

Foglight™ for Application Servers 5.9.12  
**Administration and Configuration  
Guide**



**© 2017 Quest Software Inc.**

**ALL RIGHTS RESERVED.**

This guide contains proprietary information protected by copyright. The software described in this guide is furnished under a software license or nondisclosure agreement. This software may be used or copied only in accordance with the terms of the applicable agreement. No part of this guide may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording for any purpose other than the purchaser's personal use without the written permission of Quest Software Inc.

The information in this document is provided in connection with Quest Software products. No license, express or implied, by estoppel or otherwise, to any intellectual property right is granted by this document or in connection with the sale of Quest Software products. EXCEPT AS SET FORTH IN THE TERMS AND CONDITIONS AS SPECIFIED IN THE LICENSE AGREEMENT FOR THIS PRODUCT, QUEST SOFTWARE ASSUMES NO LIABILITY WHATSOEVER AND DISCLAIMS ANY EXPRESS, IMPLIED OR STATUTORY WARRANTY RELATING TO ITS PRODUCTS INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT SHALL QUEST SOFTWARE BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE, SPECIAL OR INCIDENTAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF PROFITS, BUSINESS INTERRUPTION OR LOSS OF INFORMATION) ARISING OUT OF THE USE OR INABILITY TO USE THIS DOCUMENT, EVEN IF QUEST SOFTWARE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Quest Software makes no representations or warranties with respect to the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Quest Software does not make any commitment to update the information contained in this document.

If you have any questions regarding your potential use of this material, contact:

Quest Software Inc.  
Attn: LEGAL Dept.  
4 Polaris Way  
Aliso Viejo, CA 92656

Refer to our website (<https://www.quest.com>) for regional and international office information.

**Patents**

Quest Software is proud of our advanced technology. Patents and pending patents may apply to this product. For the most current information about applicable patents for this product, please visit our website at <https://www.quest.com/legal>.

**Trademarks**

Quest, the Quest logo, and Join the Innovation are trademarks and registered trademarks of Quest Software Inc. For a complete list of Quest marks, visit <https://www.quest.com/legal/trademark-information.aspx>. "Apache HTTP Server", Apache, "Apache Tomcat" and "Tomcat" are trademarks of the Apache Software Foundation. Google is a registered trademark of Google Inc. Android, Chrome, Google Play, and Nexus are trademarks of Google Inc. Red Hat, JBoss, the JBoss logo, and Red Hat Enterprise Linux are registered trademarks of Red Hat, Inc. in the U.S. and other countries. CentOS is a trademark of Red Hat, Inc. in the U.S. and other countries. Fedora and the Infinity design logo are trademarks of Red Hat, Inc. Microsoft, .NET, Active Directory, Internet Explorer, Hyper-V, Office 365, SharePoint, Silverlight, SQL Server, Visual Basic, Windows, Windows Vista and Windows Server are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. AIX, IBM, PowerPC, PowerVM, and WebSphere are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide. Java, Oracle, Oracle Solaris, PeopleSoft, Siebel, Sun, WebLogic, and ZFS are trademarks or registered trademarks of Oracle and/or its affiliates in the United States and other countries. SPARC is a registered trademark of SPARC International, Inc. in the United States and other countries. Products bearing the SPARC trademarks are based on an architecture developed by Oracle Corporation. OpenLDAP is a registered trademark of the OpenLDAP Foundation. HP is a registered trademark that belongs to Hewlett-Packard Development Company, L.P. Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both. MySQL is a registered trademark of MySQL AB in the United States, the European Union and other countries. Novell and eDirectory are registered trademarks of Novell, Inc., in the United States and other countries. VMware, ESX, ESXi, vSphere, vCenter, vMotion, and vCloud Director are registered trademarks or trademarks of VMware, Inc. in the United States and/or other jurisdictions. Sybase is a registered trademark of Sybase, Inc. The X Window System and UNIX are registered trademarks of The Open Group. Mozilla and Firefox are registered trademarks of the Mozilla Foundation. "Eclipse", "Eclipse Foundation Member", "EclipseCon", "Eclipse Summit", "Built on Eclipse", "Eclipse Ready" "Eclipse Incubation", and "Eclipse Proposals" are trademarks of Eclipse Foundation, Inc. IOS is a registered trademark or trademark of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries. Apple, iPad, iPhone, Mac OS, Safari, Swift, and Xcode are trademarks of Apple Inc., registered in the U.S. and other countries. Ubuntu is a registered trademark of Canonical Ltd. Symantec and Veritas are trademarks or registered trademarks of Symantec Corporation or its affiliates in the U.S. and other countries. OpenSUSE, SUSE, and YAST are registered trademarks of SUSE LLC in the United States and other countries. Citrix, AppFlow, NetScaler, XenApp, and XenDesktop are trademarks of Citrix Systems, Inc. and/or one or more of its subsidiaries, and may be registered in the United States Patent and Trademark Office and in other countries. AlertSite and DéjàClick are either trademarks or registered trademarks of Boca Internet Technologies, Inc. Samsung, Galaxy S, and Galaxy Note are registered trademarks of Samsung Electronics America, Inc. and/or its related entities. MOTOROLA is a registered trademarks of Motorola Trademark Holdings, LLC. The Trademark BlackBerry Bold is owned by Research In Motion Limited and is registered in the United States and may be pending or registered in other countries. Quest is not endorsed, sponsored, affiliated with or otherwise authorized by Research In Motion Limited. Ixia and the Ixia four-petal logo are registered trademarks or trademarks of Ixia. Opera, Opera Mini, and the O logo are trademarks of Opera Software ASA. Tevron, the Tevron logo, and CitraTest are registered trademarks of Tevron, LLC. PostgreSQL is a registered trademark of the PostgreSQL Global Development Group. MariaDB is a trademark or registered trademark of MariaDB Corporation Ab in the European Union and United States of America and/or other countries. Vormetric is a registered trademark of Vormetric, Inc. Intel, Itanium, Pentium, and Xeon are trademarks of Intel Corporation in the U.S. and/or other countries. Debian is a registered trademark of Software in the Public Interest, Inc. OpenStack is a trademark of the OpenStack Foundation. Amazon Web Services, the "Powered by Amazon Web Services" logo, and "Amazon RDS" are trademarks of Amazon.com, Inc. or its affiliates in the United States and/or other countries. Infobright, Infobright Community Edition and Infobright Enterprise Edition are trademarks of Infobright Inc. POLYCOM®, RealPresence® Collaboration Server, and RMX® are registered trademarks of Polycom, Inc. All other trademarks and registered trademarks are property of their respective

owners.

### Legend



**WARNING:** A WARNING icon indicates a potential for property damage, personal injury, or death.



**CAUTION:** A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.



**IMPORTANT NOTE, NOTE, TIP, MOBILE, or VIDEO:** An information icon indicates supporting information.

Foglight for Application Servers Administration and Configuration Guide  
Updated - August 2017  
Software Version - 5.9.12

# Contents

<b>Introducing Application Servers Administration</b>	<b>6</b>
Application server administration dashboards	6
Monitoring agents	6
Introducing the Nexus	7
Understanding the default Nexus	7
Nexus requirements	8
Using the Nexus Administration page	8
Editing Nexus properties	9
Adjusting the Agent Manager settings for the Nexus	10
Creating Nexuses	11
<b>Managing Nexus Recording Settings</b>	<b>13</b>
Editing the Nexus recording settings	13
Using the text editor	13
Request sampling	14
Setting rules for separating requests	14
Setting rules for transforming URLs	15
Setting rules for filtering requests	18
Adjusting the number of sampled requests	19
Collection details	20
Advanced settings	21
Setting maximum display of characters for single trace parameters values	22
Setting memory usage for object tracking	23
Configuring APM URL transformation	23
Managing advanced configuration settings for all Nexuses	25
<b>Managing Actions</b>	<b>26</b>
Creating actions	26
Using variables in action Groovy scripts	28
<b>Managing Request Integration with Foglight Experience Viewer</b>	<b>29</b>
Viewing request data in FxV	30
Viewing sessions of single traces in FxV	31
Searching for single trace hits in FxV	32
Searching for hits using HTTP parameters in FxV	32
<b>Managing Trace Orders</b>	<b>34</b>
Adding trace orders	34
<b>Reviewing Application Server Metrics</b>	<b>35</b>
<b>About Us</b>	<b>36</b>
We are more than just a name	36
Our brand, our vision. Together.	36
Contacting Quest	36

Technical support resources .....	36
-----------------------------------	----

# Introducing Application Servers Administration

This *Foglight for Application Servers Administration and Configuration Guide* provides configuration instructions, conceptual information, and instructions on how to configure and manage the Nexus and related recording settings for Foglight for Java EE Technologies and Foglight for Microsoft .NET.

This guide is intended for administrators to manage and configure the Nexus, and complete other administration and configuration tasks that are common to Foglight for Java EE Technologies, Foglight for Microsoft .NET, and Foglight for JMX.

The Application Servers Administration dashboard provides a central location for creating and managing your .NET, JMX, Java, and Nexus agents. When you install Foglight for JMX, Foglight for Microsoft .NET, or Foglight for Java EE Technologies, this dashboard becomes available. Use it to create and manage agents and application server integrations, as well as to review the recent history of application server agent-related tasks.

## Application server administration dashboards

Use the links at the top of the dashboard to manage installation, configuration, and integrations for specific agent types:

- **.NET Administration** — For more information about creating and configuring .NET agents, see the [Foglight for Microsoft .NET Installation and Configuration Guide](#).
- **Java Administration** — For more information about creating and integrating Java EE agents with Java application servers, see the [Foglight for Java EE Technologies Installation Guide](#).
- **JMX Administration** — For more information about creating and managing JMX agents, see the [Foglight for JMX User Guide](#).
- **Nexus Administration** — For more information about creating and managing Nexus agents, see [Introducing the Nexus](#) on page 7.

The lower portion of the dashboard is divided into two sections: [Monitoring agents](#) and [Task history](#).

## Monitoring agents

The Monitoring Agents section of the Application Servers Administration dashboard lists all .NET, JMX, and Java EE agents, along with the type of application server they are monitoring, their version, health and collection status, and other relevant information.

Use this list instead of the Foglight Agent Status and Agent Properties dashboards to quickly review and manage agent health and configurations.

From here you can:

- Click **Refresh** to ensure that you are viewing the latest agent status.

- Click **Setup agents** to open a list of agent types that you can create. For detailed instructions on creating agents of a particular type, see the installation guide for that agent type. For more information, see [Application server administration dashboards](#) on page 6.
- Click the **Name** of an agent in the list to open a menu that enables you to perform the following activities:
  - Activate or deactivate the agent
  - Stop or start data collection
  - Open a copy of the agent log
  - Edit or switch configurations
  - Switch the server domain (.NET agents only)
  - Delete the agent
  - View the agent properties

## Task history

The Task History section of the Application Servers Administration dashboard lists all application server agent-related tasks, including the date and time the task was submitted, a description of the task, the results of the task, and the user who submitted the task.

This table is also available on the .NET Administration, Java Administration, JMX Administration, and Nexus Administration pages.

### *To clear the list:*

- 1 Select one, several, or all rows in the table.
- 2 Click **Clear**.

# Introducing the Nexus

**NOTE:** Foglight for JMX does not use or require a Nexus. The JMX agents submit data through the Agent Manager directly.

The Nexus is a central analytical engine that correlates data sent from multiple agents, restores and preserves the temporal order of events across all servers, and provides other basic analysis of the data. The Nexus is essential to the data management facilities of Foglight for Java EE Technologies and Foglight for Microsoft .NET.

The Nexus reconstructs the full application-level execution path by organizing the collected data into service requests using Quest's Tag and Follow<sup>®</sup> technology. It receives data collected from the agents, then combines and converts agent-based event information into a cohesive information set that Foglight queries and presents graphically.

## Understanding the default Nexus

Foglight creates a default Nexus as part of the installation process for Foglight for Java EE Technologies and Foglight for Microsoft .NET. The Nexus behaves as an agent: you can activate and deactivate it, start and stop its data collection, view its properties, assign a profile that contains recording settings to it, or delete it.

The default Nexus controls all agent data correlation and submission unless you create and assign another Nexus. You can copy settings from the default Nexus, or any existing Nexus, to use as the basis for a new Nexus. For more information, see [Creating Nexuses](#) on page 11.

The default Nexus contains basic recording settings for request sampling and collection details. These settings are contained in a profile. You can modify the Nexus profile through the Nexus Administration dashboard. For more information, see [Managing Nexus Recording Settings](#) on page 13.

## Nexus requirements

The Nexus runs on Foglight Agent Manager version 5.6.7.2 or later.

**IMPORTANT:** The Agent Manager heap requires at least 1 Gb of memory for the Nexus. Depending on the monitored application, this heap requirement may increase to as much as 4 Gb.

The Nexus requires Oracle (Sun) Java SE JDK 1.6, 1.7, or 1.8

The Nexus is supported on the following OS platforms:

**Table 1. Supported OS platforms for the Nexus.**

OS version	Architecture
Solaris 8, 9	SPARC
Solaris 10, 11	SPARC, x86-64
Windows XP SP1+, Server 2003, Server 2008	ia32, x86-64
Windows Server 2008 R2, Server 2012, Server 2012 R2, Server 2012 R2 Core	x86-64
Red Hat AS/ES/WS 4, 5, 6, 7	ia32, x86-64
SuSE 9, 10, 11, 12	ia32, x86-64

## Final platform support notice

Support for the following platforms will be discontinued in the next major release:

- Solaris 8 and 9
- All 32-bit versions of Oracle Solaris SPARC
- Windows XP SP1+
- Red Hat AS/ES/WS 4.x
- SuSE 9

## Using the Nexus Administration page

Use the Nexus Administration page to create, configure, and control Nexuses and their recording settings. The bottom portion of the page displays the recent [Task history](#).

### **To access the Nexus Administration page:**

- 1 On the navigation panel, under Dashboards, click **Application Servers > Administration**.
- 2 On the Application Servers Administration dashboard, click the **Nexuses** tab.

The Nexuses table lists all Nexuses, their versions and upgrade status, current health and data collection status, the Agent Manager hosting them, and the assigned recording settings.

Click the name of any Nexus agent in the table to open a menu.

From this menu, you can:

- Start or stop data collection.



- Activate or deactivate the Nexus agent.
- Get log — open or save a copy of the Nexus activity log.
- Edit the recording settings — through the UI or in a text editor. For more information, see [Managing Nexus Recording Settings](#) on page 13.
- Switch the recording settings — assign a different profile to the selected Nexus.
- Delete the Nexus.
- Upgrade the Nexus.
- View and edit the Nexus properties — including the listen port and address. For more information, see [Editing Nexus properties](#) on page 9.

## Editing Nexus properties

If you have multiple network cards on the Nexus host and you want to allow connections to the Nexus only through one card, you can use a host name or IP address as the listen address to force the Nexus to listen only on that one IP address.

### *To edit the properties of a Nexus agent:*

- 1 On the navigation panel, under Dashboards, click **Application Servers > Administration**.
- 2 On the Application Servers Administration dashboard, click the **Nexuses** tab.
- 3 On the Nexuses table, click the name of the Nexus you want to edit.
- 4 In the menu that opens, click **Properties**.  
The Nexus Properties dialog box opens.
- 5 Review the read-only information in the top section of the dialog box to ensure that you are editing the correct Nexus.
- 6 To change the port number on which the Nexus listens for connections, type a new value in the **Listen Port** box.
- 7 To change the address on which the Nexus listens for connections, select **Listen on the following network interface**, and type a host name or IP address in the box below.
- 8 Optional — adjust the Advanced Settings.

The Advanced Settings are hidden by default. It is recommended that you do not change these settings unless instructed to do so by Quest Support for troubleshooting purposes.

- a Click the arrow to the left of **Advanced Settings** to expand the advanced settings section.
- b Click the information icon ⓘ to view an explanation of the setting for the selected option. Adjust the setting as necessary based on the information provided in the explanation.

**Table 2. Descriptions of Advanced Settings.**

Setting	Description
<b>Debug Level</b>	The Nexus uses this debug level when logging. Values between 0 and 3 are typical.
<b>Agent Order Level</b>	Specifies how often the Nexus places request sample orders with the agents. It is recommended that you do not change this value. The value is specified in milliseconds. The default is 2 seconds.
<b>Commit Timeout</b>	The amount of time the Nexus tracks a Service Request before committing it to the session data file. Whenever a Request Fragment for a Service Request is received, this timer is reset. The value is specified in milliseconds. The default is 4 seconds.

**Table 2. Descriptions of Advanced Settings.**

Setting	Description
<b>Message Traffic Timeout</b>	<p>Some firewalls and NAT devices automatically close connections after a certain period of inactivity. This optional setting configures both endpoints of a Nexus connection to ensure that the idle timeout is not exceeded. A connection is closed if it is idle for longer than this timeout.</p> <p>The value specified for this setting should be equivalent to the firewall's timeout for idle connections. This setting can be set to zero if the firewall does not close idle connections or if no firewall exists between the Nexus and agents.</p> <p>This value is specified in milliseconds. By default, it is set to approximately two minutes (2 minutes 11 milliseconds).</p>
<b>Agent Status Interval</b>	<p>The Nexus periodically provides Foglight for Application Servers with a list of agents that are connected to it. Foglight for Application Servers uses this list to drive Application Server state rules. This value specifies how often the Nexus provides that list. For large systems, increasing this value may decrease Nexus and Management Server overhead at the risk of longer delays before being alerted that an Application Server has disconnected.</p> <p>The value is specified in milliseconds. The default is 30 seconds.</p>
<b>Agent Status Activation Delay</b>	<p>This value specifies how long after activation the Nexus waits before sending the list of agents for the first time. This value should be slightly longer than the longest Connection Retry Interval specified in the Nexus Connection settings for any agent in the system; to give every alive agent time to reconnect.</p> <p>The value is specified in milliseconds. The default of 22000 ms is 10% longer than the default Connection Retry Interval of 20000 ms.</p> <p><b>NOTE:</b> For more information about the Nexus Connection settings, see the installation guide for the application server agent you are using.</p>

- 9 Click **OK**.

The dialog box closes, and the Nexus settings are updated.

## Adjusting the Agent Manager settings for the Nexus

The Foglight for Application Servers Agent Manager accumulates messages that are destined to be sent either upstream or downstream in queues between connections. This prevents messages from getting lost in the event of a disconnection.

Increase the Agent Manager disk cache size to ensure that data submissions from the Java EE agent or the .NET agent are not discarded. See the documentation in the *fglam.config.xml* file for detailed descriptions of the options.

**i** | **NOTE:** This procedure is recommended for all installations.

### **To adjust the Agent Manager settings for use with the Java EE or .Net agents:**

- 1 Navigate to your Agent Manager `config` folder. For example:  
C:\Quest\_Software\Foglight\_Agent\_Manager\state\default\config.
- 2 Open the *vm.config* file in an editor.

**i** | **IMPORTANT:** In Agent Manager versions 5.6.10 and later, this file is named *baseline.jvmargs.config*.

- 3 Uncomment and set the following setting to:

```
vmparameter.0 = "-Xmx1024m";
```

- 4 Save and close the `.config` file.
- 5 In the same config directory, open the `fglam.config.xml` file in an editor.
- 6 Edit the `config:queue-sizes` and `max-disk-space` settings as follows:

```
<config:queue-sizes>
  <config:upstream max-queue-size="500" max-disk-space="100000" max-batch-
size="500" allow-runtime-change="false"/>
  <config:upstream-verified max-queue-size="250" max-disk-space="50000" max-
batch-size="250" allow-runtime-change="false"/>
  <config:downstream max-queue-size="500" max-disk-space="1024" max-batch-
size="500" allow-runtime-change="false"/>
</config:queue-sizes>
```

This sets the `max-disk-cache` size to 100MB for the upstream and upstream-verified queues (normal and verified submissions).

- 7 Save and close the `fglam.config.xml` file.
- 8 Restart the Agent Manager.

If the Nexus is running in a non-embedded Agent Manager, the Agent Manager service must be restarted. This is the more common case.

If the Nexus is running in the embedded Agent Manager (for example, if you are using the default Nexus), do one of the following:

- Restart the Management Server.

Or

- Go to `<server>/jmx-console` (for example, `http://myserver:8080/jmx-console/`) and click: `service=EmbeddedFglAm`.

Invoke the `Stop()` operation, and then invoke the `start()` operation.

If you still find warnings in the Agent Manager log about the disk cache being too small, increase the `max-disk-space` values for the upstream and upstream-verified queues.

## Creating Nexuses

Foglight creates a default Nexus when you install either Foglight for Java EE Technologies or Foglight for Microsoft .NET. You can create additional Nexuses at any time after the installation is complete.

Ensure that you have read and followed the instructions in [Adjusting the Agent Manager settings for the Nexus](#) on page 10 before creating additional Nexuses.

**i | IMPORTANT:** Agent Managers and Nexuses have a one-to-one relationship. You cannot create more than one Nexus on an Agent Manager. Keep this in mind when planning agent and Nexus deployment.

### To create a Nexus:

- 1 On the navigation panel, under Dashboards, click **Application Servers > Administration**.
- 2 On the Application Servers Administration dashboard, click the **Nexuses** tab.
- 3 On the Nexuses table, click **Create Nexus**.  
The Create Nexus wizard opens.
- 4 On the Agent Host page, select the Agent Manager to host the Nexus.

**i | IMPORTANT:** Each Agent Manager can host only one Nexus. Agent Managers that are already hosting Nexuses appear dimmed and cannot be selected.

Click **Next**.

- 5 Optional — On the Host and Port page, change the address and port where the Nexus listens for connections.
  - a In the Listen Port box, type the port number that the Nexus should listen on. By default, the port number is 41705.
  - b By default, the Nexus listens on all network interfaces.

If you want the Nexus to listen on a specific network interface, select **Listen on the following network interface**, and type the IP address or host name in the box below.

**i | TIP:** Using a host name or IP address for the value (for example, "192.162.0.1"), makes the Nexus listen for connections on only that IP address. This is useful if you have multiple network cards on the Nexus machine and you want to only allow connections to the Nexus through one card.

- c Click **Next**.

- 6 On the Recording Settings page, select the recording settings to use.

**i | IMPORTANT:** You can create additional recording settings at anytime from the Recording Settings tab of the Nexus Administration dashboard. For more information, see [Managing Nexus Recording Settings](#) on page 13.

Click **Next**.

- 7 On the Review page, review the summary of the configuration settings. If necessary, click **Previous** to go back and correct information.
- 8 Type a name for your new Nexus in the box. By default, this name is `Nexus@<host>`, where `<host>` is the Agent Manager host you selected.
- 9 To activate the Nexus after it is created, leave the **Activate Nexus** check box selected.

If you clear this check box, you must activate the Nexus manually.

- 10 Click **Finish**.

A progress box opens. When the Nexus creation is finished, a message is displayed.

- 11 Click **Close** to close the progress box.

The table on the Nexus Administration page refreshes and the new Nexus appears in the list.

#### Next steps:

- Click the name of the Nexus to view the list of options for activating and managing the Nexus. For more information, see [Using the Nexus Administration page](#) on page 8.
- For information about setting or editing recording settings, see [Managing Nexus Recording Settings](#) on page 13.


# Managing Nexus Recording Settings

The Nexus recording settings are contained in the `recording.config` file. This file contains all the configuration information for the Nexus, such as the request sampling rules and the collection details.

In earlier versions of Foglight for Java EE Technologies, these settings were edited through the Agent Properties page. To simplify the Nexus configuration process, these settings have been surfaced through a new GUI editor that is accessible from the Nexus Administration page.

## Editing the Nexus recording settings



You can edit the Nexus to create request sampling rules, modify collection details, and control other recording-related settings.

 **NOTE:** If you prefer to edit the settings manually, see [Using the text editor](#).

### To edit Nexus recording settings:

- 1 On the navigation panel, under Dashboards, click **Application Servers > Administration**.
- 2 On the Application Servers Administration dashboard, click the **Nexuses** tab.
- 3 On the Nexus view, do one of the following:
  - On the **Agents** tab, click the name of the Nexus that is using the configuration you want to edit. Click **Edit recording settings** to edit the settings through the configuration editor.
  - Or
  - On the **Recording Settings** tab, click the name of the configuration you want to edit. Click **Edit** to edit the settings.

The Edit - Nexus Recording dialog box opens.

 **TIP:** To understand how a setting is used, click the info icon .

For more information about the settings available on each of the tabs in this editor, see the following topics:

- [Request sampling](#) on page 14
- [Collection details](#) on page 20
- [Advanced settings](#) on page 21

## Using the text editor

If you are familiar with the recording settings from previous version of Foglight for Java EE Technologies, and you are comfortable editing the settings in a plain text format, you can edit the Nexus recording settings manually.

### To edit Nexus recording settings in a plain text format:

- 1 On the navigation panel, under Dashboards, click **Application Servers > Administration**.

- 2 On the Application Servers Administration dashboard, click the **Nexuses** tab.
- 3 On the Nexuses view, do one of the following:
  - On the **Agents** tab, click the name of the Nexus that is using the configuration you want to edit. Click **Text edit recording settings** to edit the settings in a plain text file.
  - Or
  - On the **Recording Settings** tab, click the name of the configuration you want to edit. Click **Text edit** to edit the settings in a plain text file.

The *recording.config* file opens in a text editor.

For information about the settings contained in this file, see the following topics:

- [Request sampling](#) on page 14
- [Collection details](#) on page 20
- [Advanced settings](#) on page 21

## Request sampling

Use the Request Sampling tab Nexus Recording editor for the Nexus to configure request separation rules, URL transformation rules, and filtering rules. Request separation is the first process that occurs when the agent collects request metrics. Next, any rule transformations are applied. Filtering occurs after request separation and URL transformation rules are applied. As a result, the filters can refer to parameter names and values from request separation, and must reference the transformed URL.

For more information, see:

- [Setting rules for separating requests](#) on page 14
- [Setting rules for transforming URLs](#) on page 15
- [Setting rules for filtering requests](#) on page 18

## Setting rules for separating requests

Request separation is the first process that takes place when collecting request metrics. On the Request Sampling tab, you can specify how to separate a request into multiple request types based on the request's parameters and cookies. Separation occurs if any of the parameters in a request match the request separation rules (*SeparationRules*) for that URL, meaning that a request may be separated based on more than one parameter. *SeparationRules* are configured in the *recording.config* property file.

The default setting is:

```
SeparationRules = {  
};
```

Keys and values can be used to customize the *SeparationRule* parameter.


- Keys — Strings or regular expressions
- Values — Lists of URL parameter names (strings)

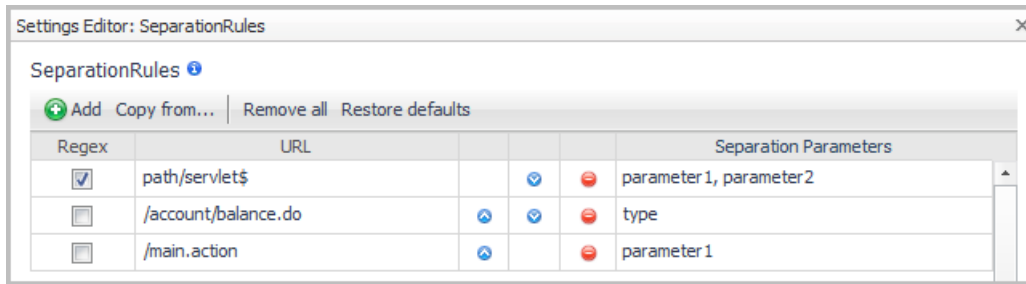
**i** | **NOTE:** Do not include the HTTP method in this rule.

**For example:**

***In the Nexus Recording editor:***

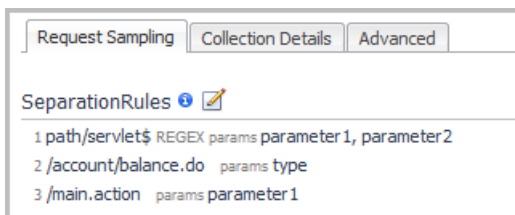
- 1 Open the Nexus Recording Editor, as described in [Using the text editor](#) on page 13.

- 2 Click **Edit**  beside SeparationRules.
- 3 In the Settings Editor, click **Add** to add each rule (one per row).



- 4 Click **OK** to close the Settings Editor.

The rules display in the editor.



#### In the text editor:

- 1 Open the *recording.config* file. For details, see [Using the text editor](#) on page 13.
- 2 Edit the SeparationRules entry:

```

SeparationRules = {
  /\path\servlet$/ : ("parameter1", "parameter2"),
  "/account/balance.do" : ("type"),
  "/main.action" : ("parameter1"),
};

```

- 3 **Save** your changes.

#### Next steps:

- Define the transformation of the URL path. See [Setting rules for transforming URLs](#) on page 15
- Set the rules for filtering, as described in [Setting rules for filtering requests](#) on page 18.

## Setting rules for transforming URLs

The Nexus recording settings define transformation of URLs. If separation parameters are defined for a URL that is to be transformed, the transformation is performed on the resulting separated URL, which includes the path and separation parameters. There may be more than one transformation defined. Each transformation may contain more than one replacement definition.

The URL transformation rules also control how requests are grouped for display on the Requests view of the Application Servers Monitor dashboard. A set of default transformations shorten the request URLs. Request types that have request separation configured are not transformed by the default rule. Static file requests (for example, images) are also not transformed.

**NOTE:** Changing any of these settings requires advanced knowledge of the product. Do not modify any of the settings if you are unfamiliar with this product.

Make a backup of the Nexus profile before editing.

You do not have to restart your instrumented application servers after editing the Nexus recording settings. Data collection is stopped and restarted automatically when the recording settings change.

### **To set URL Transformation Rules in the Nexus Recording editor:**



- 1 Open the Nexus Recording editor, as described in [Editing the Nexus recording settings](#) on page 13.
- 2 Review the default transformation rules. These rules automatically shorten request URLs as follows:

If the request has more than three '/', it is shortened to the third '/.


If the request has only two '/', it is shortened to the 2nd '/.

If the request has only one '/', it is shortened to: '/.

**NOTE:** These default transformations are only available for new installations. Upgrading from a previous version does not change your existing transformation rules.

- 3 Click **Edit**  beside URLTransformationRules.
- 4 In the Settings Editor, click  **Add URL transformation**.
- 5 In the **Add Matching URL Regex** box, type the regular expression that you want to use to match the URLs that need to be transformed.

**NOTE:** Regular expression special characters that should be matched as literal characters in the URL must be escaped with a "\ character; for example, "\?" to match a literal "?" in the URL.

- 6 Click **OK** to save the matching URL.
- 7 Optional — Repeat steps 5 and 6 as many times as necessary to add more matching URLs.
- 8 Click  **Add URL replacement**. In the new row that appears, click in each box to type the required information.
- 9 In the **Text in URL Regex** box, type the regular expression used to match the text that needs to be replaced in the URL.

**NOTE:** Regular expression special characters that should be matched as literal characters in the URL must be escaped with a "\ character; for example, "\?" to match a literal "?" in the URL.

- 10 In the **Replacement Text** box, type the literal string of the replacement text; this can be an empty string, or it can contain markers used to substitute sub-expressions from the Text in URL Regex, which are sequences of characters surrounded by parentheses. Valid markers for substitution are:

- "&" or "\0" are replaced with a copy of the entire matched region
- "\n", where n is a digit from 1 to 9, is replaced with a copy of the nth subexpression
- "\" followed by any other character is replaced with just that character. For example, "\&" or "\" are replaced with just "&" or "\".

Any other character is passed through.

Order is important. The transformation is performed using the list of replacements defined for the first Matching URL Regex that is found. The replacements are performed in the order in which they are defined. Each replacement is performed on the URL resulting from the previous replacement.



### In the text editor:

- 1 Open the *recording.config* file. For details, see [Using the text editor](#) on page 13.
- 2 Edit the `URLTransformationRules` entry:

```
URLTransformationRules = {  
  /<url-regex>/ : {  
    /<text-in-url-regex>/ : <replacement-literal>,  
  },  
  /<url-regex>/ : {  
    /<text-in-url-regex-1>/ : <replacement-literal-1>,  
    /<text-in-url-regex-2>/ : <replacement-literal-2>,  
  },  
};
```

**i** | **NOTE:** Regular expression special characters that should be matched as literal characters must be escaped with a “\” character; for example, “\?” to match a literal “?”.

where:

`<url-regex>` is a regular expression used to match the URLs that need to be transformed. The ‘/’ and ‘?’ characters must be escaped with a ‘\’ character.

`<text-in-url-regex>` is a regular expression used to match the text that needs to be replaced in the URL. The ‘/’ and ‘?’ characters must be escaped with a ‘\’ character.

`<replacement-literal>` is a string literal of the replacement text, as described in [Step 10](#) in the previous procedure. Backslashes must be doubled (“\\”).

- 3 **Save** your changes.

**i** | **NOTE:** Check the Separation Rules to confirm if the separation parameters are defined. For more information, see [Setting rules for separating requests](#) on page 14.

## Managing request types and topology object creation

If you are managing many request types, updating the Nexus recording settings to transform several different request types into the same request type can improve performance on the Management Server.

The request model that the Nexus uses generates several associated internal topology object types for each request type. This may result in an extremely high topology object count. In addition, rules are applied to each topology object and this may increase the processing load on the Management Server.

**i** | **TIP:** The higher the topology object count, the higher the processing load on your Management Server. As a result, the Application Servers Monitor > Requests view is overloaded and performs slowly. The default URL transformation rules described in [Setting rules for transforming URLs](#) were implemented to mitigate this effect. These rules apply to new installations only, not to upgrades.

For example, deployed applications may contain many request types. Poor performance of the Management Server may be due to the parameters being encoded in the URL, rather than using separate URL parameters.

Example of the parameters encoded in the URL:

```
GET /foo&categoryID=123  
GET /foo&categoryID=223  
GET /foo&categoryID=233  
GET /foo&categoryID=323
```

Foglight for Application Servers treats each of the above requests as a separate request type, each having a single associated topology object.

Example of separate URL parameters:

```
GET /foo?categoryID.123  
GET /foo?categoryID.223
```

```
GET /foo?categoryID.233
GET /foo?categoryID.323
```

Here the `GET/foo` request type has just one associated topology object, which has a count of four calls.

## Setting rules for filtering requests

Use filters to configure the Nexus to reduce the total number of request types being monitored, which decreases both overhead and storage requirements. Filtering can be configured to include some requests and exclude others. Regular expression pattern matching can be used to determine which requests are included and which are excluded. You can also match requests using literal strings. For more information about using regular expressions, see [Appendix: Regular Expressions](#) in the *Foglight for Application Servers User Guide*.

Filtering occurs after request separation and URL transformation rules are applied. As a result, the filters can refer to parameter names and values from request separation, and must reference the transformed URL. If a request is filtered out, then it cannot be traced. Filtering rules are set in the Nexus recording settings.

When setting up rules for filtering requests, keep in mind that the `FilteringRules` are applied first and then the `FilterDefault` setting is applied.

By default, the filter is configured to collect metrics for the following request types:

- HTTP requests, using the `(GET|POST|...)` filter
- RMI and JMS requests, using the `“.”` filter

Keys and values can be used to customize the `FilteringRules` parameter.

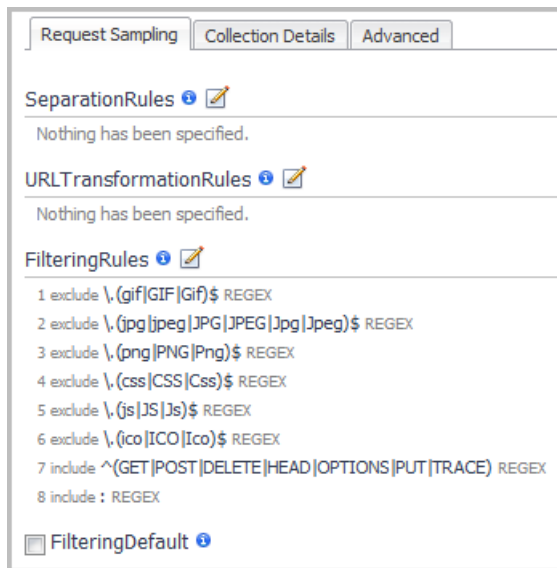
- Keys — Strings or regular expressions
- Values — Booleans that define whether the request is filtered out. If it is filtered out, the request is not monitored.

**NOTE:** You can include the HTTP method in this rule.

The following filtering rules are applied first:

```
FilteringRules = {
/\.(gif|GIF|Gif)$/ : false,
/\.(jpg|jpeg|JPG|JPEG|Jpg|Jpeg)$/ : false,
/\.(png|PNG|Png)$/ : false,
/\.(css|CSS|Css)$/ : false,
/\.(js|JS|Js)$/ : false,
/\.(ico|ICO|Ico)$/ : false,
/^(GET|POST|DELETE|HEAD|OPTIONS|PUT|TRACE)/ : true,
/:/ : true,
};
```

Figure 1. These filtering rules appear in the UI as the following list:



If none of the rules match the URL, and the `FilteringDefault` setting is enabled, then the `FilteringDefault` setting is applied.

## Adjusting the number of sampled requests

On the Application Servers dashboard, the Requests view shows the Sampled Breakdowns and the number of requests that are sampled. You can control how many requests are sampled for the time period. Collecting fewer samples reduces the overhead that the agent places on the application server.

### To adjust the number of sampled requests:

- 1 On the navigation panel, under Dashboards, click **Application Servers > Administration**.
- 2 On the Application Servers Administration dashboard, click the **Nexuses** tab.
- 3 On the Nexuses view, do one of the following:
  - On the **Agents** tab, click the name of the Nexus that is using the configuration you want to edit. Click **Text edit recording settings**.
  - Or
  - On the **Recording Settings** tab, click the name of the configuration you want to edit. Click **Manage**. On the Nexus Configuration view, click *recording*. Click **Text edit**.

The *recording.config* file opens in a text editor.

- 4 Change, or add, the following property:

```
SamplingOverhead = 0.0;
```

Values from 0.0 to 1.0 are valid for this property. A smaller value yields a smaller sample.

- 5 Save your changes.

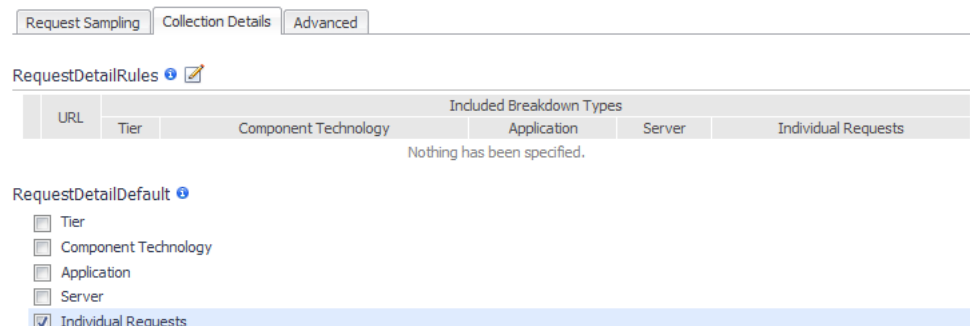
To view the results of the changes, let the application run for a while and then return to the Application Servers dashboard and select **Requests**. Click the **Sampled Breakdowns** tab in the Request Charts section and observe the change.

# Collection details

Use the Collection Details tab of the Nexus Recording editor to set request detail rules and default levels.

Request detail collection occurs after separation rules, URL transformation rules, and filtering rules are applied. There are two settings used for the collection of Requests details: `RequestDetailRules` and `RequestDetailDefault`. By default, only the Individual Requests are enabled. All other settings are undefined.

**Figure 2. The Collection Details tab.**



Request Sampling | **Collection Details** | Advanced

RequestDetailRules ⓘ

URL	Tier	Component Technology	Application	Server	Individual Requests
Nothing has been specified.					

RequestDetailDefault ⓘ

- ☐ Tier
- ☐ Component Technology
- ☐ Application
- ☐ Server
- ☒ Individual Requests

## Request Detail rule

Keys and values can be used to customize the `RequestDetailRule` parameter.

- Keys — Strings or regular expressions to match a URL
- Values — Specify which request detail information to collect

**i** | **NOTE:** It is not recommended to set the default to collect all breakdown details. Instead, consider creating appropriate request detail rules to selectively sample and exclude requests before modifying this setting.

## Request Detail default

The following values are used to collect request details, and may appear in any order and combination:

- Tier — Breaks request timing down for application and database tiers
- Component Technology — Breaks request timing down for monitored components (for example, EJBs and JSP/Servlets)
- Application — Breaks request timing down for multiple applications
- Server — Breaks request timing down across individual application servers
- Individual Requests — Breaks request timing down into individual requests. Also can display breakdowns in the Response Time Explorer when used with Foglight for Application Operations. This option is enabled by default.


**i** | **TIP:** For more information about configuring URL transformations specifically for APM, see [Configuring APM URL transformation](#) on page 23.

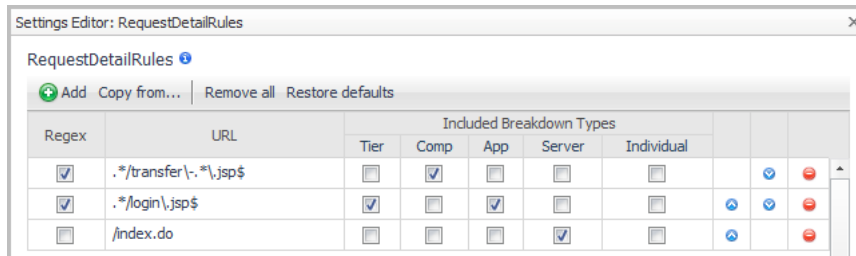
## For example:

The following procedure describes how to collect:

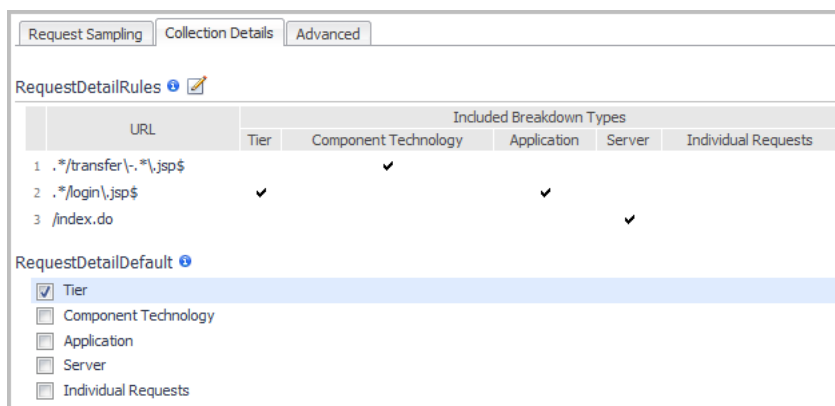
- component technology breakdown detail for all requests that perform a `transfer`
- all breakdown details for `login.jsp`
- server breakdown details for `index.do`
- Tier Breakdown information for all requests that do not match the other rules

### In the Nexus Recording editor:

- 1 Open the Nexus Recording editor, as described in [Editing the Nexus recording settings](#) on page 13.
- 2 Click the **Collection Details** tab.
- 3 Click **Edit**  beside RequestDetailRules.
- 4 In the Settings Editor, click **Add** to add each rule (one per row).



- 5 Click **OK** to close the Settings Editor.



- 6 In the RequestDetailDefault list, click the check box for **Tier** breakdowns.
- 7 Click **Save** to save your settings, or **Cancel** to discard any changes.

### In the text editor:

```
RequestDetailRules = {  
  /.*\//transfer\-.*\.jsp$/ : ("ComponentTechnologyBreakdown"),  
  /.*\//login\.jsp$/ : ("TierBreakdown", "ApplicationBreakdown"),  
  "/index.do" : ("ServerBreakdown"),  
};
```

```
RequestDetailDefault = ("TierBreakdown");
```

## Advanced settings

Use the Advanced tab of the Configuration Category Editor for the Nexus recording settings to configure several additional collection settings.

Table 3. Advanced Nexus Recording settings.

Setting	Value
Collector Discovery Interval	The interval at which periodic metric collectors discover changes to the application server structure such as new applications, in seconds. <b>NOTE:</b> Only an integer value is permitted. The default is: <code>CollectorDiscoveryInterval = 300;</code>
Time Slice Size	The unit size in seconds. Only used with the max samples per time slice setting in the periodic metric collector configuration files. <b>NOTE:</b> Only an integer value is permitted. The default is: <code>TimeSliceSize = 300;</code>
Max Separation Value Size	The maximum size of request parameters that are read for separating requests. <b>NOTE:</b> The maximum separation value size is 999. The default is: <code>MaxSeparationValueSize = 32;</code>
Max Trace Value Size	The maximum value size for collected single trace parameter details. For more information, see <a href="#">Setting maximum display of characters for single trace parameters values</a> on page 22.
Trace Parameter Exclusions	The exclusion list for request parameters that are considered sensitive and therefore should be ignored when collecting request traces. <b>NOTE:</b> This setting has no effect on request separation. This list may contain strings or regular expressions. The default values include regular expressions for name, address, password, and other common sensitive parameters.
Incomplete Request Timeout	The incomplete request timeout, in seconds. <b>NOTE:</b> Only an integer value is permitted. The default is: <code>IncompleteRequestTimeout = 120;</code>
Live Object Count Limit	The number of live objects that agents can track. For more information, see <a href="#">Setting memory usage for object tracking</a> on page 23.
Live Object Lifespan Limit	The maximum amount of time an agent tracks live objects. For more information, see <a href="#">Setting memory usage for object tracking</a> on page 23.

## Setting maximum display of characters for single trace parameters values

Sets the maximum value size for collected single trace parameters details. Some parameters may contain a lot of information, and in some cases, not all the information may be useful to view. You can reduce the amount of information displayed in the value field.

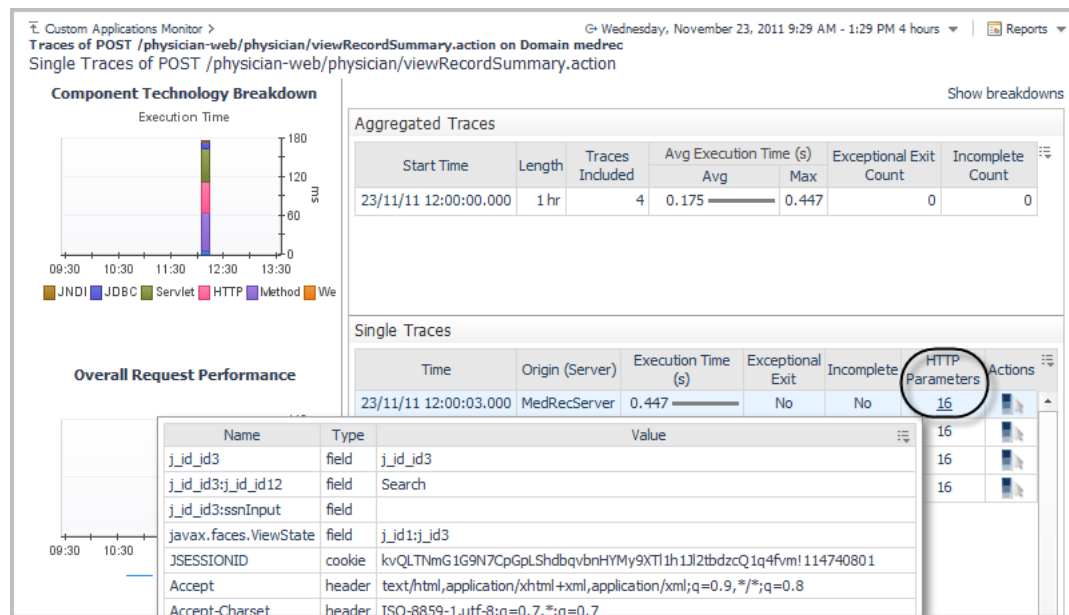
**CAUTION:** The higher the `MaxTraceValueSize` value, the more information saved to the database, and the higher the impact on performance overhead.

The default setting is: `MaxTraceValueSize = 128.`

To collect single trace parameter details, enable the **Collect All Parameters** option in the Application Servers Monitor > Requests view > Action column > Collect Traces dialog box.

For more information, see the [Monitoring Requests](#) section in the *Foglight for Application Servers User Guide*.

Figure 3. The following is an example of an HTTP Parameter Value:



## Setting memory usage for object tracking

Sets the maximum amount of time an agent tracks live objects. Changing this value to a higher value allows more time to track and therefore, provides a better opportunity to identify true leaks in your environment.

**CAUTION:** The higher the `LiveObjectLifespanLimit` value, the more memory used and the higher the impact on performance overhead.

The default setting is:

```
LiveObjectLifespanLimit = 900;
```

In addition to the `LiveObjectLifespanLimit`, you can also limit the number of live objects that agents can track. Increasing this value allows the agent to track more live objects concurrently, but uses more memory in the application server process. Decreasing this value makes it more likely that the agent will expire the live object before it is collected, but uses less memory.

The default setting is:

```
LiveObjectCountLimit = 524288;
```

## Configuring APM URL transformation

Foglight for Java EE Technologies and Foglight for Microsoft .NET can transform Java or .NET transaction URLs for use with the Foglight APM Transactions dashboard. The APM URL Transformation options control the following:

- Whether APM breakdown request URL transformation rules are used
- The transformation rules that determine how Java or .NET request samples are grouped into APM transactions
- How many transactions are created from the transformed requests per collection

Prerequisites:

- At least one of:

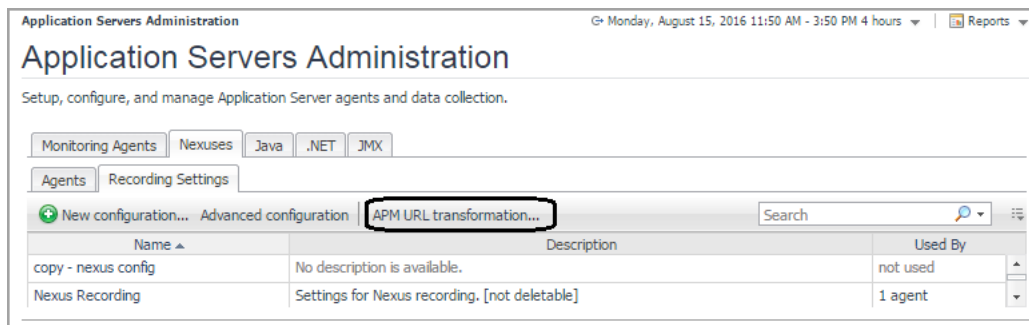
- Foglight for Microsoft .NET, version 5.9.1 or later
- Foglight for Java EE Technologies, version 5.9.2 or later
- And either:
  - Foglight for Application Operations, version 5.9.0 or later, installed on a Foglight Management Server

Or

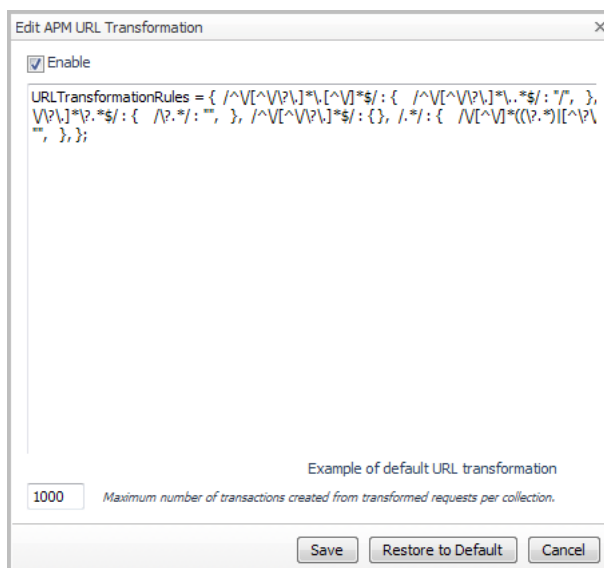
- Foglight APM for Real User Experience, version 5.9.0 or later

### To configure the APM URL transformations:

- 1 On the navigation panel, under Dashboards, click **Application Servers > Administration**.
- 2 On the Application Servers Administration dashboard, click the **Nexuses** tab.
- 3 On the Nexuses view, click the **Recording Settings** tab.



- 4 In the Recording Settings view, click **APM URL transformation**.



APM URL transformation is enabled by default. This is to ensure that the APM > Transactions and the APM > Response Time Breakdown Explorer dashboards include data from Foglight for Java EE Technologies or Foglight for Microsoft .NET by default.

- 5 If you do not want Java or .NET data to appear in the APM dashboards, clear the **Enable** check box and click **Save**.
- 6 Type the URL transformation rules in the text box. The rules follow the same logic as described in [Setting rules for transforming URLs](#) on page 15.

By default (using the pre-set rules), a transaction is created for every folder.



**TIP:** If you are uncertain about how to configure these rules, click **Example of default URL transformation** to open a default example.

- 7 Adjust the number of transactions created from transformed requests for each collection by typing a value in the **Maximum number of transactions created from transformed requests per collection** box.

The default value is 1000.

- 8 Click **Save**.

After the next collection cycle, Java or .NET transactions appear on the APM dashboards according to the configured transformation rules.

For more information about the APM dashboards, see the documentation included with Foglight for Application Operations or Foglight APM for Real User Experience.

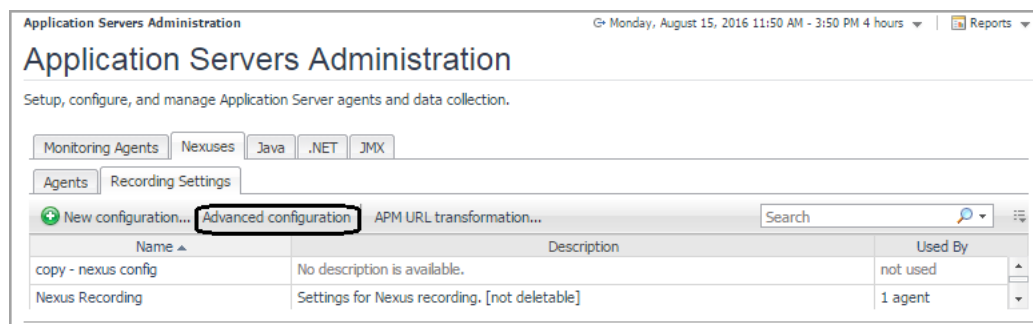
## Managing advanced configuration settings for all Nexuses

All Nexuses use the advanced configuration settings available from the Nexus Administration page .

**CAUTION:** Do not change these settings unless instructed to do so by Quest Support.

**To access the advanced settings:**

- 1 On the navigation panel, under Dashboards, click **Application Servers > Administration**.
- 2 On the Application Servers Administration dashboard, click the **Nexuses** tab.
- 3 On the Nexuses view, click the **Recording Settings** tab and click **Advanced configuration**.



The Nexus Advanced Configuration page opens.

- 4 Click **Show fully qualified names** to show the full path to the file, relative to the Nexus installation folder.
- 5 Click the name of a file to open a Configuration Category Editor for that file.

**TIP:** You can reset these settings to the original defaults by selecting the files you want to revert and clicking **Reset to factory defaults**. Any changes you have made are discarded.

# Managing Actions

The Application Servers > Manage Actions dashboard allows you to use actions to gather additional information from your monitored environment.

## To access the Manage Actions dashboard:

- On the navigation panel, under Dashboards, click **Application Servers > Nexus > Administration > Manage Actions**.

## Application server actions

Use the Manage Actions dashboard to create actions to integrate with other Foglight cartridges or systems. The following default actions are available:

**Table 4. Default actions for integrating with other Foglight systems.**

Action	Description
FxV: Search Hits (request UUID)	Search hits in FxV using the request UUID.
FxV: Search Hits (request type, JSESSIONID)	Search hits in FxV using request type and JSESSIONID around the time the trace occurred <sup>1</sup> .
FxV: Search Hits (request type)	Search hits in FxV using request type around the time the trace occurred <sup>1</sup> .
FxV: Explore Session (JSESSIONID)	Explore session in FxV using JSESSIONID around the time the trace occurred.
FxV: Search Hits (request type, parameter)	Search FxV using request type, parameter name and value around the time the trace occurred <sup>1</sup> .

**IMPORTANT:** Do not edit any of these default actions.

These default actions are specific to Foglight Experience Viewer (FxV) integration. For more information about integrating with FxV, see [Managing Request Integration with Foglight Experience Viewer](#) on page 29.

You can create your own actions using a Groovy Script, as described in [Creating actions](#).

## Creating actions

You can use actions to collect additional information about your monitored environment. Actions are defined using Groovy scripts, and can apply to specific contexts, such as trace parameters, requests, or traces.

### To create an action:

- On the navigation panel, under Dashboards, click **Application Servers > Nexus > Administration > Manage Actions**.
- Click **Add**.

- 3 In the **Menu Item Text** box, type the name you want to display in the action menu.
- 4 Optional — in the **Description** box, type a brief description for this action.
- 5 Select the **Open in new window** check box if you want the action to open in a new browser window.

**NOTE:** This action varies depending on the web browser options you have set. You can have your options set to open a new window or a new tab in the current session.

- 6 In the **Action Groovy Script** box, type the Groovy script you want to apply.

This Groovy script is used to return an HTTP URL string that opens either a new web browser window or a Foglight for Application Servers WCF Iframe view.

For example, to open our company web page, type:

```
return "http://www.quest.com/";
```

- 7 In the **Apply To** selection, select one or more of the following contexts:

- **Request** — Adds an action to the Request tab Action
- **Trace Parameter** — Adds an action to the Single Trace HTTP Parameters table
- **Trace** — Adds an action to the single trace Action column menu

- 8 Optional — in the **Menu Item Display Groovy Script** field, enter a Groovy script that evaluates to a boolean value. Users can use this to add extra logic to determine if an action should be displayed or not (for example, checking if FxV Integration is configured). If you leave this box blank, the menu item is always displayed.

The following example shows the action only if the request is not an HTTP request:

```
return !appserverAction_isHTTPRequest(@requestName);
```

- 9 Click **OK**. The dialog box closes and the Manage Actions dashboard refreshes.

# Using variables in action Groovy scripts

The following table outlines some of the available action variables you can use when writing your custom Groovy scripts, and to which action menus the variables are applicable.

**Table 5. Variables available for use in custom Groovy scripts.**

Variable	Description	Single Trace	Request	Single Trace Parameter
@requestType	Request Type.	Y	Y	Y
@trace	Request Trace value.	Y	N	Y
@requestName	The name of the request.	Y	Y	Y
@specificTimeRange	A specific time range (the time range of the view).	Y	Y	Y
@traceParameters	The name-value pair of the parameters of the single trace.	Y	N	Y
@traceStartTime	The time when the trace started.	Y	N	Y
@parameterType	The type of parameter of a single trace. For example type a string for a field, cookie, or header.	N	N	Y
@parameterName	The name of the selected parameter.	N	N	Y
@parameterValue	The value of the parameter.	N	N	Y

## Persistent scripts

The following table outlines some of the helper functions that can be used in Groovy scripts:

**Table 6. Helper functions available for Groovy scripts.**

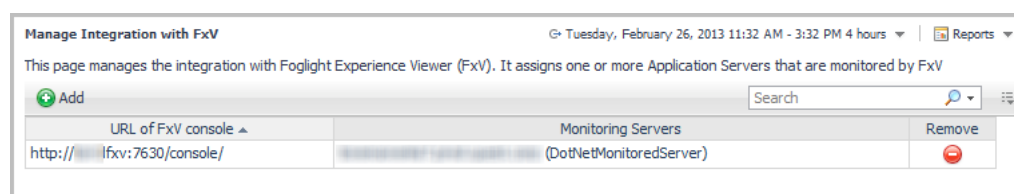
Persistable Script	Type	Description
appserverAction_getFxVBaseURLforRequest(RequestType requestType)	String	Returns the FxV Server console URL of the request type.
appserverAction_getFxVBaseURLforTrace(RequestTraceValue trace)	String	Returns the FxV Server console URL of the trace
appserverAction_getFxVBaseURLforTrace(RequestTraceValue trace)	String	Returns the FxV Server console URL of the trace
appserverAction_isHTTPRequest(String requestTypeName)	Boolean	Returns true if the request name is an HTTP request
appserverAction_getTraceParametersByName(ArrayList parameters, String parameterName)	ArrayList	Returns one or more parameters of the specified name from the list
appserverAction_containsTraceParameter(ArrayList parameters, String parameterName)	Boolean	Returns true if the list of parameters contains the specified name
appserverAction_getTraceParameterType(String parameter)	String	Returns the type of the parameter
appserverAction_getTraceParameterName(String parameter)	String	Return the name of the parameter
appserverAction_getTraceParameterValue(String parameter)	String	Return the value of the parameter

# Managing Request Integration with Foglight Experience Viewer

Foglight Experience Viewer (FxV) is a network appliance that passively monitors real-time network traffic to measure the performance of web-based applications and how that performance impacts the user experience.

The **Manage Integration with FxV** dashboard allows you to configure the integration of Foglight Experience Viewer with Foglight for Java EE Technologies and Foglight for Microsoft .NET.

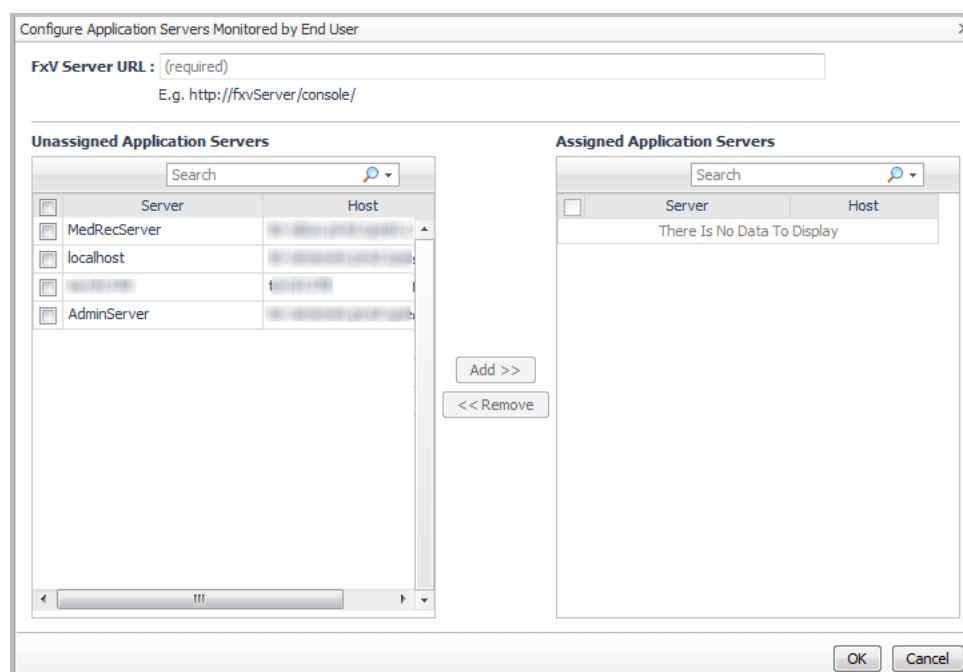
**Figure 4.** Use this dashboard to assign application servers that the FxV monitors



Integrating with Foglight Experience Viewer allows you to associate requests or single trace data to corresponding hits or session data available in FxV.

## **To assign an application server monitored by Foglight Experience Viewer:**

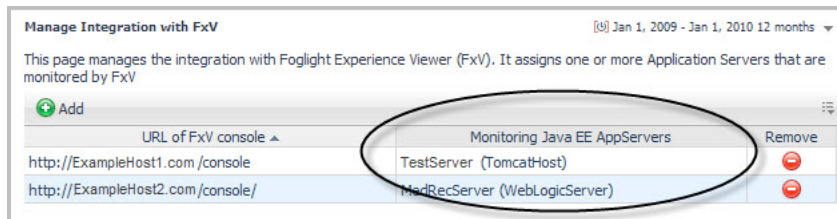
- 1 On the navigation panel, under Dashboards, click **Application Servers > Nexus > Administration > Manage Integration with FxV**.
- 2 On the Manage Integration with FxV dashboard, click **Add**.



- 3 In the FxV Server URL box, type the URL for the FxV server.  
For example: `http://fxvServer/console/`
- 4 In the Unassigned Application Servers table, select the server or servers that the specified FxV server monitors and click **Add**.
- 5 Click **OK**.  
The Manage Integration with FxV dashboard refreshes to include your latest additions.


### **To change which application server is monitored:**

- 1 In the Manage Integration with FxV table, click the name of the server in the **Monitoring Servers** column.



- 2 To add a server to monitor, in the Unassigned Application Servers table, select a server and click **Add**.
- 3 To remove a server, in the Assigned Application Servers table, select the server and click **Remove**.
- 4 Click **OK**.

### **To remove an FxV server integration:**

- 1 In the Manage Integration with FxV table, under the **Remove** column, click Remove  for the server you want to remove.  
A confirmation message box opens.
- 2 Click **OK**.

## Viewing request data in FxV

After the Integration with FxV has been set up, you can run FxV-related actions in the Application Servers Monitor dashboard Requests tab.

### **To view FxV request data:**

- 1 On the navigation panel, under Dashboards, click **Application Servers > Monitor**.
- 2 Click the **Requests** tile.
- 3 Expand the aggregated request type and select an application server request in the **Request Types** table.  
If FxV is also monitoring the selected application server, the Actions menu includes an option: FxV: Search Hits (request type).

Request		System	Calls		Response Time (s)				Diagnose		
Name	Health		Completed	Incomplete	Current	Avg	Max	Total	Exceptional Exits	Traces	Actions
GET /ABConcurrencyTester_DL/Fac	✓	win2k3-32Node...	21	0	0.019	0.024	0.111	0.494	0	5	[Action Icon]
GET /ABConcurrencyTester_DL/F	✓	server 1 (WebS...	21	0	0.019	0.024	0.111	0.494	0	5	[Action Icon]
GET /instrumentation/PerimeterTest	✓	default@tony-...	25,675	0	0.059	0.059	8.638				[Action Icon]
JESHSimpleMessageBeanOutputTop	✓	jfeng-2fc4ae87...	6	0	0.000	0.000	0.000				[Action Icon]
JESHSimpleMessageBeanOutputT	✓	server 1 (WebS...	6	0	0.000	0.000	0.000				[Action Icon]
POST /instrumentation/PerimeterTe	✓	default@tony-...	6,419	0	0.077	0.077	0.635	493.163	0	0	[Action Icon]

**NOTE:** This list may vary if additional actions for the Requests have been created using the Application Servers > Administration > Manage Actions dashboard. For more information, see [Creating actions](#).

- Click the Action icon for the request you want to investigate.
- Select **FxV: Search Hits (request type)**. The hits results display.

Search returned 35 hits in 19 sessions.

Hide Search Conditions | Load Saved Search: -- Choose One -- | Saved Searches

**Time Conditions**  
Searching for hits that occurred between Mon 11/29/10 10:04 PM and Tue 11/30/10 2:04 AM.

**General Conditions**  
HTTP Method = GET; Path = /asp/ReqParamTestServlet

**Classification Conditions**  
Contains FxV Client-Side Instrumentation = No

**HTTP Header/Field Conditions**  
(none)

**Custom Field Conditions**  
(none)

**Metric Update Conditions**  
(none)

**Status Conditions**  
(none)

**Hit Filter Conditions**  
(none)

**Timing Constraints**  
(none)

Search | Reset | Save Search As: [ ] | Save

Search Result View: Hits | Matching Hits: 35, Sessions with Matching Hits: 19 | Export Results (CSV)

Session	Status	Class	Username	Response Time	Hit URL	HTML Title	Client IP	Time	Code
...	...	...	...	24	...	...	...	Tue 11/30/10 1:56:31 AM	200
...	...	...	...	1	...	...	...	Tue 11/30/10 1:56:32 AM	200
...	...	...	...	6	...	...	...	Tue 11/30/10 1:56:32 AM	200
...	...	...	...	8	...	...	...	Tue 11/30/10 1:56:32 AM	200
...	...	...	...	0	...	...	...	Tue 11/30/10 1:56:32 AM	200
...	...	...	...	19	...	...	...	Tue 11/30/10 1:56:32 AM	200
...	...	...	...	4	...	...	...	Tue 11/30/10 1:57:55 AM	200
...	...	...	...	1	...	...	...	Tue 11/30/10 1:58:02 AM	200
...	...	...	...	1	...	...	...	Tue 11/30/10 1:58:02 AM	200
...	...	...	...	1	...	...	...	Tue 11/30/10 1:58:02 AM	200
...	...	...	...	1	...	...	...	Tue 11/30/10 1:58:03 AM	200
...	...	...	...	1	...	...	...	Tue 11/30/10 1:58:03 AM	200
...	...	...	...	1	...	...	...	Tue 11/30/10 1:58:03 AM	200
...	...	...	...	1	...	...	...	Tue 11/30/10 1:58:03 AM	200
...	...	...	...	0	...	...	...	Tue 11/30/10 1:58:03 AM	200
...	...	...	...	1	...	...	...	Tue 11/30/10 1:58:03 AM	200

For information on how to use the Foglight Experience Viewer (FxV), see the [Foglight Experience Viewer User and Reference Guide](#).

## Viewing sessions of single traces in FxV

From the Application Servers Monitor dashboard, you can run an FxV action on a single trace to find the corresponding session in the FxV Session Explorer view.



### To view a session for a single trace in FxV:

- 1 On the **Application Servers > Monitor > Requests** view, click a trace to view the single trace details.

For detailed information on how to collect single traces, see [Manually Collecting Single Traces](#) in the *Foglight for Application Servers User Guide*.

- 2 In the **Single Traces** table, click an entry in the Action column.



The screenshot shows a table titled "Single Traces" with the following columns: Time, Origin (Server), Execution Time (s), Exceptional Exit, Incomplete, HTTP Parameters, and Actions. The Actions column for the second row is highlighted, and a dropdown menu is open, showing two options: "FxV: Explore Session (JSESSIONID)" and "FxV: Search Hits (request type, JSESSIONID)".

Time	Origin (Server)	Execution Time (s)	Exceptional Exit	Incomplete	HTTP Parameters	Actions
22/10/10 11:55:19.055	MedRecServer	0.060	No	No	17	[Icon]
22/10/10 11:55:19.055	MedRecServer	0.003 *	No	No	17	[Icon] (highlighted)
22/10/10 11:55:24.055	MedRecServer	0.040	No	No	17	[Icon]
22/10/10 11:55:25.055	MedRecServer	0.039	No	No	17	[Icon]
22/10/10 11:55:26.055	MedRecServer	0.000	No	No	17	[Icon]
22/10/10 11:55:27.055	MedRecServer	0.002 *	No	No	17	[Icon]
22/10/10 11:56:51.056	MedRecServer	0.030	No	No	17	[Icon]

- 3 Click **FxV: Explore Session (JSESSIONID)**.

**NOTE:** This menu item appears only if the JSESSIONID parameter was collected for the single trace.

The corresponding hits for the found session are displayed in the FxV browser interface.

## Searching for single trace hits in FxV

From the Application Servers Monitor dashboard Requests view, you can run an FxV action on a single trace to find the corresponding hits in the FxV browser interface, in the same session.

- 1 On the **Application Servers > Monitor > Requests** view, click a trace to view the single trace details.

For detailed information on how to collect single traces, see [Manually Collecting Single Traces](#) in the *Foglight for Application Servers User Guide*.

- 2 In the Single Trace table, click an entry in the action column.

- 3 Click **FxV: Search Hits (request type, JSESSIONID)**.

The corresponding hits in the same session (that is, the session identified by the request type and JSESSIONID parameter) are displayed in the FxV browser interface.

## Searching for hits using HTTP parameters in FxV

From the Application Servers Monitor dashboard Requests view, you can run an action to find the corresponding hits with the same parameter name and value.

### To view FxV hits using HTTP parameters:

- 1 On the **Application Servers > Monitor > Requests** view, select a trace to view the single trace details.
- 2 In the Single Traces table of the Single Traces view, click a trace name.

For detailed information on how to collect single traces, see [Manually Collecting Single Traces](#) in the *Foglight for Application Servers User Guide*.



Custom Applications Monitor > Traces of POST /physician-web/login.action on Domain medrec-fog > Trace Diagnosis

Single Trace: POST /physician-web/login.action

Trace completed successfully in 0.015 seconds.

Actions

Start Time 27/01/12 16:01:27.001

Server medrec-fog-

Related Alarms 0

HTTP Parameters

Name	Type	Value
j_id_jd3	field	j_id_jd3
j_id_jd3;j_id_jd19	field	Submit
javax.faces.ViewState	field	-3795222041;
JSESSIONID	cookie	hG4RPjTb3H6.
Accept	header	text/html,application/javascript
Accept-Charset	header	ISO-8859-1,utf-8;q=0.7,*;q=0.3
Accept-Encoding	header	gzip,deflate
Accept-Language	header	en-us,en;q=0.5
Connection	header	Keep-Alive, TE
Content-length	header	183
Content-type	header	application/x-www-form-urlencoded

Execution Time Breakdown

Component	Technology	Execution Time (s)
JNDI		0.00
Method		0.00
HTTP		0.00

Method List Call Tree SQL

Fast Find: Calls

Expand

Name	Component	Type	Name	Calls	Execution Time (s)				Exclusive Time (s)		Exception (c)
					TOTAL	AVG	MIN	MAX	TOTAL	AVG	
POST /physician-web/login.action	HTTP	n/a		1	0.015	0.015	0.015	0.015	0.000	0.000	

POST /physician-web/login.action

Application physician Type HTTP

Calls 1 Exceptions 0 Incomplete 0

Time (s)

	TOTAL	AVG	MIN	MAX
Execution	0.015	0.015	0.015	0.015
Exclusive	0.000	0.000		

Method Actions

- Show exception message
- Show call path
- Compare all occurrences in call tree

- Click the user icon  to quickly access FxV hits.

Or

In the left-hand column of the Trace Diagnosis view, click an HTTP parameter, if available.

Actions

Start Time 27/01/12 16:01:27.001

Server medrec-fog-

Related Alarms 0

HTTP Parameters

Name	Type	Value
j_id_jd3	field	j_id_jd3
j_id_jd3;j_id_jd19	field	Submit
JSESSIONID	cookie	hG4RPjTb3H6.
Accept	header	text/html,application/javascript
Accept-Charset	header	ISO-8859-1,utf-8;q=0.7,*;q=0.3
Accept-Encoding	header	gzip,deflate
Accept-Language	header	en-us,en;q=0.5
Connection	header	Keep-Alive, TE
Content-length	header	183
Content-type	header	application/x-www-form-urlencoded

FxV: Search Hits (request type, parameter)

- Click **FxV: Search Hits (request type, parameter)**.

FxV hits part of the same HTTP request and having the same parameter are displayed in the FxV browser interface.

For information on how to change the hit search criteria, see the [Foglight Experience Viewer User and Reference Guide](#).

For information about actions, see [Application server actions](#) on page 26.

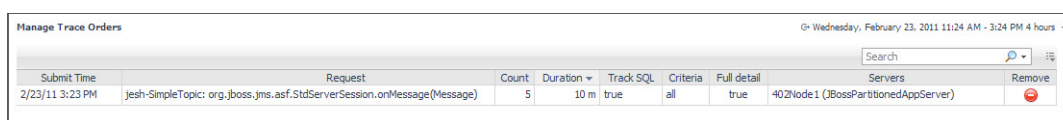
# Managing Trace Orders

Use the **Manage Trace Orders** dashboard to review all outstanding single trace orders. From here you can view, sort, and remove trace orders.


## To access the Manage Trace Orders dashboard:

- On the navigation panel, under **Dashboards**, click **Application Servers > Nexus > Administration > Manage Trace Orders**.

Figure 5. The Manage Trace Orders dashboard.



The screenshot shows the 'Manage Trace Orders' dashboard. At the top, it says 'Manage Trace Orders' and 'Wednesday, February 23, 2011 11:24 AM - 3:24 PM 4 hours'. Below this is a search bar and a table with the following data:

Submit Time	Request	Count	Duration	Track SQL	Criteria	Full detail	Servers	Remove
2/23/11 3:23 PM	jesh-SimpleTopic: org.jboss.jms.asf.StdServerSession.onMessage(Message)	5	10 m	true	all	true	402Node1 (JBossPartitionedAppServer)	

## To sort traces:

- Click the header for any of the columns displayed in the table.

## To remove a trace order:

- In the **Manage Trace Orders** dashboard, click Remove  for the selected trace.

# Adding trace orders

You can add trace orders using the Collect Traces option from the Application Servers Monitor dashboard. For more information, see the [Managing Traces](#) section in the *Foglight for Application Servers User Guide*.

Trace orders that you have added appear in the list on the Manage Trace Orders dashboard until they are complete.

# Reviewing Application Server Metrics

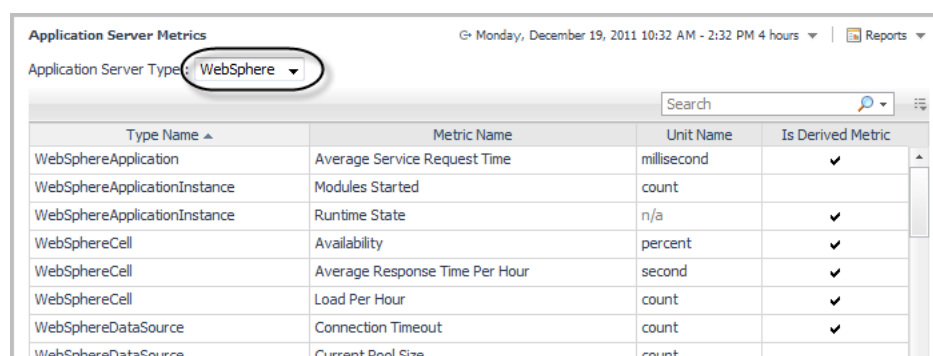
Use the Application Server Metrics dashboard to review a list of available server metrics, including: type names, metric names, descriptions, unit names, and whether a metric is a derived metric.

**NOTE:** This dashboard provides read-only information. You cannot edit the metrics from here.

## To access the Application Server Metrics dashboard:

- On the navigation panel, under Dashboards, click **Application Servers > Nexus > Administration > Metric List**.

Figure 6. The Application Server Metrics dashboard displays.



Type Name	Metric Name	Unit Name	Is Derived Metric
WebSphereApplication	Average Service Request Time	millisecond	✓
WebSphereApplicationInstance	Modules Started	count	
WebSphereApplicationInstance	Runtime State	n/a	✓
WebSphereCell	Availability	percent	✓
WebSphereCell	Average Response Time Per Hour	second	✓
WebSphereCell	Load Per Hour	count	✓
WebSphereDataSource	Connection Timeout	count	✓
WebSphereDataSource	Current Pool Size	count	

Select an application server type from the drop-down list to review the types and metrics available from that application server.

Use the Search box to quickly locate types or metrics.

**TIP:** There are additional columns in this table that are hidden by default. To display them, click the customizer icon (located to the right of the Search box), select the columns from the menu, and click **Apply**.

## We are more than just a name

We are on a quest to make your information technology work harder for you. That is why we build community-driven software solutions that help you spend less time on IT administration and more time on business innovation. We help you modernize your data center, get you to the cloud quicker and provide the expertise, security and accessibility you need to grow your data-driven business. Combined with Quest's invitation to the global community to be a part of its innovation, and our firm commitment to ensuring customer satisfaction, we continue to deliver solutions that have a real impact on our customers today and leave a legacy we are proud of. We are challenging the status quo by transforming into a new software company. And as your partner, we work tirelessly to make sure your information technology is designed for you and by you. This is our mission, and we are in this together. Welcome to a new Quest. You are invited to Join the Innovation™.

## Our brand, our vision. Together.

Our logo reflects our story: innovation, community and support. An important part of this story begins with the letter Q. It is a perfect circle, representing our commitment to technological precision and strength. The space in the Q itself symbolizes our need to add the missing piece—you—to the community, to the new Quest.

## Contacting Quest

For sales or other inquiries, visit [www.quest.com/contact](http://www.quest.com/contact).

## Technical support resources

Technical support is available to Quest customers with a valid maintenance contract and customers who have trial versions. You can access the Quest Support Portal at <https://support.quest.com>.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. The Support Portal enables you to:

- Submit and manage a Service Request.
- View Knowledge Base articles.
- Sign up for product notifications.
- Download software and technical documentation.
- View how-to-videos.
- Engage in community discussions.
- Chat with support engineers online.
- View services to assist you with your product.