displays the total number of run instances for the transaction, for each end-user group.
Unavailable Runs	Displays the total number of transaction run instances for which availability problems occurred, for each end-user group.

Total Performance

Description	Displays total performance data related to the selected transaction, broken down by end-user groups.
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The Total Performance tab includes the following elements (listed alphabetically):

GUI Element	Description
	<p>Transaction Over Time button. Click to open the Transaction Over Time report, where you can view details of the availability, page times, run availability, and breakdown for the selected transaction, over the course of time, for an end-user group.</p> <p>For details, see “Transaction Over Time Report” on page 501.</p>
End User	Displays the end-user group name and IP range.
Slow Transaction Runs	Displays the number of run instances whose total transaction time exceeded the configured total time threshold, for each end-user group.
Total Time	<p>Displays an average of the overall transaction time (from the start of the first page to the end of the last page), in seconds, for each end-user group. This column is color-coded, based on the transaction’s total time in relation to the total time threshold you configured in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical
Total Time of Slow Transaction Runs	Displays the average total transaction time, in seconds, of the transaction’s slow runs, for each end-user group.
Total Time Threshold	Displays the total transaction time threshold configured for the transaction in End User Management Administration.
Transaction Runs	Displays the total number of run instances for the transaction, for each end-user group.

Net Performance

Description	Displays net performance data related to the selected transaction, broken down by end-user groups.
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The Net Performance tab includes the following elements (listed alphabetically):


GUI Element	Description
	<p>Transaction Over Time button. Click to open the Transaction Over Time report, where you can view details of the availability, page times, run availability, and breakdown for the selected transaction, over the course of time, for an end-user group.</p> <p>For details, see “Transaction Over Time Report” on page 501.</p>
Client Time	Displays the total time, in seconds, that each page included in the transaction was delayed on the client machine.
End User	Displays the end-user group name and IP range.
Net Time	<p>Displays the total download time of all the pages included in the transaction (in End User Management Administration, you define for each page included in the transaction whether this includes download time only, or both download time and think time), in seconds, for each end-user group. This column is color-coded, based on the transaction’s net time in relation to the net time threshold you configured in End User Management Administration.</p> <ul style="list-style-type: none"> ▶ Green. OK ▶ Red. Critical
Net Time of Slow Transaction Runs	Displays the average net transaction time, in seconds, of the transaction’s slow runs, for each end-user group.
Net Time Threshold	Displays the net time threshold configured for the transaction in End User Management Administration.

GUI Element	Description
Network Time	Displays the total time, in seconds, that each page included in the transaction was delayed on the network.
Server Time	<p>Displays the total server time of all the pages included in the transaction. This column is color-coded, based on the transaction's server time in relation to the transaction server time threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical
Slow Transaction Runs	Displays the number of the transaction run instances whose net transaction time exceeded the configured net time threshold, for each end-user group.
Transaction Runs	Displays the total number of run instances for the transaction, for each end-user group.

Server Performance

Description	Displays server performance data related to the selected transaction, broken down by end-user groups.
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The Net Performance tab includes the following elements (listed alphabetically):

GUI Element	Description
	<p>Transaction Over Time button. Click to open the Transaction Over Time report, where you can view details of the availability, page times, run availability, and breakdown for the selected transaction, over the course of time, for an end-user group.</p> <p>For details, see “Transaction Over Time Report” on page 501.</p>
End User	Displays the end-user group name and IP range.
Net Time	<p>Displays the total download time of all the pages included in the transaction (in End User Management Administration, you define for each page included in the transaction whether this includes download time only, or both download time and think time), in seconds, for each end-user group. This column is color-coded, based on the transaction’s net time in relation to the net time threshold you configured in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical
Server Time	<p>Displays the total server time of all the pages included in the transaction. This column is color-coded, based on the transaction’s server time in relation to the transaction server time threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical
Server Time of Slow Transaction Runs	Displays the average server time, in seconds, of the transaction’s slow runs, for each end-user group.
Server Time Threshold	Displays the server time threshold configured for the transaction defined in End User Management Administration.

GUI Element	Description
Slow Transaction Runs	Displays the number of the transaction run instances whose net transaction time exceeded the configured net time threshold, for each end-user group.
Transaction Runs	Displays the total number of run instances for the transaction, for each end-user group.

Event Analysis Report

Description	<p>Displays data for a selected event type, broken down by pages, servers, and end-user groups. Also displays the Event Count Over Time report for the selected event type.</p> <p>The data in the Event Analysis report can be viewed either as a graph (see page 429), or as a table (see page 431), by clicking on the appropriate tab. The report opens in the same view as the Event Summary report from which it was called.</p> <p>To access:</p> <ul style="list-style-type: none"> ➤ Click a pie chart slice in the Event Summary report, when viewed as a graph. ➤ Click the View Event Analysis Report button in the Event Summary report, when viewed as a table. ➤ Click on a data point in the Event Count Over Time report, when viewed as a graph. ➤ Click on a value of the number of events that occurred for an event type in the Event Count Over Time report, when viewed as a table.
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Report Settings

The area includes the following elements (listed alphabetically):

GUI Element	Description
<Common report settings>	For details, see “Understanding Common Report Elements” in <i>Reference Information</i> .
Active Filters	<p>Indicates which active filters have been set.</p> <p>To set active filters, click the Active Filters link. For details, see “Active Filters Dialog Box” on page 378.</p> <p>Note: The active filters tabs enabled for this report are:</p> <ul style="list-style-type: none"> ➤ Events ➤ Pages ➤ End User Groups ➤ User Properties ➤ Servers
Applications	<p>Indicates the name of the selected application for which data is included in the report. If more than one application is selected, the number of selected applications is displayed.</p> <p>To select applications, click the Applications link. For details, see “Applications Dialog Box” on page 394.</p>
Clear All	Click to clear any active filters that have been previously set.

View as Graph

Description	When viewed as a graph, the Event Analysis report contains four panes, one each for data by pages, data by servers and data by end-user groups, and the fourth pane displaying the Event Count Over Time report.
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Data by Pages, Servers and End-User Groups Panes

The Data by Pages, Servers, and End-User Groups panes include the following elements (listed alphabetically):

GUI Element	Description
<Legend>	Describes the color coding used in the pie charts.
<Pie chart>	<p>Comprises color-coded slices representing the different pages, servers, and end-user groups on which the events occurred.</p> <p>Tooltip: Hold the cursor over a slice of a pie chart to display the page, server, or end-user group name represented by the slice, the number of events that occurred on the page, server, or end-user group in the time period for which you generated the report, and the number of sessions in which the events occurred.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ Up to 10 different slices can be displayed per chart. If there are more than 10 pages, servers, or end-user groups to be displayed, the ones with the least number of events are grouped together in a slice called others. ▶ In the pie chart showing data by pages, events that occurred in a session and that are not related to a specific URL, are grouped together in a slice called Session Events.
Event Analysis Report	<p>Select from the right-click menu for a pie-chart slice. Regenerates the Event Analysis report to show more detailed data for the specific page, server, or end-user group represented by the right-clicked slice.</p> <p>Note: Regenerating the Event Analysis report for a specific page, server, or end-user group changes the data displayed in all of the panes accordingly.</p>
Event Log Report	<p>Select from the right-click menu for a pie-chart slice. Opens the Event Log report for a specific page, server, or end-user group. For details on the Event Log report, see “Event Log” on page 435.</p>

Event Count Over Time Pane

Description	The Event Count Over Time report shows data for the selected event type, broken down into time intervals. You can narrow the time period for which data is displayed in the Event Count Over Time report, by clicking on an individual point to obtain more detailed information for a specific event. For details on the Event Count Over Time report, see “Event Count Over Time Report” on page 432.
Important Information	Changing the time period of the Event Count Over Time report causes the data displayed in the other panes of the Event Analysis report to change accordingly.

View as Table

Description	When viewed as a table, the Event Analysis report contains four tables, one each for data by pages, data by servers, and data by end-user groups, and the fourth table displaying the Event Count Over Time report.
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Data by Pages, Servers and End-User Groups Tables

The Data by Pages, Servers, and End-User Groups tables include the following elements (listed alphabetically):

GUI Element	Description
End User	In the Event by End Users table, displays the End-User Group name.
Event Count	Displays the number of events that occurred on the page, server, or end-user group in the time period for which you generated the report.
Page	In the Event by Pages table, displays the page name. Note: Events that occurred in a session and that are not related to a specific URL, are grouped together under Session Events in the Event by Pages table.

GUI Element	Description
Server	In the Event by Server table, displays the server name.
Session Count	Displays the number of sessions in which the events occurred.

Event Count Over Time Table

Description	The Event Count Over Time table shows data for the selected event type, broken down into time intervals. You can narrow the time period for which data is displayed in the Event Count Over Time report, by clicking on the individual the number of events displayed for a particular time. For more information on working with the Event Count Over Time report, see “Event Count Over Time Report” on page 432.
Important Information	Changing the time period of the Event Count Over Time report causes the data displayed in the other tables of the Event Analysis report to change accordingly.

Event Count Over Time Report

Description	<p>Displays data for all events, or sessions with events, in monitored applications that you configured in End User Management Administration, broken down by time intervals.</p> <p>The report can be viewed as a graph (see page 434), or as a table (see page 435), by clicking on the appropriate tab. The report opens in the graph view by default.</p> <p>To access: Select Applications > End User Management > Real User > Event Count Over Time</p>
Important Information	You can choose to view individual events, or sessions with events, in the report by selecting the appropriate option before generating the report.

Report Settings

The area includes the following elements (listed alphabetically):

GUI Element	Description
<Common report settings>	For details, see “Understanding Common Report Elements” in <i>Reference Information</i> .
Active Filters	<p>Indicates which active filters have been set.</p> <p>To set active filters, click the Active Filters link. For details, see “Active Filters Dialog Box” on page 378.</p> <p>Note: The active filters tabs enabled for this report are:</p> <ul style="list-style-type: none"> ➤ Events ➤ Pages ➤ End User Groups ➤ User Properties ➤ Servers
Applications	<p>Indicates the name of the selected application for which data is included in the report. If more than one application is selected, the number of selected applications is displayed.</p> <p>To select applications, click the Applications link. For details, see “Applications Dialog Box” on page 394.</p>
Clear All	Click to clear any active filters that have been previously set.

View as Graph

The Event Count Over Time graph includes the following elements (listed alphabetically):

GUI Element	Description
<Legend>	Describes the color coding used in the graph.
<Lines connecting data points>	<p>A different colored line on the graph is shown for each type of event that you configured for the monitored application.</p> <p>Note: Click on a data point in the graph to display the Event Analysis report for a specific event in a shorter time range. For details on the Event Analysis report, see “Event Analysis Report” on page 428.</p>
Number of Events <y-axis>	Displays the number of events or sessions, depending on the selection you made.
Time <x-axis>	Displays the time division units for the time range that you defined when generating the report.

View as Table

The Event Count Over Time table includes the following elements (listed alphabetically):

GUI Element	Description
<Date/time>	<p>The table shows a column for each time division unit for the time range that you defined when generating the report. The number of events that occurred for each event type at each time division unit is displayed.</p> <p>Note: Click on an individual number to display the Event Analysis report for a specific event in a shorter time range. For details on the Event Analysis report, see “Event Analysis Report” on page 428.</p>
Event Name	<p>Displays the name of the event type configured for the monitored application selected, or a different HTTP error event type configured for the Real User Monitor engine.</p>

Event Log

Description	<p>Displays a log of the occurrences of a specific event type for a selected time frame.</p> <p>To access: Select Event Log Report from the right-click menu for a pie-chart slice in the Event Analysis Report, displayed as a graph. For details on the Event Analysis report, see “Event Analysis Report” on page 428.</p>
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Report Settings

The area includes the following elements (listed alphabetically):

GUI Element	Description
<Common report settings>	For details, see “Understanding Common Report Elements” in <i>Reference Information</i> .
Active Filters	<p>Indicates which active filters have been set.</p> <p>To set active filters, click the Active Filters link. For details, see “Active Filters Dialog Box” on page 378.</p> <p>Note: The active filters tabs enabled for this report are:</p> <ul style="list-style-type: none"> ➤ Events ➤ Pages ➤ End User Groups ➤ User Properties ➤ Servers
Applications	<p>Indicates the name of the selected application for which data is included in the report. If more than one application is selected, the number of selected applications is displayed.</p> <p>To select applications, click the Applications link. For details, see “Applications Dialog Box” on page 394.</p>
Clear All	Click to clear any active filters that have been previously set.

Report Content

The Event Log includes the following elements (listed alphabetically):

GUI Element	Description
	<p>View Session Details button. Click to open the Session Details page, where you can view the properties, events, and pages of a session.</p> <p>For details on the Session Details page, see “Session Details Page” on page 490.</p>
End User	Displays the name of the end-user group that hit the page on which the event occurred.
Event Description	Displays the event description as you configured in End User Management Administration.
Page	Displays the URL of the page on which the event occurred.
Time	Displays the date and time that the event occurred.

Event Summary Report

<p>Description</p>	<p>Displays a summary of events in monitored applications that you configured in End User Management Administration.</p> <p>The data in the Event Summary report can be viewed either as a graph (see page 440), or as a table (see page 440), by clicking on the appropriate tab. The report opens in the View as Graph tab by default.</p> <p>To access:</p> <ul style="list-style-type: none"> ▶ Select Applications > End User Management > Real User > Global Statistics ▶ Click the Event Summary button for a selected end-user group in the End User Summary Report (see page 407).
<p>Important Information</p>	<ul style="list-style-type: none"> ▶ The Event Summary report shows data for HTTP errors, application errors, informational events, and performance events. You can deselect any of these options prior to generating the report by clearing the relevant check box. ▶ If you select Week, Month, Quarter, Year, Past Week, Past Month, Past Quarter, or Past Year from the View box, the query is rounded to full days, 12 AM to 12 AM, based on the time zone set for the database (set by the database administrator in Platform Administration). The query is based only on aggregated data—not raw data—and can therefore be processed more quickly. The data is displayed according to the time zone set for the user, which is indicated on the right-hand side of the report title bar.

Report Settings

The area includes the following elements (listed alphabetically):

GUI Element	Description
<Common report settings>	For details, see “Understanding Common Report Elements” in <i>Reference Information</i> .
Active Filters	<p>Indicates which active filters have been set.</p> <p>To set active filters, click the Active Filters link. For details, see “Active Filters Dialog Box” on page 378.</p> <p>Note: The active filters tabs enabled for this report are:</p> <ul style="list-style-type: none"> ➤ Events ➤ Pages ➤ End User Groups ➤ User Properties ➤ Servers
Applications	<p>Indicates the name of the selected application for which data is included in the report. If more than one application is selected, the number of selected applications is displayed.</p> <p>To select applications, click the Applications link. For details, see “Applications Dialog Box” on page 394.</p>
Clear All	Click to clear any active filters that have been previously set.


View as Graph

<p>Description</p>	<p>The Event Summary report contains up to four panes, one each for HTTP errors, application errors, informational events, and performance events. If you deselect any of these options prior to generating the report, that specific pane is not displayed.</p> <p>Each pane displays a pie chart with color-coded slices representing the different types of events included in the pane's main event type, for which there is data. Up to 10 different slices can be displayed per chart. If there are more than 10 types of events to be displayed, the types with the least number of occurrences are grouped together in a slice called others. The color coding used for the slices is described in the legend.</p>
<p>Important Information</p>	<ul style="list-style-type: none"> ▶ Hold the cursor over a slice of a pie chart to display a tooltip that shows the event type represented by the slice, the number of events of this type that occurred in the time period for which you generated the report, and the number of sessions in which the events occurred. ▶ To view the Event Analysis report for a specific type of event, click on the slice in the pie chart that represents the event or error for which you want to view the report. The Event Analysis report opens. For details on the Event Analysis report, see "Event Analysis Report" on page 428.

View as Table

<p>Description</p>	<p>The Event Summary report contains four tables, one each for HTTP errors, application errors, informational events, and performance events. If you deselect any of these options prior to generating the report, that specific pane will not be displayed.</p> <p>Each table includes a row for every type of event included in the table's main event type, for which there is data.</p>
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Each table in the Events Summary report includes the following elements (listed alphabetically):

GUI Element	Description
	<p>View Event Analysis Report button. Click to open the Event Analysis report, where you can view detailed data for a selected event type.</p> <p>For details on the Event Analysis report, see “Event Analysis Report” on page 428.</p>
# of Events	Displays the number of events that occurred in the monitored application during the time range you specified for the report.
# of Sessions	Displays the number of sessions in which the events occurred.
Event Type	Displays the event name.

Find Dialog Box

Description	<p>You use the Find dialog box to search for a specific string in the HTML source code of a session snapshot.</p> <p>To access: In the Source tab of the Session Viewer Page (see page 495) or the Snapshot Viewer Page (see page 500), click on an HTML page and within the page press CTRL + F.</p>
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The Find dialog box includes the following elements (listed alphabetically):

GUI Element	Description
<Text field>	Enter the string for which you want to search.
Close	Click the Close button to close the Find dialog box when you have finished searching.
Down	Select the Down option to search the source code from top to bottom.
Find	Click the Find button to find the next occurrence of the string for which you are searching in the source code.
Up	Select the Up option to search the source code from bottom to top.

Global Statistics Report

<p>Description</p>	<p>Contains tables displaying general page, end-user, and broken link data that is not related to the specific pages and end-users that you define for Real User Monitor in End User Management Administration. To configure monitoring settings for Global Statistics report data, see “Edit General Settings” on page 304.</p> <p>The report contains the following tables:</p> <ul style="list-style-type: none"> ▶ Most Popular Pages – see page 444 ▶ Most Active End Users – see page 445 ▶ Slowest End Users – see page 446 ▶ Pages with Slowest Server Time – see page 448 ▶ Pages with Most Errors – see page 449 ▶ Broken Links – see page 450 <p>To access: Select Applications > End User Management > Real User > Global Statistics</p>
<p>Important Information</p>	<ul style="list-style-type: none"> ▶ The data displayed in the tables is based on all data collected from the selected engine, and not on the specific pages and end-user groups configured for Real User Monitor in End User Management Administration. The data is collected according to the settings defined for the engine in End User Management Administration. For information on configuring these settings, see “Edit General Settings” on page 304. ▶ You generate the Global Statistics report for a specific application, which you select from the list in the Application field on the report page. ▶ Data for servers and end users is aggregated by the Real User Monitor engine for each five minute period. This means that you will not see a real picture of such data if you view this report using a time breakdown of less than five minutes.

The Global Statistics report includes the following areas:

Report Settings


The area includes the following elements (listed alphabetically):

GUI Element	Description
<Common report settings>	For details, see “Understanding Common Report Elements” in <i>Reference Information</i> .
Application	Select the application from the dropdown list for which data is included in the report.

Most Popular Pages

Description	Displays data for the pages that received the highest number of hits.
Important Information	In calculating the most popular pages, Real User Monitor takes into account which pages were most popular during each one-hour interval and the number of intervals for which the pages were most popular.

The Most Popular Pages table includes the following elements (listed alphabetically):

GUI Element	Description
	<p>Define Page button. Click to open the Define Page dialog box, where you add an undefined page to the list of configured pages in End User Management Administration.</p> <p>For details on configuring pages in End User Management Administration, see “New/Edit Page” on page 339.</p> <p>For details on the Define Page dialog box, see “Define Page Dialog Box” on page 400.</p>
Defined	Indicates whether a page was defined in End User Management Administration at the time at which the data sample was compiled by the Real User Monitor engine.
Hits	Displays the total number of requests that each page received for the entire amount of time that it was most popular.
Page	Displays the URLs of the most popular pages.

Most Active End Users

Description	Displays data for the end-user groups with the highest number of page requests.
Important Information	In calculating the most active end-users, Real User Monitor takes into account which end-user groups were most active during each one-hour interval and the number of intervals for which the end-user groups were most active.

The Most Active End Users table includes the following elements (listed alphabetically):

GUI Element	Description
Defined	Indicates whether a page was defined in End User Management Administration at the time at which the data sample was compiled by the Real User Monitor engine.
End User	Displays the names and IP addresses of the most active end-user groups.
End-User Location	Displays the geographic location of each end-user group.
HTTP Traffic	Displays the number of kilobytes that each end-user group sent to, and received from, the server(s) via HTTP.
HTTPS Traffic	Displays the number of kilobytes that each end-user group sent to, and received from, the server(s) via HTTPS.
Latency	Displays the average network latency (the round trip time for a packet), in milliseconds, for each end-user group.
Page Hits	Displays the total number of page hits generated by each end-user group for the entire amount of time that it was most active.

Slowest End Users

Description	Displays data for the end-user groups that experienced the highest average network latency.
Important Information	In calculating the slowest end-users, Real User Monitor takes into account which end-user groups were slowest during each five-minute interval and the number of intervals for which the end-user groups were slowest.


The Slowest End Users table includes the following elements (listed alphabetically):

GUI Element	Description
Defined	Indicates whether a page was defined in End User Management Administration at the time at which the data sample was compiled by the Real User Monitor engine.
End User	Displays the names or IP addresses of the slowest end-user groups.
End-User Location	Displays the geographic location of each end-user group.
HTTP Traffic	Displays the number of kilobytes that each end-user group sent to, and received from, the server(s) via HTTP.
HTTPS Traffic	Displays the number of kilobytes that each end-user group sent to, and received from, the server(s) via HTTPS.
Latency	Displays the average network latency, in milliseconds, for each end user.
Page Hits	Displays the total number of page hits generated by each end-user group for the entire amount of time that it was one of the slowest end-users.

Pages with Slowest Server Time

Description	Displays data for the pages with the longest server time, from those pages whose average server time is greater than the server time threshold you configured for the page in End User Management Administration.
Important Information	<ul style="list-style-type: none"> ▶ In calculating the pages with the slowest server time, Real User Monitor takes into account which pages had the slowest server time during each five-minute interval, and the number of intervals for which the pages were slowest. ▶ It is possible that a page included in the Pages with Slowest Server Time table will have a number of hits that would seem to qualify it for inclusion in the Most Popular Pages table, but it is not included. This is due to the different aggregation schedule between the Slowest Pages (aggregated every five minutes) and the Most Popular Pages (aggregated every hour).

The Pages with Slowest Server Time table includes the following elements (listed alphabetically):


GUI Element	Description
	<p>Define Page button. Click to open the Define Page dialog box, where you add an undefined page to the list of configured pages in End User Management Administration.</p> <p>For details on configuring pages in End User Management Administration, see “New/Edit Page” on page 339.</p> <p>For details on the Define Page dialog box, see “Define Page Dialog Box” on page 400.</p>
Download Time	Displays the average amount of time it took to download each page.
Hits	Displays the total number of hits that each page received for the entire amount of time that it was one of the slowest pages.

GUI Element	Description
Page URL	Displays the URLs of the slowest pages.
Server Time	Displays the average amount of time, in seconds, that it took the server to process the requests for each page.

Pages with Most Errors

Description	Displays data for the pages on which the most HTTP and application errors occurred.
Important Information	In calculating the pages with most errors, Real User Monitor takes into account which pages had the most errors during each five-minute interval and the number of intervals for which the pages had most errors.

The Pages with Most Errors table includes the following elements (listed alphabetically):

GUI Element	Description
	<p>Define Page button. Click to open the Define Page dialog box, where you add an undefined page to the list of configured pages in End User Management Administration.</p> <p>For details on configuring pages in End User Management Administration, see “New/Edit Page” on page 339</p> <p>For details on the Define Page dialog box, see “Define Page Dialog Box” on page 400.</p>
Application Errors	Displays the total number of application errors that occurred on each page.
HTTP Errors	Displays the total number of HTTP errors that occurred on each page.

GUI Element	Description
Page	Displays the URLs of the pages with most errors.
Total Errors	Displays the total number of HTTP and application errors that occurred on each page.

Broken Links

Description	Displays data for the broken links encountered on specific host machines that you configure for Real User Monitor in End User Management Administration, experienced most frequently by end-users.
Important Information	In calculating the most frequent broken links, Real User Monitor takes into account which broken links were most frequent during each five-minute interval and the number of intervals for which the broken links were most frequent.

The Broken Links table includes the following elements (listed alphabetically):

GUI Element	Description
# of Occurrences	Displays the total number of occurrences of each broken link for the entire amount of time that it was considered a frequent broken link.
First Occurrence	Displays the time at which an end-user group first experienced the broken link.
Last Occurrence	Displays the time at which an end-user group last experienced the broken link.
Page URL	Displays the URLs of the pages with the most frequent broken links.
Referring URL	Displays the URL from which each broken link was accessed.

Page Details Page

Description	<p>Displays details of a page and includes the General Pane (see page 451) showing general page properties, Events Pane (see page 452) showing the configured events that occurred on the page, and URL Parameters Pane (see page 453) showing the parameters included in the page's URL.</p> <p>To access: Click the View Page Details button in the Session Details Page (see page 490).</p>
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General Pane

The General pane includes the following elements (listed alphabetically):

GUI Element	Description
Client Time	Displays the amount of time, in seconds, that the page was active on the client machine.
HTTP Method	Displays the HTTP method used to access the page.
Network Time	Displays the amount of time, in seconds, that the page was active on the network.
Number of Components	Displays the number of components included in the page.
Page	Displays the name configured for the page in End User Management Administration, or blank if the page has not been configured.
Page Size	Displays the downloaded size, in kilobytes, of the page.
Page Threshold	Displays the page time threshold configured for the page in End User Management Administration.
Page Time	Displays the total amount of time, in seconds, from when the page was requested until it finished loading.
Server IP	Displays the IP address of the server on which the page was located.

GUI Element	Description
Server Name	Displays the name of the server on which the page was located.
Server Threshold	Displays the server time threshold configured for the page in End User Management Administration.
Server Time	Displays the amount of time, in seconds, that it took the server to process the request for the page.
Start Time	Displays the date and time the page was hit.
Stopped	Displays whether or not the page downloading was stopped by the end-user.
URL	Displays the URL of the page.

Events Pane

The Events pane includes the following elements (listed alphabetically):

GUI Element	Description
Description	Displays the event description
Name	Displays the event name

URL Parameters Pane

Description	<p>Displays the names and values of any parameters that were included in the page's URL, which is displayed in the General pane.</p> <p>For example, for a page with the URL: http://www.myDomain.com:8080/application1/page3.jsp?firstName=John&lastName=Doe&vehicle=bike the following parameters are displayed in the URL Parameters pane:</p> <ul style="list-style-type: none"> ➤ firstName: John ➤ lastName: Doe ➤ vehicle: bike
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Page Over Time Report

Description	<p>Displays details of the availability, performance, hits availability, and breakdown for the selected Web page over the course of time.</p> <p>The report can be viewed as a graph (see page 454), or as a table (see page 458), by clicking on the appropriate tab.</p> <p>To access:</p> <ul style="list-style-type: none"> ➤ Click the Page Over Time button for the page in the Page Summary Report (see page 461). ➤ Click the Page Over Time button for the page in the End Users by Page Report (see page 411).
Important Information	<p>When accessing the Page Over Time report from the End Users by Page Report, the report is filtered for the end-user group for which you accessed the report.</p>

Report Settings

The area includes the following elements (listed alphabetically):

GUI Element	Description
<Common report settings>	For details, see “Understanding Common Report Elements” in <i>Reference Information</i> .
Active Filters	<p>Indicates which active filters have been set.</p> <p>To set active filters, click the Active Filters link. For details, see “Active Filters Dialog Box” on page 378.</p> <p>Note: The active filters tabs enabled for this report are:</p> <ul style="list-style-type: none"> ➤ Events ➤ Pages ➤ End User Groups ➤ User Properties ➤ Servers
Applications	<p>Indicates the name of the selected application for which data is included in the report. If more than one application is selected, the number of selected applications is displayed.</p> <p>To select applications, click the Applications link. For details, see “Applications Dialog Box” on page 394.</p>
Clear All	Click to clear any active filters that have been previously set.

View as Graph

Description	When viewed as a graph, the Page Over Time report includes a graph each for availability (see page 455), hits availability (see page 456), performance (see page 456), and breakdown (see page 457).
Important Information	In each graph, you can drill down to a higher time resolution, by clicking on a bar or data point. For example, if you click on a bar that displays data for a day, the time resolution changes to hours for the specific day.

Page Availability Graph

Important Information	If active filters are used to add more than one page to the report, the displayed data is the average of all the included pages.
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The Page Availability graph includes the following elements (listed alphabetically):

GUI Element	Description
<Horizontal Availability Threshold line>	Displays the page availability threshold you configured in End User Management Administration. Note: If active filters are used to add more than one page to the report, this line is not displayed.
<Legend>	Describes the color coding used in the bars.
<Line connecting data points>	Displays the percentage of available hits of the page at each point over the course of the defined time period. Tooltip: Hold the cursor over a data point on the graph to display the number and percentage of available and unavailable hits.
Availability <y-axis>	Page availability percentage units.
Time <x-axis>	Time division units for the time range you defined when generating the report.

Page Hits Availability Graph

The Page Hits Availability graph includes the following elements (listed alphabetically):

GUI Element	Description
<Bars>	Each bar represents the number of page hits over the course of the defined time period. The bars are divided into the number of available hits (colored green), and the number of unavailable hits (colored red). Tooltip: The number and percentage of available and unavailable hits.
<Legend>	Describes the color coding used in the bars.
Hits <y-axis>	Page time units in seconds.
Time <x-axis>	Time division units for the time range you defined when generating the report.

Page Performance Graph

Important Information	If active filters are used to add more than one page to the report, the displayed data is the average of all the included pages.
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The Page Performance graph includes the following elements (listed alphabetically):

GUI Element	Description
<Horizontal Total Time Threshold line>	Displays the page time threshold you configured in End User Management Administration. Note: If active filters are used to add more than one page to the report, this line is not displayed.
<Legend>	Describes the color coding used by the graph lines.

GUI Element	Description
<Lines connecting data points>	<p>The three lines on the graph represent:</p> <ul style="list-style-type: none"> ▶ the average page time ▶ the maximum page time ▶ the minimum page time <p>over the course of the defined time period.</p> <p>Tooltip: Hold the cursor over the a data point on the graph to display the average time, maximum time, minimum time, and standard deviation for the page at a given time.</p>
Time (secs) <y-axis>	Page time units in seconds.
Time <x-axis>	Time division units for the time range you defined when generating the report.

Page Breakdown Graph

The Page Breakdown graph includes the following elements (listed alphabetically):

GUI Element	Description
<Bars>	<p>Each bar represents the total page time over the course of the defined time period, and is divided into four segments showing server, network, client time, and server time to first buffer for the page.</p> <p>Hold the cursor over a bar to display a tooltip showing the duration of each segment in the bar, as well as the average page time.</p>
<Horizontal Server Time Threshold line>	Displays the server time threshold of the page as configured in End User Management Administration.
<Horizontal Total Time Threshold line>	Displays the total time threshold of the page, as configured in End User Management Administration.
<Legend>	Describes the color coding used by the graph lines.

GUI Element	Description
Time (secs) <y-axis>	Time units in seconds.
Time <x-axis>	Time division units for the time range you defined when generating the report.

View as Table

Description	When viewed as a table, the Page Over Time report includes a table each for availability (see page 458), hits availability (see page 458), performance (see page 459), and breakdown (see page 460).
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Page Availability Table

The Page Availability table includes the following elements (listed alphabetically):

GUI Element	Description
Availability	Displays as a percentage, the number of successful hits, out of the total number of hits for the page.
Time	Displays the applicable date and time for the data displayed.

Page Hits Availability Table

The Page Hits Availability table includes the following elements (listed alphabetically):

GUI Element	Description
Available Hits	Displays the number of successful hits for the page.
Hits	Displays the total number of hits for the page.
Time	Displays the applicable date and time for the data displayed.
Unavailable Hits	Displays the number of unsuccessful hits for the page.

Page Performance Table

The Page Performance table includes the following elements (listed alphabetically):

GUI Element	Description
Average Page Time	Displays the average page download time.
Maximum Page Time	Displays the longest page download time.
Minimum Page Time	Displays the shortest page download time.
Standard Deviation	Displays the standard deviation of the page download time.
Time	Displays the applicable date and time for the data displayed.

Page Breakdown Table

The Page Breakdown table includes the following elements (listed alphabetically):

GUI Element	Description
Client Time	Displays the average client processing time during the page download.
Network Time	Displays the average network time during the page download.
Page Time	Displays the average page download time.
Server Time	Displays the average server processing time during the page download.
Server Time to First Buffer	Displays the amount of time that passes from the receipt of ACK of the initial HTTP request (usually GET) until the first buffer is successfully received back from the Web server. Note: The server time to first buffer measurement is a good indicator of Web server delay.
Time	Displays the applicable date and time for the data displayed.

Page Summary Report

<p>Description</p>	<p>Displays data for specific Web pages that were configured for Real User Monitor in End User Management Administration. For information on configuring Web pages to be monitored, see “New/Edit Page” on page 339.</p> <p>The Page Summary report contains the following tables, viewed by clicking the appropriate tab:</p> <ul style="list-style-type: none"> ➤ General (see page 463) ➤ Availability (see page 467) ➤ Performance (see page 469) <p>To access:</p> <ul style="list-style-type: none"> ➤ Select Applications > End User Management > Real User > Page Summary ➤ Click the Page Summary button for a selected end-user group in the End User Summary Report (see page 407).
<p>Important Information</p>	<p>If you select Week, Month, Quarter, Year, Past Week, Past Month, Past Quarter, or Past Year from the View box, the query is rounded to full days, 12 AM to 12 AM, based on the time zone set for the database (set by the database administrator in Platform Administration). The query is based only on aggregated data—not raw data—and can therefore be processed more quickly. The data is displayed according to the time zone set for the user, which is indicated on the right-hand side of the report title bar.</p>

Report Settings





The area includes the following elements (listed alphabetically):


GUI Element	Description
<Common report settings>	For details, see “Understanding Common Report Elements” in <i>Reference Information</i> .
Active Filters	<p>Indicates which active filters have been set.</p> <p>To set active filters, click the Active Filters link. For details, see “Active Filters Dialog Box” on page 378.</p> <p>Note: The active filters tabs enabled for this report are:</p> <ul style="list-style-type: none"> ➤ Events ➤ Pages ➤ End User Groups ➤ User Properties ➤ Servers
Applications	<p>Indicates the name of the selected application for which data is included in the report. If more than one application is selected, the number of selected applications is displayed.</p> <p>To select applications, click the Applications link. For details, see “Applications Dialog Box” on page 394.</p>
Clear All	Click to clear any active filters that have been previously set.

General Table

Description	Displays general data related to each configured Web page that was monitored.
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The General table includes the following elements (listed alphabetically):

GUI Element	Description
	<p>End Users by Page button. Click to open the ENd Users by Page report, where you can view data for each end-user group that accessed a specific page.</p> <p>For details on the End Users by Page report, see “End Users by Page Report” on page 411.</p>
	<p>Page Over Time button. Click to open the Page Over Time report, where you can view data over a period of time for a page.</p> <p>For details on the Page Over Time report, see “Page Over Time Report” on page 453.</p>
	<p>Event Summary button. Click to open the Event Summary report, where you can view event summary data.</p> <p>For details on the Event Summary report, see “Event Summary Report” on page 438.</p>
	<p>Servers by Page Summary button. Click to open the Servers by Page Summary report, where you can view a summary of the servers used in accessing a page.</p> <p>For details on the Servers by Page Summary report, see “Servers by Page Summary Report” on page 483.</p>

GUI Element	Description
	<p>View Diagnostics Data button. Click to drill down to the HP Diagnostics Server Requests view for a specific page.</p> <p>For details on working with the HP Diagnostics Server Requests view, see the <i>HP Diagnostics User's Guide</i>.</p> <p>For notes and limitations on viewing HP Diagnostics data, see “Troubleshooting and Limitations” on page 299.</p> <p>Note: This option is enabled only if HP Diagnostics has been registered and enabled on your HP Business Availability Center system.</p>
Availability	<p>Displays the percentage of requests for which each page was available. This column is color-coded, based on the page's availability in relation to the page availability threshold defined in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical <p>Tooltip: The page availability threshold you defined in End User Management Administration.</p> <p>Note: If a page is unavailable, its data is not included in the page performance calculations.</p>
Hits	<p>Displays the total number of requests that each page received.</p> <p>Note: The sum of all the hits to each page is displayed in the summary row.</p>
Informational Events	<p>Displays the number of informational events that occurred on the page, based on the informational events you defined for the page, or application, in End User Management Administration.</p> <p>Note: The sum of all the informational events that occurred in each page is displayed in the summary row.</p>





GUI Element	Description
Number of Components	<p>Displays the average number of page components that were downloaded for each page.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ The average number of components may not always be an integer. This is caused by caching, which means that the components of a page may not all be downloaded each time the page is hit. ▶ The sum of all the average number of components that were downloaded for each page is displayed in the summary row.
Page Name	<p>Displays the names you assigned the Web pages in End User Management Administration.</p> <p>Tooltip: The full name and URL of the page.</p>
Page Size	<p>Displays the average downloaded size, in kilobytes, of each page.</p> <p>Note: The average page size of all pages is displayed in the summary row.</p>


GUI Element	Description
<p>Page Time</p>	<p>Displays the average amount of time, in seconds, it took for each page to download. This column is color-coded, based on the page's download time in relation to the page time threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical <p>Tooltip: The page time threshold you defined in End User Management Administration, as well as the minimum, maximum, and standard deviation of the page time values.</p> <p>Note: The average page time of all pages is displayed in the summary row.</p>
<p>Server Time</p>	<p>Displays the average amount of time, in seconds, that it took the server to process the requests for each page. This column is color-coded, based on the page's server time in relation to the server time threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical <p>Tooltip: The server time threshold you defined in End User Management Administration, as well as the minimum, maximum, and standard deviation of the server time values.</p> <p>Note: The average server time of all pages is displayed in the summary row.</p>

Availability Table

Description	Displays page availability data for each configured Web page that was monitored.
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The Availability table includes the following elements (listed alphabetically):

GUI Element	Description
	<p>End Users by Page button. Click to open the ENd Users by Page report, where you can view data for each end-user group that accessed a specific page.</p> <p>For details on the End Users by Page report, see “End Users by Page Report” on page 411.</p>
	<p>Page Over Time button. Click to open the Page Over Time report, where you can view data over a period of time for a page.</p> <p>For details on the Page Over Time report, see “Page Over Time Report” on page 453.</p>
	<p>Event Summary button. Click to open the Event Summary report, where you can view event summary data.</p> <p>For details on the Event Summary report, see “Event Summary Report” on page 438.</p>
	<p>Servers by Page Summary button. Click to open the Servers by Page Summary report, where you can view a summary of the servers used in accessing a page.</p> <p>For details on the Servers by Page Summary report, see “Servers by Page Summary Report” on page 483.</p>






GUI Element	Description
	<p>View Diagnostics Data button. Click to drill down to the HP Diagnostics Server Requests view for a specific page.</p> <p>For details on working with the HP Diagnostics Server Requests view, see the <i>HP Diagnostics User's Guide</i>.</p> <p>For notes and limitations on viewing HP Diagnostics data, see “Troubleshooting and Limitations” on page 299.</p> <p>Note: This option is enabled only if HP Diagnostics has been registered and enabled on your HP Business Availability Center system.</p>
Application Errors	<p>Displays the number of application errors encountered by the page, based on the application errors you defined for the page, or the application, in End User Management Administration.</p>
Availability	<p>Displays the percentage of requests for which each page was available. This column is color-coded, based on the page's availability in relation to the page availability threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical <p>Tooltip: The page availability threshold you defined in End User Management Administration.</p> <p>Note: If a page is unavailable, its data is not included in the page performance calculations.</p>
Hits	<p>Displays the total number of requests that each page received.</p>
HTTP Errors	<p>Displays the number of HTTP errors encountered by the page, based on the HTTP errors you defined for the Real User Monitor engine in End User Management Administration.</p>

GUI Element	Description
Page Name	Displays the names you assigned the Web pages in End User Management Administration. Tooltip: The full name and URL of the page.
Stopped Pages	Displays the number of hits for which each page was unavailable because page downloading was stopped.
Unavailable Hits	Displays the number of hits for which each page was unavailable.

Performance Table

Description	Displays page performance data for each configured Web page that was monitored.
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The Performance table includes the following elements (listed alphabetically):

GUI Element	Description
	<p>End Users by Page button. Click to open the End Users by Page report, where you can view data for each end-user group that accessed a specific page.</p> <p>For details on the End Users by Page report, see “End Users by Page Report” on page 411.</p>
	<p>Page Over Time button. Click to open the Page Over Time report, where you can view data over a period of time for a page.</p> <p>For details on the Page Over Time report, see “Page Over Time Report” on page 453.</p>
	<p>Event Summary button. Click to open the Event Summary report, where you can view event summary data.</p> <p>For details on the Event Summary report, see “Event Summary Report” on page 438.</p>
	<p>Servers by Page Summary button. Click to open the Servers by Page Summary report, where you can view a summary of the servers used in accessing a page.</p> <p>For details on the Servers by Page Summary report, see “Servers by Page Summary Report” on page 483.</p>
	<p>View Diagnostics Data button. Click to drill down to the HP Diagnostics Server Requests view for a specific page.</p> <p>For details on working with the HP Diagnostics Server Requests view, see the <i>HP Diagnostics User's Guide</i>.</p> <p>For notes and limitations on viewing HP Diagnostics data, see “Troubleshooting and Limitations” on page 299.</p> <p>Note: This option is enabled only if HP Diagnostics has been registered and enabled on your HP Business Availability Center system.</p>

GUI Element	Description
Client Time	<p>Displays the average amount of time, in seconds, that each page's requests were delayed on the client machine.</p> <p>Tooltip: Minimum client time, maximum client time, and standard deviation.</p>
Hits	<p>Displays the total number of requests that each page received.</p>
Max Page Time	<p>Displays the longest download time for each page.</p>
Max Server Time	<p>Displays the longest server processing time for each page.</p>
Network Time	<p>Displays the average amount of time, in seconds, that each page's requests were delayed on the network.</p> <p>Tooltip: Minimum network time, maximum network time, and standard deviation.</p>
Page Name	<p>Displays the names you assigned the Web pages in End User Management Administration.</p> <p>Tooltip: The full name and URL of the page.</p>
Page Time	<p>Displays the average amount of time, in seconds, it took for each page to download. This column is color-coded, based on the page's download time in relation to the page time threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ▶ Green. OK ▶ Red. Critical
Page Time of Slow Hits	<p>Displays the average amount of time, in seconds, that it took to download each page's slow page requests.</p>

GUI Element	Description
<p>Server Time</p>	<p>Displays the average amount of time, in seconds, that it took the server to process the requests for each page. This column is color-coded, based on the page's server time in relation to the server time threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical <p>Tooltip: The server time threshold you defined in End User Management Administration, as well as the minimum server time, maximum server time, and standard deviation.</p>
<p>Server Time of Slow Server Hits</p>	<p>Displays the average amount of time, in seconds, that it took the server to process the hits whose server time exceeded the configured server time threshold.</p>
<p>Server Time to First Buffer</p>	<p>Displays the amount of time that passes from the receipt of ACK of the initial HTTP request (usually GET) until the first buffer is successfully received back from the Web server.</p> <p>Note: The server time to first buffer measurement is a good indicator of Web server delay.</p>
<p>Slow Hits</p>	<p>Displays, for each page, the total number of hits whose page time exceeded the configured page time threshold.</p>
<p>Slow Server Hits</p>	<p>Displays, for each page, the total number of hits whose server time exceeded the configured server time threshold.</p>

Pages by Server Summary Report

Description	<p>Displays a table showing each page hit by the server for which you are viewing data.</p> <p>To access: Click the Pages by Server Summary button for the server in the Server Summary Report (see page 479).</p>
Important Information	<ul style="list-style-type: none"> ▶ The report uses the same time range as that selected for the main Server Summary report, but will not exceed 24 hours. If the time range selected is longer than 24 hours, the last 24 hour period of the time range is used. ▶ The report uses raw Real User Monitor data.

Report Settings

The area includes the following elements (listed alphabetically):

GUI Element	Description
< Common report settings >	For details, see “Understanding Common Report Elements” in <i>Reference Information</i> .
Active Filters	<p>Indicates which active filters have been set.</p> <p>To set active filters, click the Active Filters link. For details, see “Active Filters Dialog Box” on page 378.</p> <p>Note: The active filters tabs enabled for this report are:</p> <ul style="list-style-type: none"> ▶ Events ▶ Pages ▶ End User Groups ▶ User Properties ▶ Servers

GUI Element	Description
Applications	Indicates the name of the selected application for which data is included in the report. If more than one application is selected, the number of selected applications is displayed. To select applications, click the Applications link. For details, see “Applications Dialog Box” on page 394.
Clear All	Click to clear any active filters that have been previously set.

Report Content

The Pages by Server Summary report includes the following elements (listed alphabetically):

GUI Element	Description
Availability	Displays the percentage of requests for which each page was available. The page availability may be different from the server availability in the main Server Summary report as page and server availability are not based on the same criteria.
Hits	Displays the total number of requests that the page received.
Page	Displays the page name configured for the page in End User Management Administration.
Page Size	Displays the size of the page in Kilobytes.
Page Threshold	Displays the page time threshold configured for the page in End User Management Administration.
Page Time	Displays the average amount of time, in seconds, it took for the page to download. This column is color-coded, based on the page's download time in relation to the page time threshold you defined in End User Management Administration. <ul style="list-style-type: none"> ▶ Green. OK ▶ Red. Critical
Server Time	Displays the average amount of time, in seconds, that it took the server to process the requests for the page. This column is color-coded, based on the page's server time in relation to the server time threshold you defined in End User Management Administration. <ul style="list-style-type: none"> ▶ Green. OK ▶ Red. Critical
Server Time Slow Hits	Displays the average server time, in seconds, for the page's slow hits.

GUI Element	Description
Server Time Threshold	Displays the server time threshold configured for the page in End User Management Administration.
Slow Hits	Displays the total number of hits whose page time exceeded the configured page time threshold.

Server Over Time Report

Description	<p>Displays a graph and table of the server's page hits and availability over the course of time.</p> <p>The report includes both a graph (see page 477) and a table (see page 478).</p> <p>To access: Click the Server Over Time button in the Server Summary Report (see page 479).</p>
Important Information	Data for servers is aggregated by the Real User Monitor engine for each five minute period. This means that you will not see a real picture of such data if you view this report using a time breakdown of less than five minutes.

Report Settings

The area includes the following elements (listed alphabetically):

GUI Element	Description
<Common report settings>	For details, see "Understanding Common Report Elements" in <i>Reference Information</i> .
Active Filters	<p>Indicates which active filters have been set.</p> <p>To set active filters, click the Active Filters link. For details, see "Active Filters Dialog Box" on page 378.</p> <p>Note: The active filters tabs enabled for this report are:</p> <ul style="list-style-type: none"> ▶ Servers

GUI Element	Description
Applications	Indicates the name of the selected application for which data is included in the report. If more than one application is selected, the number of selected applications is displayed. To select applications, click the Applications link. For details, see “Applications Dialog Box” on page 394.
Clear All	Click to clear any active filters that have been previously set.

Server Over Time Graph

The Server Over Time graph includes the following elements (listed alphabetically):

GUI Element	Description
<Bars>	Indicate the server's availability at each point over the course of the defined time period. Tooltip: The server's percentage availability at a given time.
<Legend>	Describes the color coding used in the graph.
<Line connecting data points>	Indicates how many page hits were received by the server at each point over the course of the defined time period. Tooltip: Hold the cursor over a data point on the graph to display the number of page hits received by the server at a given time.
<X-axis>	Displays the time division units for the time range that you defined when generating the report.
Availability <left y-axis>	Displays server availability percentage units.
Availability Threshold	Displays the server availability threshold that you configured in End User Management Administration.
Hits <right y-axis>	Displays server page hit units.

Server Over Time Table

The Server Over Time table includes the following elements (listed alphabetically):

GUI Element	Description
Availability	Displays the server's availability at each point over the course of the defined time period.
Hits	Displays the number of page hits received by the server at each point over the course of the defined time period.
Time	Displays the time division units for the time range that you defined when generating the report.

Server Summary Report

Description	<p>Displays data for the servers that are monitored by the Real User Monitor probe.</p> <p>To access: Select Applications > End User Management > Real User > Server Summary</p>
Important Information	<ul style="list-style-type: none"> ▶ You can assign a specific name to a monitored server, by configuring Real User Monitor engine settings in Admin > End User Management. ▶ If you select Week, Month, Quarter, Year, Past Week, Past Month, Past Quarter, or Past Year from the View box, the query is rounded to full days, 12 AM to 12 AM, based on the time zone set for the database (set by the database administrator in Platform Administration). The query is based only on aggregated data—not raw data—and can therefore be processed more quickly. The data is displayed according to the time zone set for the user, which is indicated on the right-hand side of the report title bar. ▶ Data for servers is aggregated by the Real User Monitor engine for each five minute period. This means that you will not see a real picture of such data if you view this report using a time breakdown of less than five minutes.



Report Settings

The area includes the following elements (listed alphabetically):

GUI Element	Description
<Common report settings>	For details, see “Understanding Common Report Elements” in <i>Reference Information</i> .
Active Filters	<p>Indicates which active filters have been set.</p> <p>To set active filters, click the Active Filters link. For details, see “Active Filters Dialog Box” on page 378.</p> <p>Note: The active filters tabs enabled for this report are:</p> <ul style="list-style-type: none"> ▶ Servers
Applications	<p>Indicates the name of the selected application for which data is included in the report. If more than one application is selected, the number of selected applications is displayed.</p> <p>To select applications, click the Applications link. For details, see “Applications Dialog Box” on page 394.</p>
Clear All	Click to clear any active filters that have been previously set.

Report Content

The Server Summary report includes the following elements (listed alphabetically):

GUI Element	Description
	<p>Server Over Time button. Click to open the Server Over Time report, where you can view data over a period of time for a server.</p> <p>For details on the Server Over Time report, see “Server Over Time Report” on page 476.</p>
	<p>Pages by Server Summary Report button. Click to open the Page by Server Summary report, where you can view a summary of the pages accessed on each server.</p> <p>For details on the Pages by Server Summary report, see “Pages by Server Summary Report” on page 473.</p>
<p>Component Hits</p>	<p>Displays the total number of component requests received by each server.</p> <p>Note: The sum of all the component hits to each server is displayed in the summary row.</p>
<p>Components Causing Server Errors</p>	<p>Displays, for each server, the total number of component requests that encountered internal server problems.</p> <p>Note: The sum of all the components causing server errors for each server is displayed in the summary row.</p>
<p>Hits</p>	<p>Displays the total number of page requests received by each server.</p> <p>Note: The sum of all the hits to each server is displayed in the summary row.</p>
<p>HTTP Traffic</p>	<p>Displays the number of megabytes transmitted to and from each server via HTTP.</p> <p>Note: The sum of all the sent and received HTTP megabytes for each server is displayed in the summary row.</p>

GUI Element	Description
HTTPS Traffic	<p>Displays the number of megabytes transmitted to and from each server via HTTPS.</p> <p>Note: The sum of all the sent and received HTTPS megabytes for each server is displayed in the summary row.</p>
IP Address	<p>Displays the IP address of each server.</p>
Server Availability	<p>Displays the percentage of requests for which each server was available. This column is color-coded, based on the server's availability in relation to the server availability threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical <p>Note: The average availability of all servers (that is, the total number of successful hits for all servers divided by the total number of hits for all servers) is displayed in the summary row.</p>
Server Name	<p>Displays the names you assigned the monitored servers in End User Management Administration.</p>

Servers by Page Summary Report

Description	<p>Displays a table showing each server used in accessing the page for which you are viewing data.</p> <p>To access: Click the Servers by Page Summary button for the page in the Page Summary Report (see page 461).</p>
Important Information	<ul style="list-style-type: none"> ▶ The report uses the same time range as that selected for the main Page Summary report, but will not exceed 24 hours. If the time range selected is longer than 24 hours, the last 24 hour period of the time range is used. ▶ The report uses raw Real User Monitor data.

Report Settings

The area includes the following elements (listed alphabetically):

GUI Element	Description
<Common report settings>	For details, see “Understanding Common Report Elements” in <i>Reference Information</i> .
Active Filters	<p>Indicates which active filters have been set.</p> <p>To set active filters, click the Active Filters link. For details, see “Active Filters Dialog Box” on page 378.</p> <p>Note: The active filters tabs enabled for this report are:</p> <ul style="list-style-type: none"> ▶ Events ▶ Pages ▶ End User Groups ▶ User Properties ▶ Servers

GUI Element	Description
Applications	<p>Indicates the name of the selected application for which data is included in the report. If more than one application is selected, the number of selected applications is displayed.</p> <p>To select applications, click the Applications link. For details, see “Applications Dialog Box” on page 394.</p>
Clear All	<p>Click to clear any active filters that have been previously set.</p>

Report Content

The Servers by Page Summary report includes the following elements (listed alphabetically):

GUI Element	Description
Hits	Displays the total number of requests that the page received.
Page Threshold	Displays the page time threshold configured for the page in End User Management Administration.
Page Time	Displays the average amount of time, in seconds, it took for the page to download. This column is color-coded, based on the page's download time in relation to the page time threshold you defined in End User Management Administration. <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical
Server IP	Displays the IP address of the server.
Server Name	Displays the name of the server as defined in End User Management Administration.
Server Time	Displays the average amount of time, in seconds, that it took the server to process the requests for the page. This column is color-coded, based on the page's server time in relation to the server time threshold you defined in End User Management Administration. <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical
Server Time to First Buffer	Displays the amount of time that passes from the receipt of ACK of the initial HTTP request (usually GET) until the first buffer is successfully received back from the Web server. Note: The server time to first buffer measurement is a good indicator of Web server delay.
Server Time Slow Hits	Displays the average server time, in seconds, for the page's slow hits.

GUI Element	Description
Server Time Threshold	Displays the server time threshold configured for the page in End User Management Administration.
Slow Hits	Displays the total number of hits whose page time exceeded the configured page time threshold.

Session Analyzer Report

Description	<p>Displays session data for specific applications that were configured for Real User Monitor in End User Management Administration. Sessions in applications that have not been configured for monitoring are also reported as part of a default entity for other applications, called <engine name>'s other applications. For example, for a configured Real User Monitor engine called myengine, the default entity for non-monitored applications is myengine's other applications.</p> <p>To access: Select Applications > End User Management > Real User > Session Analyzer</p>
Important Information	<p>For more information on viewing session details, see "Viewing Session Details in the Session Analyzer Report" on page 289.</p>



Report Settings

The area includes the following elements (listed alphabetically):

GUI Element	Description
<Common report settings>	For details, see “Understanding Common Report Elements” in <i>Reference Information</i> .
Active Filters	<p>Indicates which active filters have been set.</p> <p>To set active filters, click the Active Filters link. For details, see “Active Filters Dialog Box” on page 378.</p> <p>Note: The active filters tabs enabled for this report are:</p> <ul style="list-style-type: none"> ▶ Events ▶ Pages ▶ End User Groups ▶ Session Properties ▶ User Properties ▶ Servers
Applications	<p>Indicates the name of the selected application for which data is included in the report. If more than one application is selected, the number of selected applications is displayed.</p> <p>To select applications, click the Applications link. For details, see “Applications Dialog Box” on page 394.</p>
Clear All	Click to clear any active filters that have been previously set.

Report Content

The Session Analyzer report includes the following elements (listed alphabetically):

GUI Element	Description
	<p>View Deep Transaction Tracing Data button. Click to view TransactionVision's Transaction Tracking Report, where you can see detailed information of the session at component level.</p> <p>Note: This option is available only if you have deployed Bristol TransactionVision's Deep Transaction Tracing package in HP Business Availability Center.</p>
	<p>View Session Details button. Click to open the Session Details page, where you can view property, event, and page data for the session.</p> <p>For details on the Session Details page, see "Session Details Page" on page 490.</p>
Active	Displays whether the session is still active or not.
Application Errors	<p>Displays the number of application errors encountered during the session, based on the application error events you defined for the application in End User Management Administration.</p> <p>If the number of application errors is greater than 0 it is displayed in red.</p>
Duration	Displays the length of time that the session was active.
End User	<p>Displays the name of the end-user who initiated the session, or an IP address or computer name if the end-user name is not found.</p> <p>Tooltip: The user's name, IP address, and host machine name.</p>

GUI Element	Description
End User Group	<p>Displays the end-user group to which the end-user who initiated the session belongs, as configured in End User Management Administration.</p> <p>Tooltip: The group's name, IP range, and location.</p>
Events	<p>Displays the number of application events encountered during the session, based on the a events you defined for the application in End User Management Administration.</p>
HTTP Errors	<p>Displays the number of HTTP errors encountered during the session, based on the global HTTP error events you defined in End User Management Administration.</p> <p>If the number of HTTP errors is greater than 0, it is displayed in red.</p>
Page Hits	<p>Displays the total number of page hits generated during each session.</p>
Slow Pages	<p>Displays, for each session, the total number of pages whose page time exceeded its configured threshold.</p> <p>If the number of slow pages is greater than 0, it is displayed in red.</p>
Start Time	<p>Displays the date and time the session was started.</p>

Session Details Page

<p>Description</p>	<p>Displays details of a session and includes panes showing data for Properties (see page 491), General Events (see page 492), and Pages (see page 493).</p> <p>To access: Click the View Session Details button in the Session Analyzer Report (see page 486).</p>
<p>Important Information</p>	<ul style="list-style-type: none"> ▶ When you view session details, the report is regenerated and contains the most current data for the selected session. This means that if the session was still open when the Session Analyzer report was generated, the data included in the Session Detail page will be more up to date, and may differ from that included in the Session Analyzer report for the same session. ▶ When viewing session details, all the pages that are included in all monitored application sessions that started on the same day as the application session for which you are viewing data, and that are part of the entire application server session, are displayed. For more details, see “Viewing Session Details in the Session Analyzer Report” on page 289. ▶ Events displayed when viewing session details are the events that occurred only on the pages configured in End User Management Administration as being part of the application. ▶ When clicking on the breadcrumb to return to the Session Analyzer report, the report is not regenerated and the original Session Analyzer report is redisplayed.

Properties

The Properties pane includes the following elements (listed alphabetically):

GUI Element	Description
<Session Property Name>	The names of all the session properties configured for the application are listed.
<Session Property Value>	The value of each of the listed session properties is displayed. Note: There are five static place holders for session properties in the profile database, whether you actually define session properties or not. If you change the definition of an existing session property, the values for the previous definition still exist and appear as values for the new definition.
Arrived From	Displays the page from which the end-user reached the session.
Browser	Displays the browser used by the end-user to initiate the session.
Client IP	Displays the IP address of the end-user who initiated the session.
Computer Name	Displays the host name of the machine of the end- user who initiated the session.
Duration	Displays the total time that the session was open.
End User Group	Displays the end-user group to which the end-user who initiated the session belongs, as configured by you in End User Management Administration.
Location	Displays the name of the location of the end-user who initiated the session.
Operating System	Displays the operating system of the machine on which the end-user initiated the session.
Overall Traffic	Displays the total number of kilobytes sent from and received by the session.

GUI Element	Description
Server IP	Displays the IP address of the server (or load balancer) reached by the end-user.
Start Time	Displays the date and time the session was started.
User Name	Displays the name of the end-user who initiated the session.





General Events


The General Events pane includes the following elements (listed alphabetically):

GUI Element	Description
Description	Displays the event description
Name	Displays the event name

Pages

The Pages pane includes the following elements (listed alphabetically):

GUI Element	Description
	<p>View Page Details button. Click to open the Page Details page, where you can view the properties, events, and URL parameters of the page.</p> <p>For details on the Page Details page, see “Page Details Page” on page 451.</p>
	<p>View Deep Transaction Tracing Data button. Click to view TransactionVision’s Transaction Tracking Report, where you can see detailed information of the page at component level.</p> <p>Note: This option is available only if you have deployed Bristol TransactionVision’s Deep Transaction Tracing package in HP Business Availability Center.</p>
	<p>View Snapshot button. Click to open the Snapshot Viewer page, where you can view a snapshot of the page.</p> <p>For details on the Snapshot Viewer page, see “Snapshot Viewer Page” on page 500.</p> <p>Note: If no snapshot exists for the page, the View Snapshot button is disabled.</p>
	<p>Define Page button. Click to open the Define Page dialog box, where you add an undefined page to the list of configured pages in End User Management Administration.</p> <p>For details on the Define Page dialog box, see “Define Page Dialog Box” on page 400.</p>

GUI Element	Description
	<p>View Diagnostics Data button. Click to drill down to the HP Diagnostics Server Requests view for a specific page.</p> <p>For details on working with the HP Diagnostics Server Requests view, see the <i>HP Diagnostics User's Guide</i>.</p> <p>Note: This option is enabled only if HP Diagnostics has been registered and enabled on your HP Business Availability Center system.</p>
Application	Displays the application session in which the page was hit. This field is highlighted for the selected application session.
Events	Displays the name of events that occurred on the page, based on the events you defined for the page in End User Management Administration.
Page	<p>Displays the name of the page that was hit, as defined by you in End User Management Administration, or its URL if no name is defined.</p> <p>Tooltip: The URL of the page.</p>
Page Time	Displays the amount of time, in seconds, it took for the page to download.
Session Replay	<p>Click the Session Replay button to open the Session Viewer page, where you can view a session flow page by page.</p> <p>For details on the Session Viewer page, see “Session Viewer Page” on page 495.</p>
Start Time	Displays the date and time the page was hit.

Session Viewer Page








Description	Enables you to view a session flow page by page. To access: Click the Session Replay button in the “Session Details Page” on page 490.
Important Information	<ul style="list-style-type: none"> ▶ You can view snapshots of pages if the Real User Monitor engine has been configured to take snapshots of pages on errors and events, and the application has been configured to enable snapshots. You configure the Real User Monitor engine and applications in End User Management Administration. For details, see “Real User Monitor Administration User Interface” on page 303. ▶ Snapshots are opened as an Applet, which requires Sun JRE version 1.5. If this version is not installed on your machine, you are prompted to install it. ▶ If you are using Sun JRE version 1.5.0_06 and are working with basic authentication, you are prompted for the basic authentication credentials (user name and password) when the Applet is opened. For further details on this issue, refer to the Sun Developer Network Web site (http://forum.java.sun.com/thread.jspa?threadID=701390&messageID=4070035).

The Session Viewer page includes the following panes:

- ▶ “Upper Left Pane” on page 496
- ▶ “Lower Left Pane” on page 497
- ▶ “Right Pane” on page 499

Upper Left Pane

The Upper Left pane includes the following elements (listed alphabetically):

GUI Element	Description
	Go to Next Event button. Click to go to the next item in the tree that includes an event.
	Download button. Click to download all the snapshots included in a session to a zip file. The Save dialog box opens, where you select the path and file name you want and click Save . The saved zip file includes a Java applet for viewing the saved information. Note: The Download button is located directly above the Upper Left pane.
	Session Without Events icon. When displayed preceding the session name in the hierarchical tree, indicates that the session does not include any events.
	Session With Events icon. When displayed preceding the session name in the hierarchical tree, indicates that the session includes events.
	Page With Events icon. When displayed preceding a page or component name in the hierarchical tree, indicates that the page or component includes events.
	Page With Snapshot icon. When displayed preceding a page or component name in the hierarchical tree, indicates that there is a snapshot of the page or component.
	Page With Events and Snapshot icon. When displayed preceding a page or component name in the hierarchical tree, indicates that page or component includes events and that there is a snapshot of the page or component.
<Hierarchical tree>	The Upper Left pane displays a hierarchical tree of the pages included in the session, and their components. There is also an entry for the session details. Click on the item in the tree you want to view.

Lower Left Pane

Description	The Lower Left pane displays details of the selected page or component, or details of the session if Session Details is selected in the Upper Left pane.
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Page Details

When displaying page or component details, the Lower Left pane includes the following elements (listed alphabetically):

GUI Element	Description
Client Time	Displays the amount of time, in seconds, that the page was active on the client machine.
HTTP Method	Displays the HTTP method used to access the page.
Network Time	Displays the amount of time, in seconds, that the page was active on the network.
Number of Components	Displays the number of components included in the page.
Page Size	Displays the downloaded size, in kilobytes, of the page.
Page Time	Displays the total amount of time, in seconds, from when the page was requested until it finished loading.
Server IP	Displays the IP address of the server on which the page was located.
Server Name	Displays the name of the server on which the page was located.
Server Time	Displays the amount of time, in seconds, that it took the server to process the request for the page.
URL	Displays the URL of the page.

Session Details

When displaying session details, the Lower Left pane includes the following elements (listed alphabetically):

GUI Element	Description
Arrived From	Displays the page from which the end-user reached the session.
Browser	Displays the browser used by the end-user to initiate the session.
Client IP	Displays the IP address of the end-user who initiated the session.
Computer Name	Displays the host name of the machine of the end-user who initiated the session.
Duration	Displays the total time that the session was open.
End User Group	Displays the end-user group to which the end-user who initiated the session belongs, as configured by you in End User Management Administration.
Location	Displays the name of the location of the end-user who initiated the session.
Operating System	Displays the operating system of the machine on which the end-user initiated the session.
Overall Traffic	Displays the total number of kilobytes sent from and received by the session.
Server IP	Displays the IP address of the server (or load balancer) reached by the end-user.
Start Time	Displays the date and time the session was started.
User Name	Displays the name of the end-user who initiated the session.

Right Pane

Description	The Right pane includes the following tabs: <ul style="list-style-type: none"> ➤ “Snapshot View” on page 499 ➤ “Page Source” on page 499 ➤ “Events” on page 499
Important Information	If Session Details has been selected in the Upper Left pane, only the Events tab is enabled.

Snapshot View

Description	Displays a picture of the page accessed by the user.
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Page Source

Description	Displays the HTML source code of the snapshot. Within a page, press CTRL + F to open the Find dialog box, which you use to search for a specific string in the source code. For details, see “Find Dialog Box” on page 441.
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Events

Description	Displays the configured events that occurred on the page, or in the session.
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Snapshot Viewer Page

Description	<p>Displays a snapshot of the selected page, as well as the HTML source code of the page and details of events that occurred on the page.</p> <p>To access: Click the View Snapshot button in the “Session Details Page” on page 490.</p>
Important Information	<ul style="list-style-type: none"> ▶ You can view snapshots of pages if the Real User Monitor engine has been configured to take snapshots of pages on errors and events, and the application has been configured to enable snapshots. You configure the Real User Monitor engine and applications in End User Management Administration. For details, see “Real User Monitor Administration User Interface” on page 303. ▶ Snapshots are opened as an Applet, which requires Sun JRE version 1.5. If this version is not installed on your machine, you are prompted to install it. ▶ If you are using Sun JRE version 1.5.0_06 and are working with basic authentication, you are prompted for the basic authentication credentials (user name and password) when the Applet is opened. For further details on this issue, refer to the Sun Developer Network Web site (http://forum.java.sun.com/thread.jspa?threadID=701390&messageID=4070035). <p>Note: You can add this report as a portlet in My BAC. For details, see “Add Portlets to <page_name>/Add Portlets Dialog Box” in <i>Using My BAC</i>.</p>

The Snapshot Viewer page includes the following tabs:

- ▶ “Snapshot View” on page 501
- ▶ “Page Source” on page 501
- ▶ “Events” on page 501

Snapshot View

Description	Displays a picture of the page accessed by the user.
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Page Source

Description	<p>Displays the HTML source code of the snapshot. Within a page, press Ctrl + F to open the Find dialog box, which you use to search for a specific string in the source code.</p> <p>For details, see “Find Dialog Box” on page 441.</p>
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Events

Description	Displays the events that occurred on the page.
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Transaction Over Time Report

Description	<p>Displays details of the availability, page times, run availability, and breakdown for the selected transaction, over the course of time.</p> <p>The report can be viewed as a graph (see page 502), or as a table (see page 505), by clicking on the appropriate tab.</p> <p>To access:</p> <ul style="list-style-type: none"> ▶ Click the Transaction Over Time button for the transaction in the Transaction Summary Report (see page 508). ▶ Click the Transaction Over Time button for the transaction in the End Users by Transaction Report (see page 419).
Important Information	When accessing the Transaction Over Time report from the End Users by Transaction Report, the report is filtered for the end-user group for which you selected the report.

Report Settings

The area includes the following elements (listed alphabetically):

GUI Element	Description
<Common report settings>	For details, see “Understanding Common Report Elements” in <i>Reference Information</i> .
Active Filters	<p>Indicates which active filters have been set.</p> <p>To set active filters, click the Active Filters link. For details, see “Active Filters Dialog Box” on page 378.</p> <p>Note: The active filters tabs enabled for this report are:</p> <ul style="list-style-type: none"> ➤ Transactions ➤ End User Groups ➤ User Properties ➤ Servers
Applications	<p>Indicates the name of the selected application for which data is included in the report. If more than one application is selected, the number of selected applications is displayed.</p> <p>To select applications, click the Applications link. For details, see “Applications Dialog Box” on page 394.</p>
Clear All	Click to clear any active filters that have been previously set.

View as Graph

Description	When viewed as a graph, the Transaction Over Time report includes a graph each for availability (see page 503), hits availability (see page 503), performance (see page 504), and breakdown (see page 505).
Important Information	In each graph, you can drill down to a higher time resolution, by clicking on a bar or data point. For example, if you click on a bar that displays data for a day, the time resolution changes to hours for the specific day.

Transaction Availability Over Time Graph

The Transaction Availability Over Time graph includes the following elements (listed alphabetically):

GUI Element	Description
<Horizontal Transaction Availability Threshold line>	Displays the transaction availability threshold you configured in End User Management Administration.
<Legend>	Describes the color coding used in the bars.
<Line connecting data points>	Displays the percentage of available transactions at each point over the course of the defined time period. Tooltip: Hold the cursor over a data point on the graph to display the number and percentage of available and unavailable transactions.
Availability <y-axis>	Transaction availability percentage units.
Time <x-axis>	Time division units for the time range you defined when generating the report.

Transaction Hits Availability Over Time Graph

The Transaction Hits Availability Over Time graph includes the following elements (listed alphabetically):

GUI Element	Description
<Bars>	Each bar represents the number of the selected transaction over the course of the defined time period. The bars are divided into the number of available transactions (colored green), and the number of unavailable transactions (colored red). Tooltip: The number and percentage of available and unavailable transactions.
<Legend>	Describes the color coding used in the bars.

GUI Element	Description
Hits <y-axis>	Number of transactions.
Time <x-axis>	Time division units for the time range you defined when generating the report.

Transaction Performance Over Time Graph

The Transaction Performance Over Time graph includes the following elements (listed alphabetically):

GUI Element	Description
<Horizontal Total Time Threshold line>	Displays the transaction time threshold you configured in End User Management Administration.
<Legend>	Describes the color coding used by the graph lines.
<Lines connecting data points>	<p>The three lines on the graph represent:</p> <ul style="list-style-type: none"> ▶ the average transaction time ▶ the maximum transaction time ▶ the minimum transaction time over the course of the defined time period. <p>Tooltip: Hold the cursor over the a data point on the graph to display the average time, maximum time, minimum time, and standard deviation for the transaction at a given time.</p>
Time (secs) <y-axis>	Transaction time units in seconds.
Time <x-axis>	Time division units for the time range you defined when generating the report.

Transaction Breakdown Over Time Graph

The Transaction Breakdown Over Time graph includes the following elements (listed alphabetically):

GUI Element	Description
<Bars>	Each bar represents the total transaction time over the course of the defined time period, and is divided into five segments showing server time, network time, client time, think time, and server time to first buffer for the transaction. Tooltip: The duration of each segment in the bar.
<Horizontal Server Time Threshold line>	Displays the server time threshold of the page as configured in End User Management Administration.
<Horizontal Think Time Threshold line>	Displays the think time threshold of the page, as configured in End User Management Administration.
<Horizontal Total Time Threshold line>	Displays the total time threshold of the page, as configured in End User Management Administration.
<Legend>	Describes the color coding used by the graph lines.
Time (secs) <y-axis>	Time units in seconds.
Time <x-axis>	Time division units for the time range you defined when generating the report.

View as Table

Description	When viewed as a table, the Transaction Over Time report includes a table each for availability (see page 458), hits availability (see page 458), performance (see page 459), and breakdown (see page 460).
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Transaction Availability Over Time Table

The Transaction Availability Over Time table includes the following elements (listed alphabetically):

GUI Element	Description
Availability	Displays as a percentage, the number of successful transaction runs, out of the total number of runs for the transaction, for the defined time period.
Time	Displays the applicable date and time for the data displayed.

Transaction Hits Availability Over Time Table

The Transaction Hits Availability Over Time table includes the following elements (listed alphabetically):

GUI Element	Description
Available Hits	Displays the number of runs that completed successfully.
Time	Displays the applicable date and time for the data displayed.
Total Hits	Displays the total number of occurrences of the transaction.
Unavailable Hits	Displays the number of runs that failed.

Transaction Performance Over Time Table

The Transaction Performance Over Time table includes the following elements (listed alphabetically):

GUI Element	Description
Maximum Time	Displays the longest transaction time, in seconds.
Minimum Time	Displays the shortest transaction time, in seconds.

GUI Element	Description
STD	Displays the standard deviation of the transaction run time, in seconds.
Time	Displays the applicable date and time for the data displayed.
Transaction Time	Displays the average transaction run time, in seconds.

Transaction Breakdown Over Time Table

The Transaction Breakdown Over Time table includes the following elements (listed alphabetically):

GUI Element	Description
Client Time	Displays the average client processing time during the transaction runs.
Network Time	Displays the average network time during the transaction runs.
Server Time	Displays the average server processing time during the transaction runs.
Server Time to First Buffer	Displays the amount of time that passes from the receipt of ACK of the initial HTTP request (usually GET) until the first buffer is successfully received back from the Web server. Note: The server time to first buffer measurement is a good indicator of Web server delay.
Think Time	Displays the average think time during the transaction runs.
Time	Displays the applicable date and time for the data displayed.
Transaction Time	Displays the average transaction run time.

Transaction Summary Report

<p>Description</p>	<p>Displays data for specific transactions that were configured for Real User Monitor in End User Management Administration.</p> <p>The report contains the following tables, viewed by clicking the appropriate tab:</p> <ul style="list-style-type: none"> ➤ “General” on page 509 ➤ “Availability” on page 512 ➤ “Performance” on page 513 <p>To access:</p> <ul style="list-style-type: none"> ➤ Select Applications > End User Management > Real User > Transaction Summary ➤ Click the Transaction Summary button for a selected end-user group in the End User Summary Report (see page 407).
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Report Settings

The area includes the following elements (listed alphabetically):



GUI Element	Description
<p><Common report settings></p>	<p>For details, see “Understanding Common Report Elements” in <i>Reference Information</i>.</p>
<p>Active Filters</p>	<p>Indicates which active filters have been set.</p> <p>To set active filters, click the Active Filters link. For details, see “Active Filters Dialog Box” on page 378.</p> <p>Note: The active filters tabs enabled for this report are:</p> <ul style="list-style-type: none"> ➤ Transactions ➤ End User Groups ➤ User Properties ➤ Servers

GUI Element	Description
Applications	Indicates the name of the selected application for which data is included in the report. If more than one application is selected, the number of selected applications is displayed. To select applications, click the Applications link. For details, see “Applications Dialog Box” on page 394.
Clear All	Click to clear any active filters that have been previously set.

General

Description	Displays general data related to each configured Web page that was monitored.
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The General table includes the following elements (listed alphabetically):

GUI Element	Description
	End Users by Transaction button. Click to open the End Users by Transaction report, where you can view data for each end-user group that ran a specific transaction. For details on the End Users by Transaction report, see “End Users by Transaction Report” on page 419.
	Transaction Over Time button. Click to open the Transaction Over Time report, where you can view data over a period of time for a transaction. For details on the Transaction Over Time report, see “Transaction Over Time Report” on page 501.



GUI Element	Description
<p>Availability</p>	<p>Displays the percentage of transaction runs for which there were no availability problems. This column is color-coded, based on the transaction's availability in relation to the transaction availability threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical <p>Tooltip: The transaction availability threshold.</p> <p>Note:</p> <ul style="list-style-type: none"> ➤ If a transaction is unavailable, its data is not included in the transaction performance calculations ➤ The average availability of all transactions (that is, the total number of successful transaction runs for all transactions divided by the total number of transaction run requests for all transactions) is displayed in the summary row.
<p>Net Time</p>	<p>Displays the net time, in seconds, of the transaction (that is, server time + network time + client time of all the pages included in the transaction). This column is color-coded, based on the transaction's net time in relation to the net time threshold you configured in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical <p>Tooltip: The net transaction time threshold.</p> <p>Note: The average net time of all transactions is displayed in the summary row.</p>

GUI Element	Description
Server Time	<p>Displays the total server time of all the pages included in the transaction. This column is color-coded, based on the transaction's server time in relation to the transaction server time threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical <p>Tooltip: The server time threshold.</p> <p>Note: The average server time of all transactions is displayed in the summary row.</p>
Total Time	<p>Displays an average of the overall transaction time (from the start of the first page to the end of the last page), in seconds, for each transaction. This column is color-coded, based on the transaction's total time in relation to the total time threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical <p>Tooltip: The total transaction time threshold.</p> <p>Note: The average total transaction time of all transactions is displayed in the summary row.</p>
Transaction Name	<p>Displays the name you assigned the transaction in End User Management Administration.</p>
Transaction Runs	<p>Displays the total number of run instances for each transaction.</p> <p>Note: The sum of all the transaction run instances for each transaction is displayed in the summary row.</p>
Transaction Size	<p>Displays the total size, in kilobytes, of all the pages in each transaction.</p> <p>Note: The average transaction size of all transactions is displayed in the summary row.</p>

Availability

Description	Displays transaction availability data for each configured transaction that was monitored.
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The Availability table includes the following elements (listed alphabetically):

GUI Element	Description
	<p>End Users by Transaction button. Click to open the End Users by Transaction report, where you can view data for each end-user group that ran a specific transaction.</p> <p>For details on the End Users by Transaction report, see “End Users by Transaction Report” on page 419.</p>
	<p>Transaction Over Time button. Click to open the Transaction Over Time report, where you can view data over a period of time for a transaction.</p> <p>For details on the Transaction Over Time report, see “Transaction Over Time Report” on page 501.</p>
Availability	<p>Displays the percentage of transaction runs for which there were no availability problems. This column is color-coded, based on the transaction’s availability in relation to the transaction availability threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical <p>Tooltip: The transaction availability threshold.</p> <p>Note: If a transaction is unavailable, its data is not included in the transaction performance calculations.</p>
Runs	Displays the total number of run instances for each transaction.
Transaction Name	Displays the name you assigned the transaction in End User Management Administration.
Unavailable Runs	Displays, for each transaction, the total number of transaction run instances for which availability problems occurred.

Performance

Description	Displays data about the duration of each configured transaction that was monitored.
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The Performance table includes the following elements (listed alphabetically):

GUI Element	Description
	<p>End Users by Transaction button. Click to open the End Users by Transaction report, where you can view data for each end-user group that ran a specific transaction.</p> <p>For details on the End Users by Transaction report, see “End Users by Transaction Report” on page 419.</p>
	<p>Transaction Over Time button. Click to open the Transaction Over Time report, where you can view data over a period of time for a transaction.</p> <p>For details on the Transaction Over Time report, see “Transaction Over Time Report” on page 501.</p>
Client Time	Displays the total time, in seconds, that each page included in the transaction was delayed on the client machine.
Net Time	<p>Displays the net time, in seconds, of the transaction (that is, server time + network time + client time of all the pages included in the transaction). This column is color-coded, based on the transaction’s net time in relation to the net time threshold you configured in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical

GUI Element	Description
Network Time	Displays the total time, in seconds, that each page included in the transaction was delayed on the network.
Runs	Displays the total number of run instances for each transaction.
Server Time	<p>Displays the total server time of all the pages included in the transaction. This column is color-coded, based on the transaction's server time in relation to the transaction server time threshold you defined in End User Management Administration.</p> <ul style="list-style-type: none"> ▶ Green. OK ▶ Red. Critical
Server Time to First Buffer	<p>Displays the amount of time that passes from the receipt of ACK of the initial HTTP request (usually GET) until the first buffer is successfully received back from the Web server.</p> <p>Note: The server time to first buffer measurement is a good indicator of Web server delay.</p>
Slow Transaction Net Time	Displays the average net transaction time, in seconds, of each transaction's slow runs.

GUI Element	Description
Slow Transaction Server Time	Displays the average server time, in seconds, of each transaction's slow runs.
Slow Transaction Total Time	Displays the average total transaction time, in seconds, of each transaction's slow runs.
Think Time	Displays the average think time for each transaction (that is, the time between page downloads which is calculated as transaction time - server time - network time - client time).
Total Time	<p>Displays an average of the overall transaction time (from the start of the first page to the end of the last page), in seconds, for each transaction. This column is color-coded, based on the transaction's total time in relation to the total time threshold you configured in End User Management Administration.</p> <ul style="list-style-type: none"> ➤ Green. OK ➤ Red. Critical
Transaction Name	Displays the name you assigned the transaction in End User Management Administration.

Unconfigured End Users by Country/State, City, or IP

<p>Description</p>	<p>Displays data for the end-users included in:</p> <ul style="list-style-type: none"> ▶ an unconfigured end-user group selected in the End User Summary report, grouped by country and state. ▶ a country or state selected in the Unconfigured End Users by Country/State report, grouped by city. ▶ a city selected in the Unconfigured End Users by City report, grouped by IP address. <p>To access:</p> <ul style="list-style-type: none"> ▶ Click the Unconfigured End Users by Country/State button for a selected, unconfigured end-user group in the End User Summary Report (for details, see page 407), to display the Unconfigured End Users by Country/State report. ▶ Click the Unconfigured End Users by City button for a selected country and state in the Unconfigured End Users by Country/State report, to display the Unconfigured End Users by City report. ▶ Click the Unconfigured End Users by IP button for a selected city in the Unconfigured End Users by City report, to display the Unconfigured End Users by IP report.
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Report Settings


The area includes the following elements (listed alphabetically):

GUI Element	Description
<Common report settings>	For details, see “Understanding Common Report Elements” in <i>Reference Information</i> .
Active Filters	<p>Indicates which active filters have been set.</p> <p>To set active filters, click the Active Filters link. For details, see “Active Filters Dialog Box” on page 378.</p> <p>Note: The active filters tabs enabled for this report are:</p> <ul style="list-style-type: none"> ▶ End User Groups

GUI Element	Description
Applications	<p>Indicates the name of the selected application for which data is included in the report. If more than one application is selected, the number of selected applications is displayed.</p> <p>To select applications, click the Applications link. For details, see “Applications Dialog Box” on page 394.</p>
Clear All	Click to clear any active filters that have been previously set.

Report Content

The Unconfigured End Users by Country/State, City, or IP reports include the following elements (listed alphabetically):

GUI Element	Description
	<p>Unconfigured End Users by City button. In the Unconfigured End Users by Country/State report, click to open the Unconfigured End Users by City report, where you can view data for a selected country and state.</p> <p>Unconfigured End Users by IP button. In the Unconfigured End Users by City report, click to open the Unconfigured End Users by IP report, where you can view data for a selected IP range.</p>
Available Page Hits	<p>Displays the total number of available page hits generated by the end-users in each country and state, city, or IP range.</p> <p>Note: The sum of all the available page hits for each country and state, city, or IP range is displayed in the summary row.</p>
End User	<p>Displays the IP range and name, if available, of the IP addresses included in the Unconfigured End Users by IP report.</p> <p>Note: This element is not included in the Unconfigured End Users by Country/State or City reports.</p>
HTTP Traffic	<p>Displays the number of kilobytes that the end-users in each country and state, city, or IP range sent to, and received from, the servers via HTTP.</p> <p>Note: The sum of all the sent and received HTTP kilobytes for each country and state, city, or IP range is displayed in the summary row.</p>

GUI Element	Description
HTTPS Traffic	<p>Displays the number of kilobytes that the end-users in each country and state, city, or IP range sent to, and received from, the servers via HTTPS.</p> <p>Note: The sum of all the sent and received HTTPS kilobytes for each country and state, city, or IP range is displayed in the summary row.</p>
Latency	<p>Displays the average network latency, in milliseconds, for the end-users in each country and state, city, or IP range.</p> <p>Note: The average latency for all the end-users in each country and state, city, or IP range is displayed in the summary row.</p>
Location	<p>Displays the name of each country, state or city included in the report. If the geographic location is unknown, OTHER is displayed.</p> <p>Note: This element is not included in the Unconfigured End Users by IP report.</p>
Pages with Errors	<p>Displays the total number of pages hit that had errors for the end-users in each country and state, city, or IP range.</p> <p>Note: The sum of all the pages with errors for each country and state, city, or IP range is displayed in the summary row.</p>
Pages with High Latency	<p>Displays the total number of pages whose average network latency exceeded the configured latency threshold, for the end-users in each country and state, city, or IP range.</p> <p>Note: The sum of all the slow page hits for all the end-users in each country and state, city, or IP range is displayed in the summary row.</p>

GUI Element	Description
<p>Pages with Performance Problems</p>	<p>Displays the total number of pages hit that had performance events for the end-users in each country and state, city, or IP range.</p> <p>Note: The sum of all the pages with performance problems for each country and state, city, or IP range is displayed in the summary row.</p>
<p>Slow Pages Latency</p>	<p>Displays the average latency, in milliseconds, for the end-users in each country and state, city, or IP range.</p> <p>Note: The average latency for all the end-users in each country and state, city, or IP range is displayed in the summary row.</p>
<p>Unavailable Page Hits</p>	<p>Displays the total number of unavailable page hits generated by the end-users in each country and state, city, or IP range.</p> <p>Note: The sum of all the unavailable page hits for each country and state, city, or IP range is displayed in the summary row.</p>

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