# Table of Contents

## Introduction to this Guide

- About Quest Software, Inc. ................................................................. 5
- Contacting Quest Software ................................................................. 5
- Contacting Quest Support ................................................................. 5

## Using the Cartridge for End User Service Operations Console

- Getting Started .................................................................................. 6
- Exploring the End User Tab ................................................................. 8
- Real User Transactions ....................................................................... 9
- Synthetic Transactions ...................................................................... 11
- Configuring Display Options ............................................................. 14

## Reference

- Views .................................................................................................... 15
  - Real User Views ............................................................................ 16
  - Synthetic Views ............................................................................ 19
  - Other Views .................................................................................. 23

## Index

- ........................................................................................................ 25
Welcome to the Visualizing End User Transactions in the Service Operations Console User and Reference Guide. This User and Reference Guide describes extensions to the Service Operations Console included with the Cartridge for EU-SOC and contains reference information about the views defined in this cartridge.

This guide is intended for any user who wants to know more about the Service Operations Console capabilities that are available with End User monitoring solutions.
About Quest Software, Inc.

Quest Software (Nasdaq: QSFT) simplifies and reduces the cost of managing IT for more than 100,000 customers worldwide. Our innovative solutions make solving the toughest IT management problems easier, enabling customers to save time and money across physical, virtual and cloud environments. For more information about Quest solutions for administration and automation, data protection, development and optimization, identity and access management, migration and consolidation, and performance monitoring, go to www.quest.com.

Contacting Quest Software

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Contacting Quest Support

Quest Support is available to customers who have a trial version of a Quest product or who have purchased a Quest product and have a valid maintenance contract. Quest Support provides unlimited 24x7 access to our support portal. Visit our support portal at http://www.quest.com/support.

From our support portal, you can do the following:

- Retrieve thousands of solutions from our Knowledge Base
- Download the latest releases and service packs
- Create, update, and review Support cases

View the Global Support Guide for a detailed explanation of support programs, online services, contact information, policies, and procedures. The guide is available at: http://www.quest.com/support.
Using the Cartridge for End User Service Operations Console

Service mechanisms in Foglight allow users to organize monitoring components into logical groups. A primary use case for this is for a multi-tier application where objects are organized into service tiers and visualized in the Service Operations Console.

Foglight Cartridge for End User Service Operations Console extends the Service Operations Console by adding a new tab to visualize FxM, FxV and FTR end-user data in the context of application services in Foglight. This information appears on the End User tab of the Service Operations Console. Use this tab to explore the End User performance.

Getting Started

The Cartridge for End User Service Operations Console provides extensions to a configured End User environment that has several prerequisite components already in place.

First, you need a Foglight Experience Monitor (FxM) and/or Foglight Transaction Recorder (FTR) installed and configured to capture End User data. If you use FxM and also have a Foglight Experience Viewer (FxV) in place, you can also use it in addition to FxM.

FTR is a Windows-based application that records and plays back synthetic Web transactions on regular intervals. FxM is a network appliance that monitors Web transactions from real end users by tapping into the HTTP/HTTPS traffic stream as it transverses the internal network. FxV is a transaction repository that stores, and indexes every HTTP/HTTPS request/response pair captured from the network. FxV users can search, find, and analyze individual problematic transactions.

Next, you also need the appropriate End User cartridges installed and configured on the Management Server to send End User data to Foglight and visualize it in the browser interface.

This includes installing the cartridges for FxM, FxV, and the appropriate FTR components, as applicable. For example, if you are using FxM and FxV appliances to gather End User data, you need the following cartridges installed:

- End User Core Cartridge
- Cartridge for FxM
- Cartridge for FxV
For complete information about FxM, FxV, and FTR, see their product documentation. For cartridge installation details, see the *End User Monitoring Installation and Configuration Guide*.

As a final step, you need to install the Cartridge for End User Service Operations Console on the Management Server, and create a service that includes FTRResults and/or FxMApplcationResults objects. You can do that using the Service Builder.

For instructions about installing Foglight cartridges on the Management Server, see the *Administration and Configuration Help*. For more information about the Service Builder, see “Monitoring Your Services” in the *Foglight User Help*.

These steps are summarized in the following procedure.

**To get started:**

1. Ensure that your End User monitoring environment has an installed and configured FxM (and optionally FxV) and/or FTR.

2. Ensure that the appropriate End User cartridges are installed on the Management Server.

3. Install the Cartridge for End User Service Operations Console on the Management Server using the Cartridge Inventory dashboard in the browser interface. This dashboard is accessible from the navigation panel under *Dashboards > Administration > Cartridges > Cartridge Inventory*.

   ![Cartridge Inventory](image)

   For additional instructions, see “Installing Foglight cartridges” in the *Administration and Configuration Help*.

4. Ensure that your monitoring environment has a service defined that includes FTRResults (if you use FTR for End User monitoring) or FxMApplcationResults (if you use FxM)
objects. You can see a list of existing services or create new ones using the Service Builder. The Service Builder is accessible from the navigation panel under **Dashboards > Services > Service Builder**.

For more information about the Service Builder, see “Monitoring Your Services” in the *Foglight User Help*.

**Exploring the End User Tab**

The **End User** tab displays a set of tiles representing transactional performance collected from FxM and/or FTR. The type and dynamics of transactional data dictate the number and type of tiles that appear on this tab, along with the **Display Options** you can configure (see “Configuring Display Options” on page 14).
Each tile can display one of the following transaction types: Real User Transactions or Synthetic Transactions.

To access the End User tab:

1. Log in to the Foglight browser interface.
2. On the navigation panel, under Dashboards, choose Services > Service Operations Console.
3. On the Service Operations Console, open the End User tab.

**Real User Transactions**

When a service includes an FxMApplicationResults model object, it appears on the Real Users Tile, providing an at-a-glance view of that transaction’s performance. This tile displays the total number of active end users interacting with the monitored application, transaction front-end and back-end response times, along with other metrics. These metrics are collected by FxM. For more information about the metrics appearing on this tile, see page 17.

Drilling down on this tile displays the Real User Performance Dialog Box. For more information about the metrics appearing on this dialog box, see page 16.
From here, you can:

- Click **Edit Content Analysis Associations** to show the state of the available counters that represent some statistics about the monitored application. For example, you can see the number of times a Web page returned a 404 error code, or Web page hit counts. Select one or more of the available counters in the **Edit Content Analysis Associations** dialog box to display their statistics in the **Real User Performance** dialog box, under **Content Analysis**.

**Note** This is only possible if your monitoring environment includes an FxV appliance along with a Cartridge for FxV installed on the Management Server.
• Click **View in End User Explorer** to see the application statistics in the End User Explorer dashboard. For more information about this dashboard, see the *Managing the Cartridge for FxM User and Reference Guide*.

**Synthetic Transactions**

When a service includes an `FTRResults` object, the **End User** tab displays one or more **Synthetics** tiles. These metrics are collected by FTR. Depending on the number of tiles and the configured **Display Options** (see “Configuring Display Options” on page 14), a collection of **Single-location transaction layout** or **Multi-location transaction layout** tiles appear.

**Single-location transaction layout**

The **Single-Location Synthetics Tile** shows summarized data about a synthetic transaction executed from a single location. This type of layout shows the number of script executions and their execution times over the monitored period, along with other metrics. For more information about the metrics appearing on this tile, see page 20.

![Synthetic Loyalty (Also Velo) 38](image)

Drilling down on this tile displays the **Synthetics Result Dialog Box**. For more information about the metrics appearing on this dialog box, see page 21.
From here, you can:

- Click **Synthetic Result Detail** to see the script execution statistics in the End User Explorer dashboard. For more information about this dashboard, see the *Foglight Transaction Player User and Reference Guide*.

**Multi-location transaction layout**

The **Multi-Location Synthetics Tile** shows summarized data about a synthetic transaction executed from multiple locations. This type of layout shows the total number of script execution locations and the numbers of locations for each alarm state (Normal, Warning, Critical, and Fatal). For more information about the metrics appearing on this tile, see page 19.

Drilling down on this tile displays the **Synthetics User Performance Dialog Box**. For more information about the metrics appearing on this dialog box, see page 23.
Drilling down on a particular location displays the **Synthetics Result Dialog Box**. For more information about the metrics appearing on this dialog box, see page 21.

From here, you can:

- Click **Synthetic Result Detail** to see the script execution statistics in the End User Explorer dashboard. For more information about this dashboard, see the *Foglight Transaction Player User and Reference Guide*. 
Configuring Display Options

You can customize the layout of the End User tab by selecting the appropriate options in the Tiles Display Option Dialog Box. This allows you to control the total number of tiles, the order in which they appear, and the roll up options for multiple FTR locations.

The following principles apply:

- The End User tab can display as many tiles as there are monitored entities. If there are more tiles than there is visual space, a scroll bar appears, allowing you to view the entire set of tiles.

- You can roll up synthetic transactions locations into multi-location Synthetics tiles based on these criteria, in the following order:
  - the maximum number of single-location Synthetics tiles, using the Rollup if there are more than n FTR tiles setting, and then
  - the maximum number of locations per script, using the When there are more than n location(s) for a script setting.

- Synthetic transaction locations are first rolled up using the above criteria. After that, the total number of tiles is truncated based on the maximum number of tiles that you specify, using the Show at most n tiles setting.

- You can sort the tiles by type or alarm state (using the Sort Order options) and limit their number by specifying the maximum number of tiles to appear. For example, you can configure the End User tab to display the maximum of ten tiles and sort them by the alarm state. This results in displaying up to ten tiles, starting with ones with the highest severity state.

To configure display options:


   The Tiles Display Option Dialog Box appears.

   ![Tiles Display Option Dialog Box](image)

2. In the Tiles Display Option Dialog Box, configure these options, as required.

3. Click Save.

4. The Tiles Display Option Dialog Box closes and the End User tab refreshes, reflecting the newly updated display options.
Reference

This chapter contains reference information about views that are included with the cartridge. Read this chapter to find out more details about the metrics appearing on these views.

Views

Foglight displays monitoring data in views that group, format, and display data. The main types are described below.

Dashboards are top-level views that contain lower-level views. The dashboards supplied with Foglight, as well as those created by users, are accessible from the navigation panel.

Lower-level views in Foglight can be added to dashboards or can be accessed by drilling down from a dashboard. They receive and display data directly from the Management Server or from other views. Some views filter or select data that appears in other views in the same dashboard. Some are tree views with expandable nodes for selecting servers, applications, or data.

The Cartridge for End User Service Operations Console includes the End User tab that allows you to monitor End User transactions. This tab contains a combination of tiles and can display drill down views when the appropriate options are selected. This section describes these views in more detail. For more information about the End User tab, see “Exploring the End User Tab” on page 8.

This cartridge includes the following groups of views:

- Real User Views
  - Real User Performance Dialog Box
  - Real Users Tile
- Synthetic Views
  - Multi-Location Synthetics Tile
  - Single-Location Synthetics Tile
  - Synthetics Result Dialog Box
  - Synthetics User Performance Dialog Box
- Other Views
  - Tiles Display Option Dialog Box
Real User Views

This group includes the following views:

- Real User Performance Dialog Box
- Real Users Tile

Real User Performance Dialog Box

Purpose

The Real User Performance dialog box shows detailed information about real user transactions.

How to Get Here

When there is application data collected from the FxM, on the End User tab of the Service Operations Console, drill down on a Real Users Tile to display this dialog box.
Real Users Tile

Purpose

The Real Users tile shows summarized data about real-user transactions measured by FxM. The title bar indicates the name of the monitored application.
How to Get Here

When there is application data collected from the FxM, one or more Real Users tiles appear on the End User tab of the Service Operations Console.

Description of the View

Data displayed

- **Back End.** The time from when the first byte of a transaction request is detected on the receiving Web server until the time the last byte of that transaction response was sent out of the Web server. This includes all Web server time, application server time, database time, and Web service call time spent behind the Web server needed to fulfill the transaction request. Back End times are given over the time range period selected in the Service Operations Console.

- **Content Analysis.** If any counters are selected in the Real User Performance Dialog Box drilldown, this is indicator shows the highest severity alarm raised against one or more selected counters: Normal ☝️, Warning 🚩, Critical 🟢, or Fatal 🟡. If no counters are selected, this indicator appears disabled ☹️.

- **Current Sessions.** The total number of active end users that are currently interacting with the monitored transaction.

- **Front End.** The time from when the first byte of a transaction is sent from the end user’s browser until the time the last byte of that transaction was processed in the browser. This includes all Back End time, network time and browser processing time. Front End times are given over the time range period selected in the Service Operations Console.

- **Health history bar.** The color-coded bar represents the alarm state of the monitored application over the time range period selected in the Service Operations Console. The color of the bar changes over that period depending on the alarm state. Red indicates that the monitored application is in Fatal state, orange indicates Critical, yellow means Warning, and green is for the Normal State.

- **OLA.** The average percentage of pages that satisfy the Operation Level Agreement (OLA), as defined by the Page Processing Time threshold, during the time range interval selected in the Service Operations Console.

- **Page Count.** The average number of page download requests over the time range period selected in the Service Operations Console.
Synthetic Views

This group includes the following views:

- Multi-Location Synthetics Tile
- Single-Location Synthetics Tile
- Synthetics Result Dialog Box
- Synthetics User Performance Dialog Box

Multi-Location Synthetics Tile

Purpose

The Multi-Location Synthetics Tiles summarizes the performance of a synthetic transaction from multiple locations. The title bar indicates the transaction name. Use this tile to gather performance information about the overall state of rolled up locations.

How to Get Here

When a script is assigned to a monitored application, the script execution data is collected from the Foglight Transaction Player, the script is assigned to multiple locations, and the Display Options are configured to roll up multiple FTR locations, this tile appears on the End User tab of the Service Operations Console, for the configured application. For more information about the Display Options, see “Configuring Display Options” on page 14.

Description of the View

Data displayed

- **Best Location.** The location of the Foglight Transaction Player Intelligent Agent with the best success rates, followed by its success rate. The success rate represents the average rate during the time range interval selected in the Service Operations Console.
## Description of the View

- **Critical state**. The current number of locations in Critical state, along with a color-coded bar. The orange portion of the bar indicates the number of locations in this state compared to the number of locations in the state that has the highest number of locations. For example, if there are four locations in Fatal state, and one of each in Normal, Warning and Critical state, the entire Fatal state bar appears red, while the other three have only one fourth of the bar colored (the remaining part appears in light gray), to indicate the overall ratio of locations in these states against the state with the highest number of locations.

- **Fatal state**. The current number of locations in Fatal state, along with a color-coded bar. The red portion of the bar indicates the number of locations in this state compared to the number of locations in the state that has the highest number of locations.

- **Locations**. The current number of agent locations.

- **Normal state**. The current number of locations in Normal state, along with a color-coded bar. The green portion of the bar indicates the number of locations in this state compared to the number of locations in the state that has the highest number of locations. The remaining part of the bar appears in light gray.

- **Warning state**. The current number of locations in Warning state, along with a color-coded bar. The yellow portion of the bar indicates the number of locations in this state compared to the number of locations in the state that has the highest number of locations. The remaining part of the bar appears in light gray.

- **Worst Location**. The location of the Foglight Transaction Player Intelligent Agent with the worst success rates. The success rate represents the average rate during the time range interval selected in the Service Operations Console.

### Where to go next
*Drill down on:*

- **Title bar**. Displays the **Synthetics User Performance Dialog Box**.

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## Single-Location Synthetics Tile

### Purpose

The single-location **Synthetics** tile displays a summary of a synthetic transaction from a single location. The title bar indicates the transaction name and its location.
How to Get Here

When there is application data collected from the FTR, one or more single-location Synthetics tiles appear on the **End User** tab of the Service Operations Console.

Description of the View

**Data displayed**

- **Agent Status.** The icon indicating the current state of the Foglight Transaction Player Agent: **Normal**, **Warning**, **Critical**, or **Fatal**.
- **Availability.** The average percentage of time the service is available over the time range selected in the Service Operations Console.
- **Executions.** The number of times the script executed over the time range selected in the Service Operations Console.
- **Health history bar.** The color-coded bar represents the alarm state of the monitored script over the time range period selected in the Service Operations Console. The color of the bar changes over that period depending on the alarm state. Red indicates that the monitored script is in Fatal state, orange indicates Critical, yellow means Warning, and green is for the Normal State.
- **Latest.** The most recent time the script executed.
- **Met.** The average percentage of time the service met its required Service Level Agreement for the expected response time, over the time range period selected in the Service Operations Console.
- **Response Time.** The average script execution time over the time range period selected in the Service Operations Console.

**Where to go next**

Drill down on:

- **Title bar.** Displays the Synthetics Result Dialog Box.

Synthetics Result Dialog Box

**Purpose**

The **Synthetics Result dialog box** displays the details of a synthetic transaction executing from a single location.
How to Get Here

When there is application data collected from the FTR, on the **End User** tab of the Service Operations Console, drill down on a **Single-Location Synthetics Tile** to display this dialog box.

Description of the View

**Data displayed**

- **Agent.** The name of the Foglight Transaction Player Agent, its current state, followed by any alarm counts, if applicable.

- **Health history bar.** The color-coded bar represents the alarm state of the monitored script over the time range period selected in the Service Operations Console. The color of the bar changes over that period depending on the alarm state. Red indicates that the monitored script is in Fatal state, orange indicates Critical, yellow means Warning, and green is for the Normal State.

- **Response Time.** The time spent the agent spend responding to requests over the time range period selected in the Service Operations Console.

- **Summary.** The number of script execution times during the time range period selected in the Service Operations Console during which they were initiated, followed by the number of script instructions in the current transaction count.
Synthetics User Performance Dialog Box

Purpose
The Synthetics User Performance dialog box displays the statistics for each rolled up location for a synthetic transaction. It contains a set of views, with each showing details about a specific rolled up location.

How to Get Here
When there is application data collected from the FTR, and a script is assigned to more than one location, on the End User tab of the Service Operations Console, drill down on a Multi-Location Synthetics Tile to display this dialog box.

Description of the View
See “Single-Location Synthetics Tile” on page 20 for data descriptions.

Other Views
This group includes the following view:

• Tiles Display Option Dialog Box

Tiles Display Option Dialog Box

Purpose
Use the Tiles Display Option dialog box to control the total number of tiles, the order in which they appear, and the roll up options for multiple FTR locations.
For example, you can configure the **End User** tab to display the maximum of ten tiles and sort them by the alarm state. These types of settings result in displaying up to ten tiles with highest severity states. For more information, see “Configuring Display Options” on page 14.

![Tiles Display Option dialog box](image)

**How to Get Here**

When there is application data collected from the FTR, on the **End User** tab of the Service Operations Console, click **Display Options**.
Index

C
  cartridge
    about 6
  configuring
    display options 14

D
display options
  configuring 14

E
End User tab
  exploring 8
    configuring display options 14
    real user transactions 9
    synthetic transactions 11
exploring End User tab 8
  configuring display options 14
  real user transactions 9
  synthetic transactions 11
    multi-location transaction layout 12
    single-location transaction layout 11

G
getting started 6

H
how to
  access
    End User tab 9
  get started 7

M
multi-location Synthetics tile 19
multi-location transaction layout 12

R
Real User Performance dialog box 16
real user transactions 9
Real Users tile 17
reference 15
  view reference 15

S
single-location Synthetics tile 20
single-location transaction layout 11
support 5
synthetic transactions 11
  multi-location transaction layout 12
  single-location transaction layout 11
Synthetics Result dialog box 21
Synthetics tile
  multi-location Synthetics tile 19
  single-location Synthetics tile 20
Synthetics User Performance dialog box 23

T
tabs
  End User tab 8
    configuring display options 14
    real user transactions 9
    synthetic transactions 11
  technical support 5
Tiles Display Option dialog box 23
transactions
  real user transactions 9
  synthetic transactions 11
    multi-location transaction layout 12
    single-location transaction layout 11

V
view reference 15
views
  multi-location Synthetics tile 19
Index

Real User Performance dialog box  16
Real Users tile  17
single-location Synthetics tile  20
Synthetics Result dialog box  21
Synthetics User Performance dialog box  23
Tiles Display Option dialog box  23