



# vFabric Hyperic 4.5

## Administration Guide

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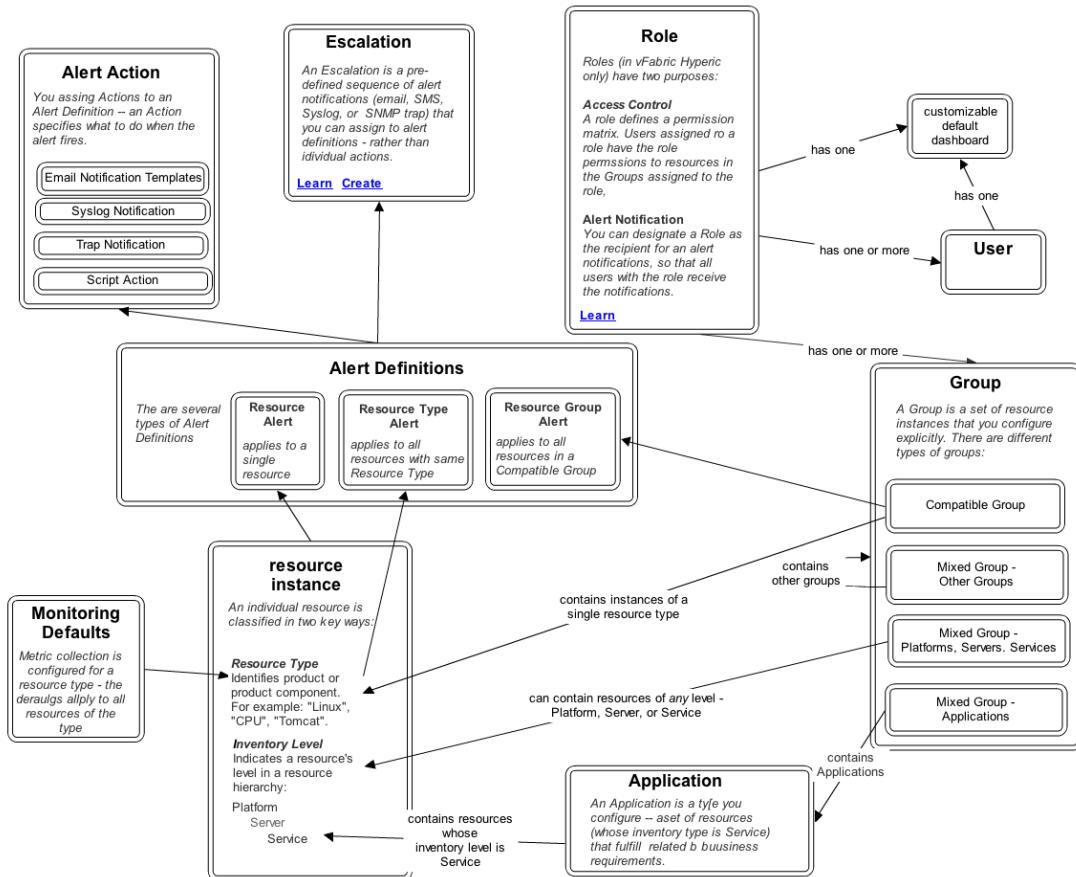
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# 1. Hyperic Monitoring Concepts and Features

These topics describe fundamental Hyperic concepts, features, and key configurable items.

- [Section 1.1, “Hyperic Administration Feature Map”](#)
- [Section 1.2, “Resources, Resource Types and Inventory Types”](#)
- [Section 1.3, “Resource Auto-Discovery Processes”](#)
- [Section 1.4, “Metrics and Metric Collection”](#)
- [Section 1.5, “Alerts and Alert Definitions”](#)
- [Section 1.6, “Log and Configuration Event Tracking”](#)
- [Section 1.7, “SNMP Functionality in Hyperic”](#)
- [Section 1.8, “User Accounts and Roles in Hyperic”](#)

## 1.1. Hyperic Administration Feature Map



## 1.2. Resources, Resource Types and Inventory Types

Topics marked with \* relate to features available only in vFabric Hyperic.

These topics describe the *Hyperic Inventory Model*: how resources are classified by type, and how types relate to each other.

- [Section 1.2.1, “Resources and Resource Categories in Hyperic”](#)
  - [Inventory Type](#)
  - [Resource Type](#)
  - [The Platform-Server-Service Hierarchy](#)
- [Section 1.2.2, “About Platforms, Servers, and Services”](#)
  - [Platforms](#)
  - [Servers](#)
  - [Services and Platform Services](#)
- [Section 1.2.3, “About Applications in Hyperic”](#)
  - [Introduction to Applications in Hyperic](#)
  - [Inventory Tab for an Application](#)
  - [Monitor Tab for an Application](#)
- [Section 1.2.4, “About Groups in Hyperic”](#)
  - [Resource Groups in Hyperic](#)
  - [Compatible Groups](#)
  - [Mixed Groups](#)
  - [Autogroups](#)

## 1.2.1. Resources and Resource Categories in Hyperic

This page describes the two main ways that a individual managed resource is classified in Hyperic inventory: *inventory type* and *resource type*. *Inventory type* relates to a software dependency hierarchy, most notably, Hyperic's *platform - server - service* hierarchy. *Resource type* relates to the "brand" or vendor associated with a resource.

Topics marked with \* relate to features available only in vFabric Hyperic.

- [Inventory Type](#)
- [Resource Type](#)
- [The Platform-Server-Service Hierarchy](#)

### Inventory Type

A resource's *inventory type* is the first level of classification Hyperic applies to resources. Inventory types serve two purposes:

- Resource hierarchy - Several inventory types identify where a resource fits into a resource hierarchy. All Hyperic resources are classified as one of the following inventory types.
  - platform - usually corresponds to a machine running an operating system
  - server - a software product running on an operating system, for instance a database or application server
  - service - an integral component of a platform or server, for instance, a file server mount, database table, or a connection pool.
- Grouped resources - There are two inventory types that correspond to multiple individual resources. You group resources for a variety of reasons: to monitor a set of like or related resources in aggregate; to administer or control like resources at the group level instead of individually; and, in vFabric Hyperic, for resource access control. There are two inventory types that are named sets of other resources:
  - group
  - application

In summary, "inventory type" classifies a resource as a platform, server, service, group, or application. The term "inventory level" refers to inventory types that fit into a hierarchical structure - platforms, servers, and services.

### Resource Type

Each individual resource (every resource that is a platform, server, or service) in Hyperic inventory has a *resource type* that indicates what kind of platform, server, or service it is. For example,

- The resource type of a Windows system (whose inventory type is "platform") is "Win32"; the resource type of a Linux system (whose inventory type is also platform) is "Linux".
- For clarity, Hyperic documentation refers to resource types that correspond to platforms - like "Win32" and "Linux" - as *platform types*.
- The resource type of a JBoss 4.0 instance (whose inventory type is "server") is "JBoss 4.0"; the resource type of a WebLogic 9.1 instance (whose inventory type is also server) is "WebLogic 9.1".

- For clarity, Hyperic documentation refers to resource types that correspond to servers - such as "JBoss 4.0" and "WebLogic 9.1" - as *server types*.
- The resource type of a Jboss entity EJB (whose inventory type is "service") is "JBoss 4.0 Entity EJB"; the resource type of a WebLogic EJB (whose inventory type is also service) is "WebLogic 9.2 Entity EJB".
- For clarity, Hyperic documentation refers to resource types that correspond to services - such as "JBoss 4.0 Entity EJB" and "WebLogic 9.1 Entity EJB" - as *service types*.

In summary, "resource type" classifies a resource as a particular type of platform, server, service.

## The Platform-Server-Service Hierarchy

In Hyperic, platforms, servers, and servers are hierarchically related.

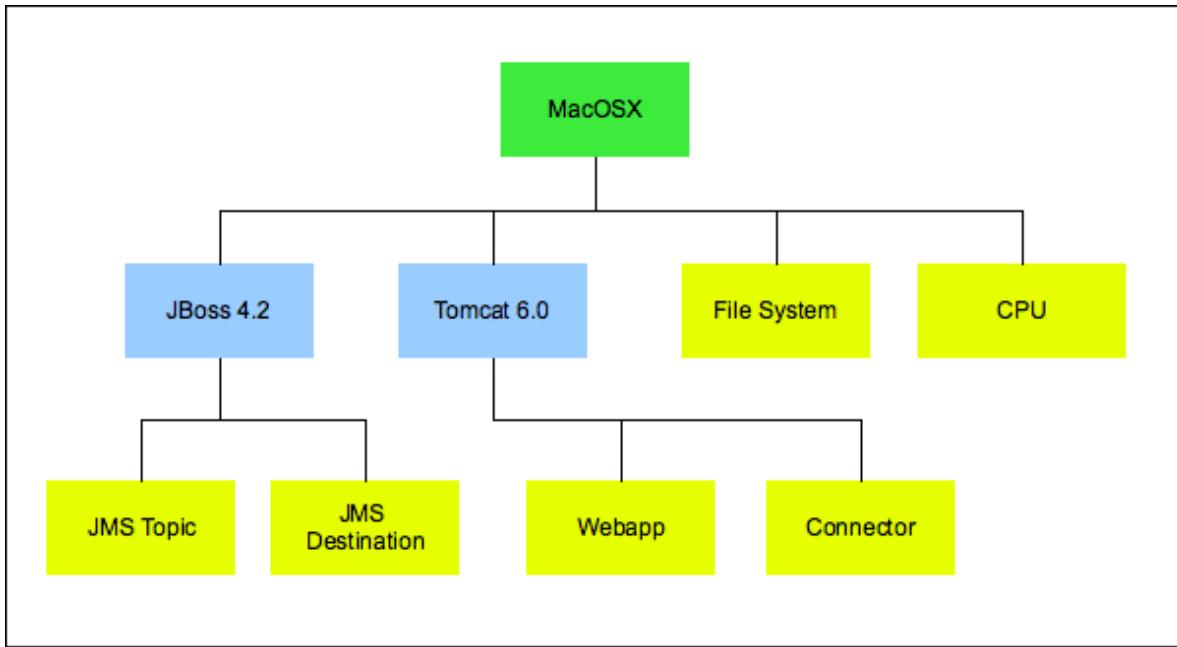
- A platform is usually a machine its operating system, with a Hyperic Agent running on it. There are also platform types for virtual and network hosts.
- A server is a software product that runs on a platform.
- A service is an resource that is integral to, or runs upon, a platform or server. Whether the resource is at the platform or server level, in Hyperic it is a "service". Note, however that services associated with a platform are usually referred to as a *platform services*.

Hyperic auto-discovers most platform, server, and service types and populates the Hyperic database with key information about each discovered item, and its relationship with other resources.

## Graphical View of a Resource Hierarchy

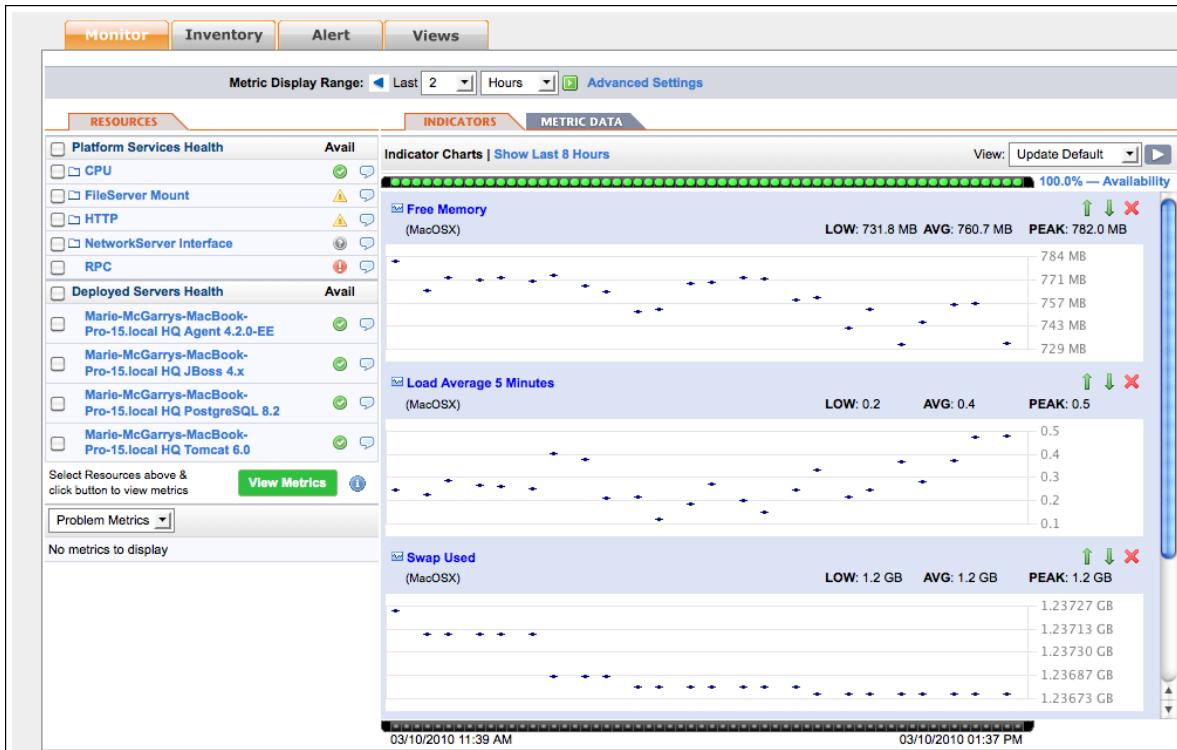
The diagram below illustrates a specific platform-server-service hierarchy. (Only a subset of the servers and services in the hierarchy are shown.) The label for each resource indicates its type. The hierarchy consists of:

- a platform of whose type is "MacOSX"
- two platform services, whose types are "File System" and "CPU"
- two servers, whose types are "JBoss 4.2" and "Tomcat 6.0"
- four services (that run in servers) whose types are "JMS Topic", "JMS Destination", "Webapp", and "Connector".



### Platform Hierarchy In Hyperic User Interface

The screenshot below is the **Monitor** tab for the platform whose hierarchy is partially illustrated in the previous section. Note that the **Resources** panel shows the currently selected resource's immediate "relatives". For the selected platform, the **Resources** panel lists the platform services and the servers that run on the platform.



## 1.2.2. About Platforms, Servers, and Services

Topics marked with \* relate to features available only in vFabric Hyperic.

This page describes the fundamental inventory types in Hyperic: *platforms*, *servers*, and *services* — any individual resource instances has one of these types. For information about inventory types that are configurable collections of other resources — *groups* and *applications* — see [About Groups in Hyperic](#) and [About Applications in Hyperic](#).

- [Platforms](#)
- [Servers](#)
- [Services and Platform Services](#)

### Platforms

There are two major kinds of platforms in Hyperic.

#### Operating System Platforms

An *operating system platform* is a computer and the operating system that runs on it. The Hyperic Agent auto-discovers operating system platform using Hyperic's `system` plugin. You cannot manually add an operating system platform to inventory. Hyperic supports these operating system platform types:

- AIX
- FreeBSD
- HPUX
- Linux
- MacOSX
- Solaris
- Unix
- Win32

#### Virtual and Network Platforms

Hyperic supports a variety of platform types that do not map to an individual physical machine running a traditional operating system. These include:

- Resources that a Hyperic Agent monitors remotely over the network, such as for network hosts and devices,
- Virtual resources such as VMware vSphere hosts and VMs, and
- Distributed sets of resources, such as GemFire Distributed Systems.

The Hyperic Agent does not automatically discover and monitor virtual and network platforms — typically you create such platforms manually (using the **New Platform** command on the **Tools** menu in the **Resource** tab of the Hyperic user interface), or at a minimum, supply resource properties data that enable the agent to manage them. These are the virtual and network platform types that Hyperic supports:

- Cisco IOS
- Cisco Pixos
- GemFire Distributed System
- NetApp Filer
- Network Device
- Network Host
- VMware vSphere Host
- VMware vSphere VM
- Xen Host

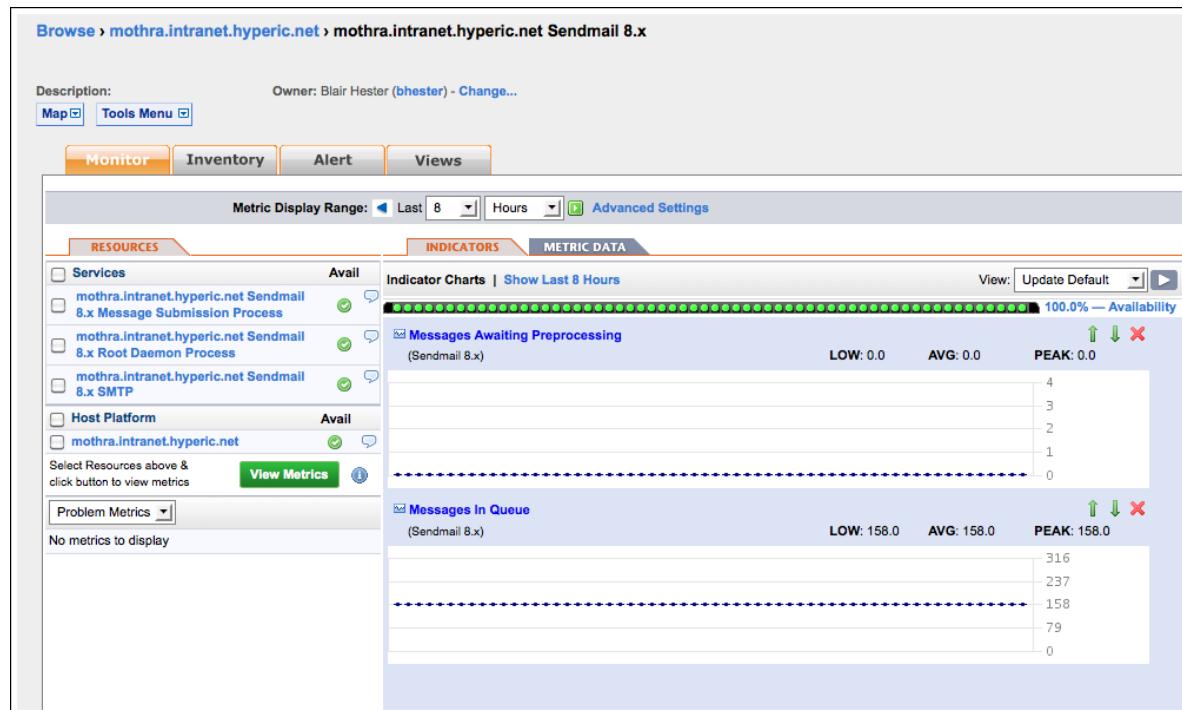
For information about creating an un-discoverable platform, see [Section 5.2.1, “Create a Platform”](#).

## Servers

In Hyperic, a server is software product that runs on a platform. Servers provide a communications interface and perform specific tasks upon request. Examples of server types include Tomcat, JBoss, and Exchange. The **Monitoring Defaults** page in Hyperic's **Administration** tab lists all of the server types that Hyperic supports.

Most server types are auto-discovered by a server type-specific Hyperic plugin. If the plugin that manages a server does not support auto-discovery, or if auto-discovery of a server fails, you may need to manually create a server, as described in [Section 5.2.4, “Create a Server”](#).

The screenshot below shows the **Monitor** tab for a server. The **Resources** panel for the server lists its child services and parent platform.



## Services and Platform Services

In Hyperic, a service is a software component dedicated to a particular task that runs on a server or platform. A service that runs on a server is referred to as a *service*. A service that runs on a platform is referred to as a *platform service*.

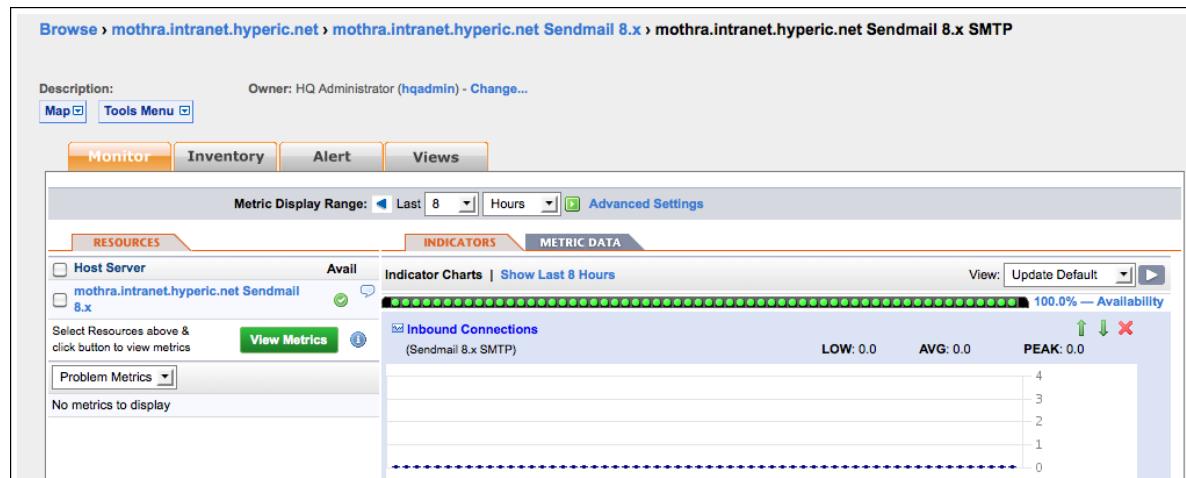
The resource plugin that discovers a platform or server also discovers key services — such as CPUs, network interfaces, file systems, and so on — running on the platform.

In addition, an authorized user can explicitly configure a platform service on a platform to serve as a proxy for a resource the Hyperic Agent can monitor over the network, for example, a DNS or POP3 service. For more information see [Section 5.2.3, “Create a Platform Service”](#)

Services that runs on a server can be either an internal component of the server (for instance, "Weblogic Admin 9.2 Entity EJB service") or a deployed item ("CustomerEntityEJB").

The **Monitoring Defaults** page in Hyperic's **Administration** tab lists the service and platform service types that Hyperic supports.

The screenshot below shows the **Monitor** tab for a service. The **Resources** panel for the service lists its parent server.



### 1.2.3. About Applications in Hyperic

Topics marked with \* relate to features available only in vFabric Hyperic.

In Hyperic, an *application* is an inventory type that is a collection of other inventory resources. This page describes the purpose of applications in Hyperic, and key application views in the Hyperic user interface

- [Introduction to Applications in Hyperic](#)
- [Inventory Tab for an Application](#)
- [Monitor Tab for an Application](#)

**Note:** For information about creating an application in Hyperic, see [Section 4.4, “Create and Manage Applications”](#).

## Introduction to Applications in Hyperic

In Hyperic, an application is a collection of services that together fulfill a single business purpose. This concept reflects the idea that an application, from the business point of view, comprises many different pieces, and those pieces are usually distributed across different platforms and provided by different servers. Thus you can manage your infrastructure from an application — as opposed to a hardware — point of view.

In Hyperic, an application is an inventory type, configured by an authorized user. An application is a set of selected services, usually running in different servers on multiple platforms, that together fulfill a single business purpose. Configuring applications enables you to manage your infrastructure from an application — as opposed to a hardware — perspective.

### Hyperic Visibility into Instrumented Java Applications

The Hyperic Agent can auto-discover and manage Java application services via Model MBeans that adhere to a specified `ObjectName` naming convention and expose a specified set of service data. This enables deeper visibility into application health: you can monitor application services along with the hosting application server and its internal services. For more information, see [Instrumenting Java Applications for Management](#).

**Note:** Although instrumentation provides deeper visibility into Java application health, it is not required for application monitoring.

## Inventory Tab for an Application

The screenshot below shows the **Inventory** tab for the application. Note:

- This the tab you use to add services to an application.
- The "Service Counts" section shows the total number of services in the application, and the number of each type.
- The "Services" section lists key information for each service in the application.
- You can define and view the dependencies between services by clicking **View** button in the "Dependencies" column.

**Browse > Travel Business**

Description: Owner: Don Baron (dbaron) - Change...

**Monitor** **Inventory** **Views**

**General Properties**

Description:	Date Created: 11/06/2008 06:28 AM
Location:	Date Modified: 11/13/2009 08:58 AM
Resource Type: Application	Modified By: Don Baron (dbaron)

**Application Properties**

Application Type: Generic Application	Business Owner:
Engineering Contact:	IT Operations Contact:

**Service Counts**

Total Services: 37			
Services By Type:	Apache 2.0 VHost (4)	NetworkServer Interface (3)	VMware VI3 VM NIC (6)
	HTTP (8)	VMware VI3 VM CPU (5)	JBoss 4.0 JCA Connection Pool (1)
	JBoss 4.0 JMS Destination (2)	JBoss 4.0 JCA Data Source (1)	Tomcat 5.5 Webapp (1)
	MySQL 5.x Table (5)	JBoss 4.0 HQ Internals (1)	

**Services**

Dependencies	Services	EntryPoint	Service Type	Res Type	Host Server	Availability
<input type="checkbox"/>	<input type="button" value="VIEW"/> demo2.hyperic.net HQ Tomcat 5.5 /jboss-lather Tomcat 5.5 Webapp	No	Tomcat 5.5 Webapp	Service	demo2.hyperic.net HQ Tomcat 5.5	
<input type="checkbox"/>	<input type="button" value="VIEW"/> demo2.hyperic.net JBoss 4.0 default DefaultDS JCA Connection Pool	No	JBoss 4.0 JCA Connection Pool	Service	demo2.hyperic.net HQ JBoss 4.x	
<input type="checkbox"/>	<input type="button" value="VIEW"/> demo2.hyperic.net JBoss 4.0 default HQ Internals	No	JBoss 4.0 HQ Internals	Service	demo2.hyperic.net HQ JBoss 4.x	
<input type="checkbox"/>	<input type="button" value="VIEW"/> demo2.hyperic.net JBoss 4.0 default agentScheduleQueue JMS Destination	No	JBoss 4.0 JMS Destination	Service	demo2.hyperic.net HQ JBoss 4.x	
<input type="checkbox"/>	<input type="button" value="VIEW"/> demo2.hyperic.net JBoss 4.0 default DLQ JMS Destination	No	JBoss 4.0 JMS Destination	Service	demo2.hyperic.net HQ JBoss 4.x	
<input type="checkbox"/>	<input type="button" value="VIEW"/> demo2.hyperic.net JBoss 4.0 default DefaultDS JCA Data Source	No	JBoss 4.0 JCA Data Source	Service	demo2.hyperic.net HQ JBoss 4.x	
<input type="checkbox"/>	<input type="button" value="VIEW"/> demo2.hyperic.net Linux Network Interface lo (loopback)	No	NetworkServer Interface	Service	demo2.hyperic.net Linux NetworkServer	
<input type="checkbox"/>	<input type="button" value="VIEW"/> demo2.hyperic.net Linux Network Interface eth1 (ethernet)	No	NetworkServer Interface	Service	demo2.hyperic.net Linux NetworkServer	
<input type="checkbox"/>	<input type="button" value="VIEW"/> demo2.hyperic.net Linux Network Interface eth0 (ethernet)	No	NetworkServer Interface	Service	demo2.hyperic.net Linux NetworkServer	
<input type="checkbox"/>	<input type="button" value="VIEW"/> falcon-win-2003 CPU 0	No	VMware VI3 VM CPU	Service	falcon-win-2003	
<input type="checkbox"/>	<input type="button" value="VIEW"/> falcon-win-2003 Network Adapter 1	No	VMware VI3 VM NIC	Service	falcon-win-2003	
<input type="checkbox"/>	<input type="button" value="VIEW"/> 49er-ubuntu-6 CPU 0	No	VMware VI3 VM CPU	Service	49er-ubuntu-6	
<input type="checkbox"/>	<input type="button" value="VIEW"/> 49er-ubuntu-6 Network Adapter 1	No	VMware VI3 VM NIC	Service	49er-ubuntu-6	
<input type="checkbox"/>	<input type="button" value="VIEW"/> bronco-centos-4.3 CPU 0	No	VMware VI3 VM CPU	Service	bronco-centos-4.3	
<input type="checkbox"/>	<input type="button" value="VIEW"/> bronco-centos-4.3 Network Adapter 1	No	VMware VI3 VM NIC	Service	bronco-centos-4.3	

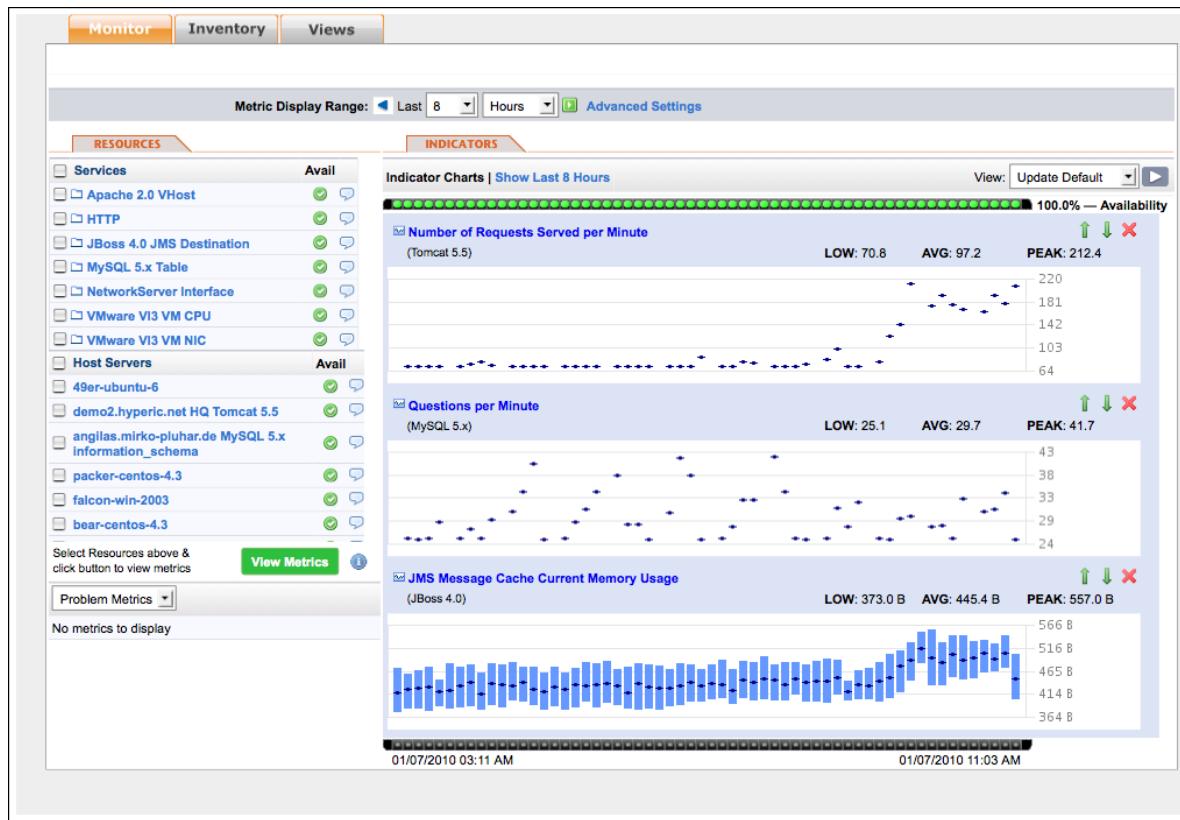
**Groups containing this resource**

Group	Description
<input type="checkbox"/>	<input type="button" value="Group"/>
<input type="checkbox"/>	<input type="button" value="Group of Apps"/>

## Monitor Tab for an Application

The screenshot below shows the **Monitor** tab for an application. Note that:

- The **Resources** panel on the left side of the page lists the services in the application, grouped by type.
- The **Indicator** panel charts the aggregated values for selected metrics that are available for the services in the application and the servers where they run. The user that configures the application can choose the metrics to display as indicators.



### 1.2.4. About Groups in Hyperic

Topics marked with \* relate to features available only in vFabric Hyperic.

In Hyperic, a *group* is an inventory type that is a collection of other inventory resources. This page describes the purpose of groups in Hyperic and different types of groups you can create.

- [Resource Groups in Hyperic](#)
- [Compatible Groups](#)
- [Mixed Groups](#)

## Resource Groups in Hyperic

In the Hyperic inventory model, a group is named set of other inventory resources. Grouping resources is useful for:

- **Monitoring a set of homogeneous or related resources in aggregate** - Groups enable role-specific monitoring views, or views that reflect the purpose or business need that the set of resources satisfy. In an environment with thousands of resources, viewing availability and performance data at the group level reduces the clutter in the user interface.
- **Automating resource operations and control** — You can perform control actions on a group of like resources with a single command.
- **Controlling access to resources\*** — Groups are fundamental to vFabric Hyperic's role-based access control. A Hyperic role specifies permissions to the resources in the groups associated with the role. Resources can only be associated with a role at the group level.

**Note:** When you create a group in vFabric Hyperic, you can designate it as "private". Private groups are invisible to other users, including admin users. You can share a private group by associating it with a role.

## Compatible Groups

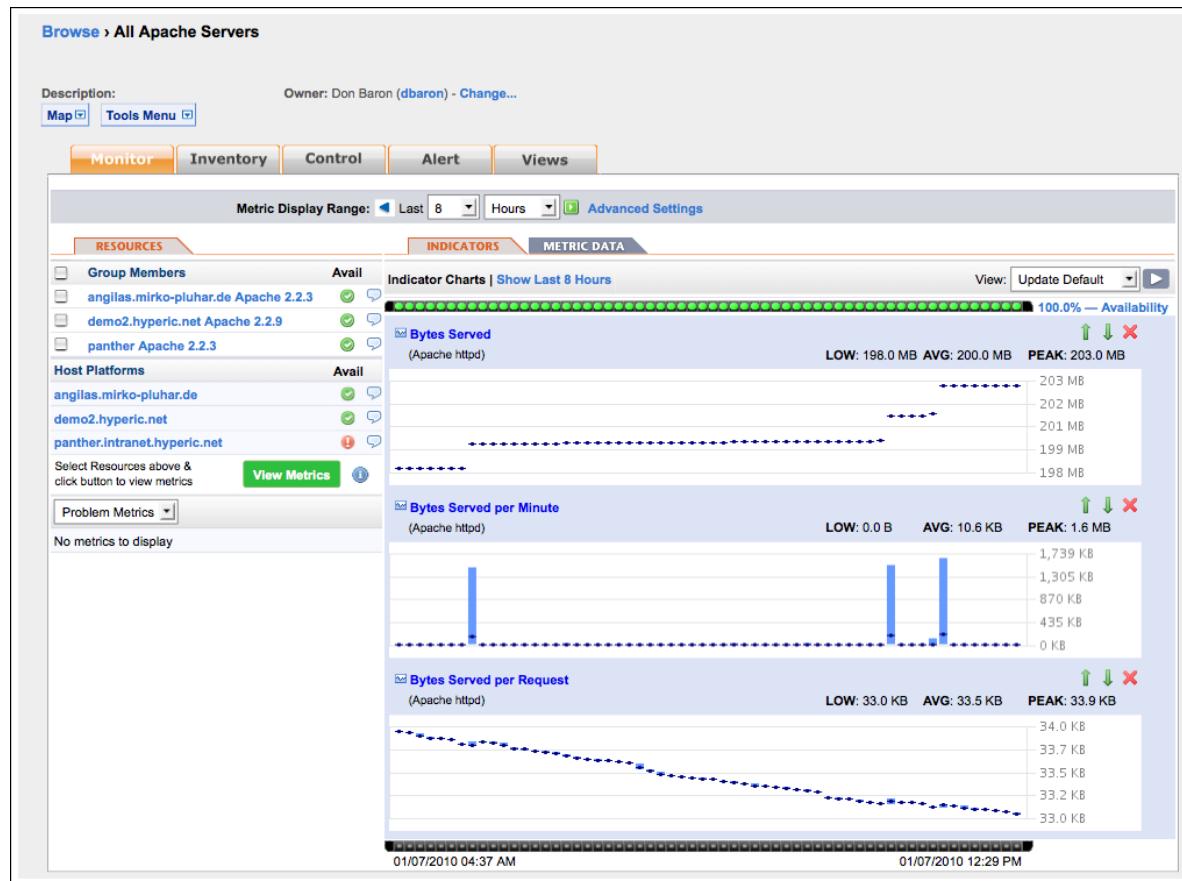
A *compatible group* is a user-configured set of inventory items of the same type, for example "JBoss 4.x" servers, or "Linux" platforms.

Using compatible groups, you can ease the effort for operations tasks for a large population of like resources - you can perform the same control action on all members of a compatible group with a single command, on a scheduled or ad hoc basis.

Compatible groups enable richer monitoring. For instance, you can view metrics in aggregate across some or all resources of the same type. In vFabric Hyperic, you can set alerts on compatible groups. Group alerts fire based on the percentage or number of members that meet an alert condition.

The screenshot below is the **Monitor** tab for a compatible group. Note:

- The **Indicators** panel charts the aggregate values for metrics across all group members.
- The **Resource** panel lists the member of the group, and the platforms that host group members.
- The **Control** tab is present, because the selected group supports control actions.
- The **Alert** tab is present, because vFabric Hyperic supports alerts on compatible groups.



## Mixed Groups

*Mixed groups* contain inventory resources that are of different types.

Mixed groups are useful in implementing access control policies - for instance, for a set of resources from the same vendor, or that are hosted for a particular customer. Mixed groups do not have a common measurement and control profile. The metrics available naturally vary for different types of resources for instance, you monitor free memory for a CPU, but not for a database table. For similar reasons, mixed groups do not support group control actions.

There are three basic sub-types of mixed groups, which vary in terms of their membership. When you browse mixed groups in Hyperic, the "Group Type" column shows each group's sub-type:

- *Mixed Group - Platforms, Servers, & Service.* If your service level agreements vary by customer, you could use configure this sort of mixed group to contain all of the resources hosted for CustomerA, and name it accordingly. The "CustomerA" group might include multiple Linux platforms, each running Tomcat servers and a variety of deployed EJBs and servlets.
- *Mixed Group - Groups.* This type of mixed group, a kind of "supergroup", is made up other groups. For example, a regional manager might use a mixed group that contains many customer-specific groups (like the "CustomerA" group above) to monitor availability and other metrics from a territory perspective.
- *Mixed Group - Applications* - This type of mixed group is made up of multiple applications. For example, a line-of-business manager might want to assess and monitor operations at the product line level.

The following screenshot is the **Inventory** page for a mixed group. Note that no **Monitor** or **Control** or **Alert** tab is present, because these functions are not supported for a mixed group.

The screenshot shows the 'Customer Support West Group' page in the Hyperic interface. At the top, there are links for 'Browse' and 'Customer Support West Group', and a 'Return to JBoss Group' link. Below this, the 'Description' is listed as 'All resources for west coast ....' and the 'Owner' is 'System User (admin)'. A 'Tools Menu' dropdown is shown. The main content area has tabs for 'Inventory' (which is selected) and 'Views'. Under 'General Properties', the 'Description' is 'All resources for west coast ...', 'Location' is blank, 'Resource Type' is 'Group', and the 'Date Created' is '12/16/2008 11:15 AM'. The 'Modified By' is 'System User (admin)' and the 'Date Modified' is '02/11/2010 11:47 AM'. There is an 'EDIT...' button. The next section, 'Resources - Platforms, Servers & Service resource types.', shows a table with 7 items. The table has columns for 'Name', 'Type', 'Description', and 'Availability'. The items listed are:

Name	Type	Description	Availability
angilas.mirko-pluhar.de	Linux	Debian 4.0	✓
bear.intranet.hyperic.net	Linux	CentOS 4.3	✓
demo2.hyperic.net	Linux	Red Hat Enterprise Linux 5	✓
demo2.hyperic.net HQ JBoss 4.0	JBoss 4.0		✓
demo2.hyperic.net MySQL 5.x hqdb	MySQL 5.x		✓
demo2.hyperic.net MySQL 5.x test	MySQL 5.x		✓
dolphin.intranet.hyperic.net	Linux	CentOS 4.2 (VM Guest of <a href="/Resource.do?eid=1:10510">esx2.intranet.hyperic.net</a>)	✓

At the bottom of this section are buttons for 'ADD TO LIST...' and 'REMOVE FROM LIST'. The 'Total: 7' and 'Items Per Page: 15' are also shown. The final section, 'Roles Assigned To', lists two roles:

Name	Description
ITCTier1SupportRole	ITConvergence Tier1 Support
asmorrison1 Role	

At the bottom of this section are buttons for 'ADD TO LIST...' and 'REMOVE FROM LIST'. The 'Total: 2' and 'Items Per Page: 15' are also shown.

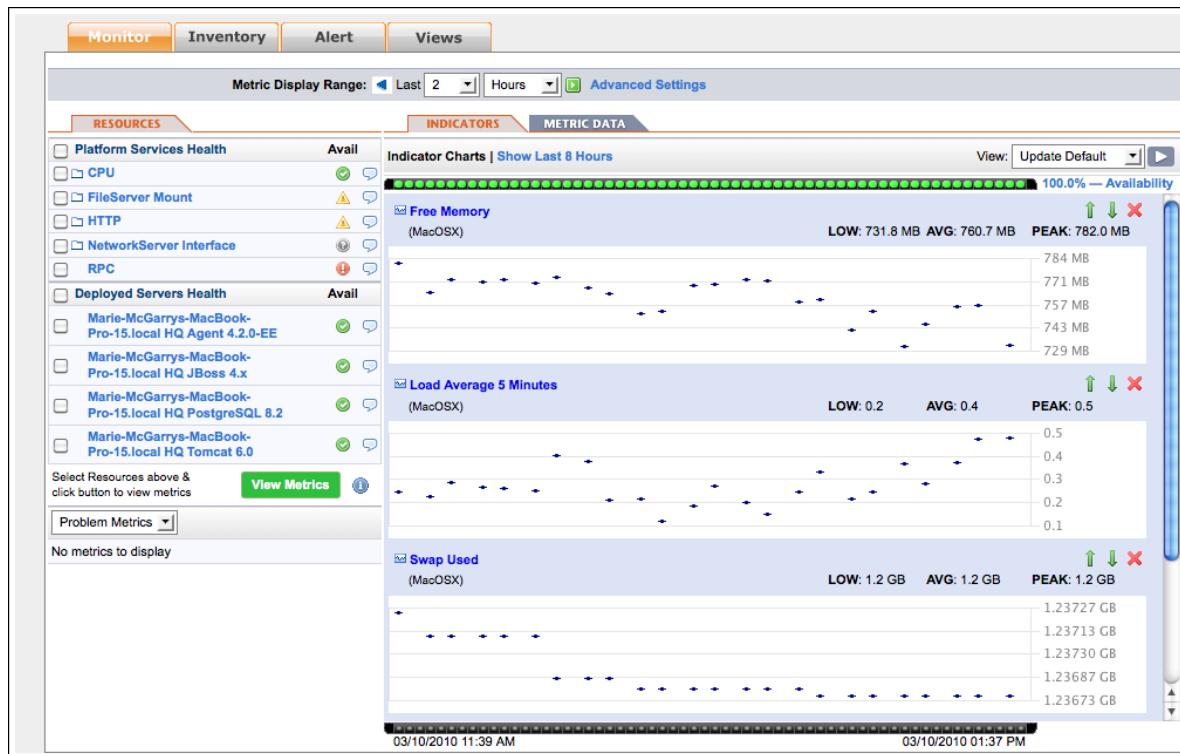
## Autogroups

An *autogroup* is a set of resources of the same type with the same parent resource. As the term implies, an autogroup is not explicitly configured. HQ automatically creates an autogroup to contain all of the resources of the same type on the same platform or server. An autogroup is named for the type of resources it contains. For instance, an autogroup that contains the CPUs on a platform is called "CPU".

### View a List of Autogroups on a Resource

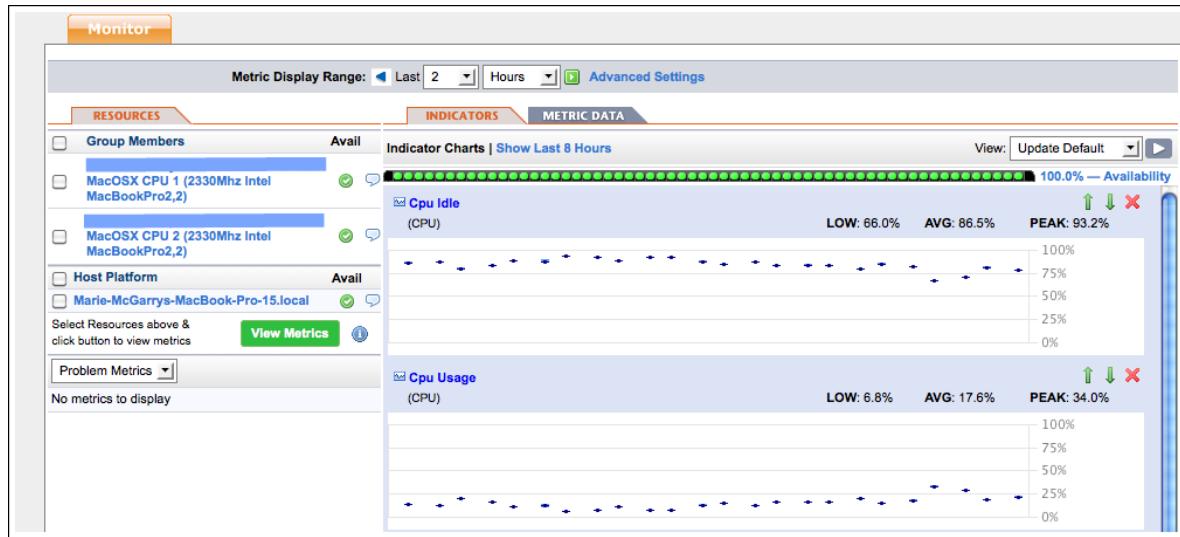
You can see the autogroups on a resource on its **Monitor** tab. This is the only way to see and navigate to an autogroup and its member resources. An autogroup name is only unique in the context of its parent resource.

The name of the autogroup is prefixed with a blue folder-like icon . In the screenshot below, there are four autogroups in the "Platform Services" section: "CPU", "FileServer Mount", "HTTP", and "NetworkServer Interface". The Availability icon for an autogroup indicates the availability of the group.



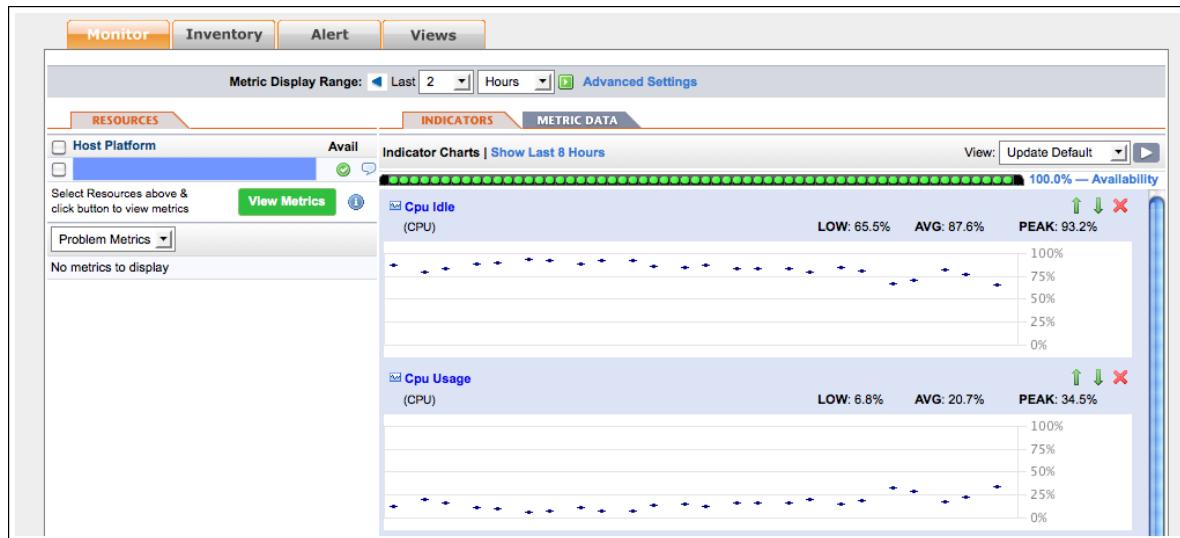
### View Monitor Tab for an Autogroup

When you click an autogroup in its parent's **Resources** panel, the **Monitor** tab for autogroup appears. The **Resources** panel lists the individual resources in the group, and indicator metrics are shown for the group as a whole.



### View Monitor Tab for a Member of an Autogroup

When you click an resource name in **Resources** panel for the parent autogroup, the **Monitor** tab for that resource appears, and indicator metrics are shown for that resource.



## 1.3. Resource Auto-Discovery Processes

Topics marked with\*relate to features available only in vFabric Hyperic.

- [Section 1.3.1, “Hyperic Auto-Discovery Processes”](#)
- [Section 1.3.2, “About Auto-Inventory IDs and InstallPath”](#)
- [Section 1.3.3, “What the Agent Can and Cannot Discover”](#)
- [Section 1.3.4, “How Discovered Resources Get into Hyperic Inventory”](#)
- [Section 1.3.5, “What to Do After Adding New Resources to Inventory”](#)

### 1.3.1. Hyperic Auto-Discovery Processes

Most resources are automatically discovered by the Hyperic Agent running on a platform. The agent scans a platform to discover new resources, and resources whose properties have changed since the last scan. For instance, if a platform's IP address changes, the next scan detects the change.

Under the hood, an agent's auto-discovery capabilities break down to three different types of scan, described in the sections that follow.

#### Default Scan

A *default scan* discovers platforms and servers from the process table or Windows registry.

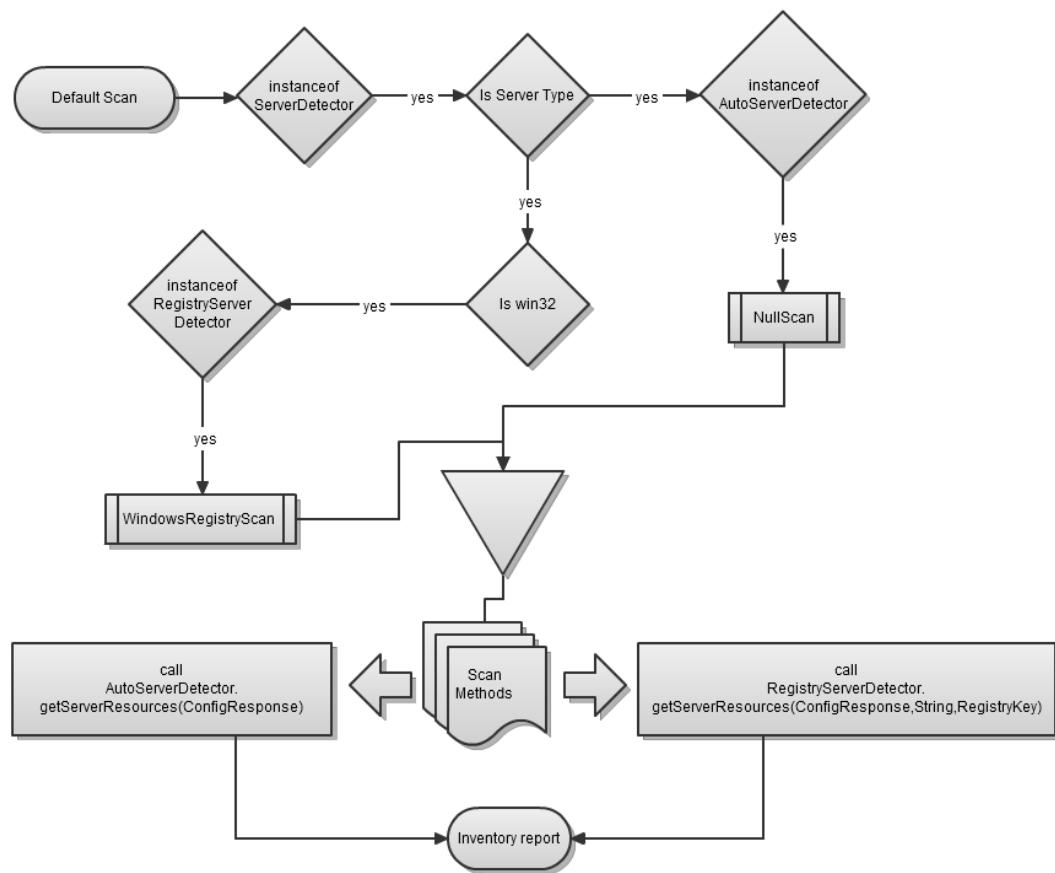
On Unix-like platforms, a default scan checks the process table for processes that match a given pattern. On Windows platforms, a simple registry scan is performed, looking for registry keys that installed products register during their installation process.

A default scan is performed upon agent startup, and every 15 minutes thereafter. A default scan typically does not take long and is not CPU-intensive.

You can also initiate a default scan on-demand for a platform to discover new servers. When you initiate a default scan, you can initiate a file scan, described below, as well.

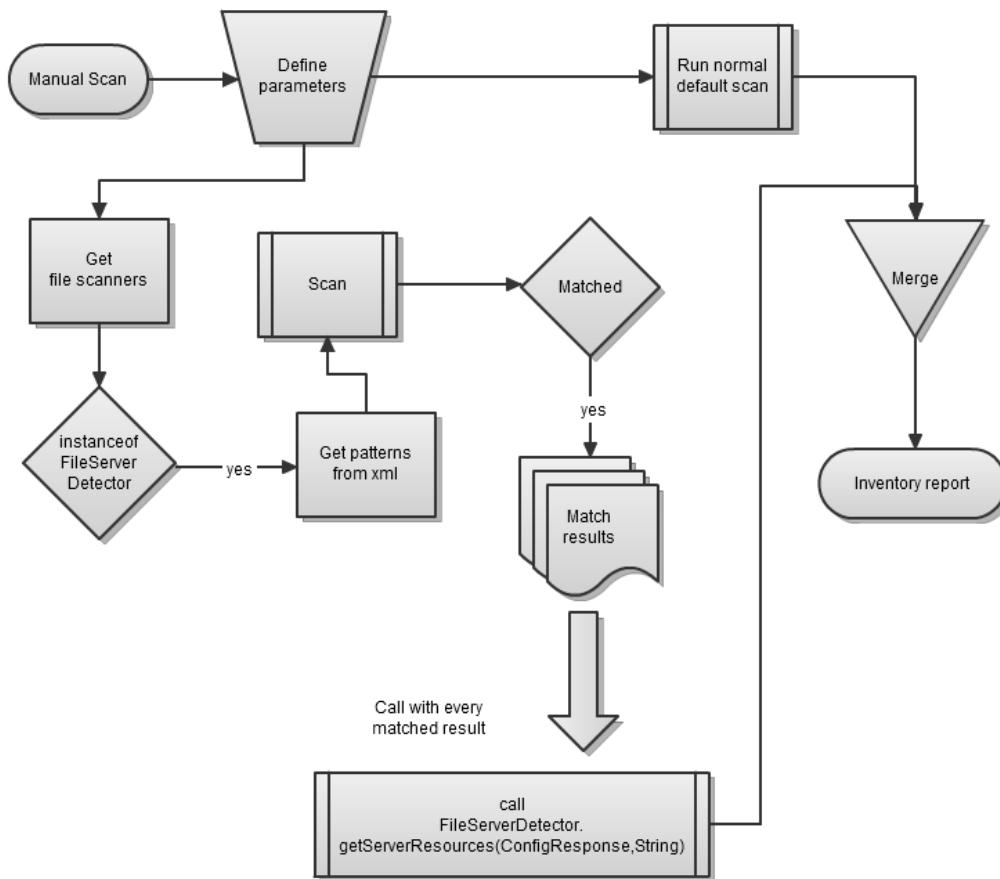
#### On-Demand Default Scan Discovers all vSphere Resource Types

When you initiate a default scan on a platform where a vSphere vCenter server runs, it discovers any new vCenter instances, and also discovers all of the ESX hosts and VMs a vCenter instance manages.



## File Scan

A *file scan* discovers servers by scanning the platform's file system for manageable products' installation directories. You can configure what server types to look for and directories to include or exclude for the search. You can initiate a file scan explicitly; when you run a default scan, you can start a file scan at the same time — the agent never runs a file scan automatically.



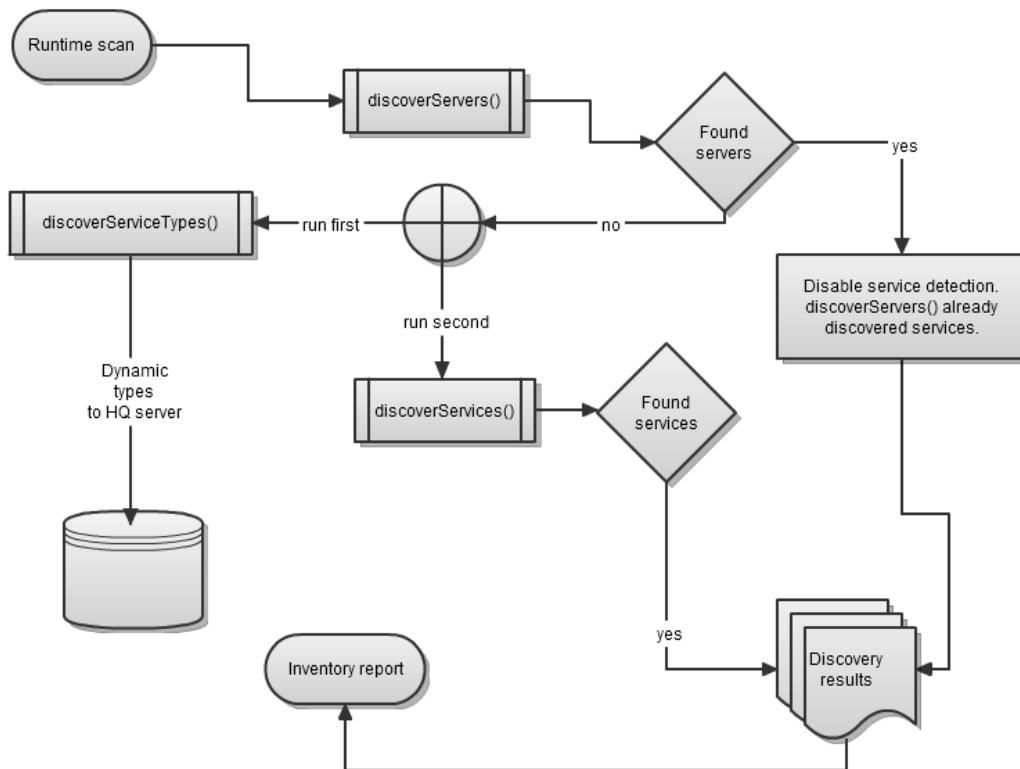
## Runtime Scan

A *runtime scan* discovers servers and services — platform services as well as services that run in a server. The agent performs a runtime scan when a new platform or new servers on a platform are added to inventory. In addition, the agent automatically does a runtime scan once a day.

For information about how to scan a platform on demand and options for configuring and disabling auto-discovery behavior, see [Section 2.3, “Options for Running and Controlling Resource Discovery”](#).

### Dynamic Service Type Detection

The auto-discovery functionality described on this page is governed by the resource plugin that manages a resource type. In addition, the Hyperic Agent can auto-discover and manage Java application services via Model MBeans that adhere to a specified ObjectName naming convention and expose a specified set of service data. This enables you to monitor application services along with the hosting application server and its internal services. See [Instrumenting Java Applications for Management](#).



### 1.3.2. About Auto-Inventory IDs and InstallPath

In Hyperic, any resource that is a server type must have an installation path defined as a configuration option. Note that for most server types, the installation path is not required for auto-discovery---servers are typically discovered from a scan of the system process table or Windows registry, and the value of the installation path is set by Hyperic. In fact, the installation path shown in Hyperic for a server often does not map to the actual installation path of the resource.

The primary purpose of a server's installation path, as defined in Hyperic, is in the construction of the resource's *auto-inventory identifier*. A resource's auto-inventory identifier is an internal identifier for a resource that is used in two ways:

- The Hyperic Agent uses the auto-inventory identifier to ensure that it does not report duplicates of a resource to the Hyperic Server.
- The Hyperic Server uses the auto-inventory identifier to determine whether a resource in an auto-inventory report is a new resource, or an existing resource in inventory.

### 1.3.3. What the Agent Can and Cannot Discover

The data the Hyperic Agent discovers for a resource type is specified in the XML descriptor for the resource plugin that manages it. All operating system platform types are managed by HQ's `system` plugin. Most other Hyperic plugins discover multiple versions of a server type and the service types it contains. For example, Hyperic's `tomcat` plugin manages several versions of the Tomcat server and multiple services within Tomcat.

The plugins that ship with Hyperic are in the `SERVER_HOME/hq-engine/hq-server/webapps/ROOT/WEB-INF/hq-plugins` directory. If you want to monitor a software product for which Hyperic does not provide a plugin, you can build your own, using support classes available from Hyperic, and deploy it to this directory and to the Hyperic Agent.

There are some resources that the Hyperic Agent cannot discover:

- Non-running resources - The agent cannot discover a resource that is not currently running.
- Remote network services - The Hyperic Agent can manage remote services and devices over supported network protocols, for example HTTP, FTP, or SMTP. For obvious reasons, you explicitly configure a remotely managed resource: you manually add it to inventory, and configure the properties that enable the agent to communicate with it. See [Create New Platform Service](#) for more information.
- Undiscoverable types - There are a few resource types that the Hyperic Agent can manage but not discover, even on the local platform. For example, you may need to configure the location of some versions of WebLogic Server. For a resource's configuration requirements, see the **Configuration help** section of the documentation for the resource plugin on HyperForge, the Hyperic community site.

### 1.3.4. How Discovered Resources Get into Hyperic Inventory

After a scan is completed, new and changed platforms and servers appear in the **Auto-Discovery** portlet on the Hyperic Dashboard. You explicitly add new and changed platforms to inventory - using controls in the **Auto-Discovery** portlet, or the **Auto-Discovery Results** page, which provides more detailed results of what a scan detected on a platform. New and changed services do not appear in the **Auto-Discovery** portlet or the **Auto-Discovery Results** page — you do not need to explicitly add them to inventory. When you add a platform or server to inventory, the associated services are automatically added as well.

### 1.3.5. What to Do After Adding New Resources to Inventory

After adding a new platform or server to inventory, you might need to:

- Configure the resource to enable monitoring. Configuration options are found on the resource's **Inventory** page.
- Add the resource to one or more new or existing resource groups. You can select groups to assign the resource on its **Inventory** page. Groups are useful for:
  - Resource access control, if you use vFabric Hyperic.
  - Monitoring a group of resources of the same type.
- Add new services to new or existing applications to enable monitoring at the application level.

## 1.4. Metrics and Metric Collection

- [Section 1.4.1, “Metric Categories”](#)
  - [Availability](#)
  - [Throughput](#)
  - [Utilization](#)
  - [Performance](#)
- [Section 1.4.2, “Metric Value Types”](#)
- [Section 1.4.3, “Baselines”](#)
  - [Uses for Baselines in Hyperic](#)
  - [Baselines in the Hyperic User Interface](#)
  - [How a Baseline is Calculated](#)
- [Section 1.4.4, “Default Metric Collection Settings”](#)

## 1.4.1. Metric Categories

### Availability

In Hyperic, a resource is "available" when it is ready to service requests. More specifically, a platform is available if the HQ Server can reach it. For other inventory types, HQ issues a query or a request to the resource to determine its availability. If a resource that is part of an application is unavailable, Hyperic considers the entire application to be unavailable. A managed resource's availability is displayed as follows:

Availability Icon Color	Availability Icon	Definition
Green		For an individual resource, indicates that its availability status is "green". In the case of a group, indicates that none of the group members has availability status of "red".
Yellow		This value appears for a group only. It indicates that (1) one or more group members, but not all members, have the availability status of "red", and (2) the remaining members have status "green".
Red		Indicates that an individual resource's availability status is "red". For a group, indicates that all members of the group have either availability status "red" or "unknown".
Grey		For an individual resource, indicates that its availability is unknown. For a group, indicates that the availability of at least one of the members is unknown.

When HQ notifies you that an application is unavailable, you can drill down into the resources that make up that application in order to determine which resource (such as a web server, application server, or database) is causing the availability problem.

### Throughput

HQ can measure throughput for each managed resource. For Web servers and application servers, throughput is typically measured as bytes served, bytes received, number of requests, and number of responses over a user-specified period of time (minutes, hours, days). For databases, throughput is typically measured as the number of requests processed or active connections over a specified period of time.

### Utilization

Hyperic HQ can measure utilization rates for the platforms and servers that make up an Application. Examples of utilization include number of sessions created and destroyed, number of loaded or reloaded servlets, JVM total, used, and free memory, EJB creates, removes, loads, stores, and so on.

You can examine the capacity of an entire platform and measure individual utilization of the servers on those platforms. Using Hyperic HQ, you can pinpoint underutilized resources by establishing minimum utilization thresholds on a per platform basis. You can also determine where Application bottlenecks occur by examining utilization rates between disk, memory, CPU, and network, and then apply capacity appropriately.

## Performance

A variety of metrics are categorized as performance metrics in Hyperic. Performance metrics are often measured in units of time, the milliseconds spent performing a type of operation, or the length of time that a threshold value was reached. Some performance metrics take an integer value - for instance the length of a work queue.

### 1.4.2. Metric Value Types

- **Dynamic** — Value may go up or down over time. CPU utilization is an example.
- **Static** — Value does not change over time. A time stamp is an example.
- **Trends Up** — Value always increases. For metrics whose values trend upwards, the rate of change is of interest, so Hyperic automatically creates a secondary metric: a per-minute rate measurement. If this rate metric has a **defaultOn** attribute set to true, the **defaultOn** attribute for the original metric is set to false (so that only the rate metric will be displayed, not the original metric). To disable an automatically generated rate metric, set its **rate** attribute to none.
- **Trends Down** — Value always decreases.

### 1.4.3. Baselines

Available only in vFabric Hyperic

Baselines — values that represent the norm for resource behavior — help you quickly identify problems with your resources. With baselines, you can automate metric analysis and configure alert conditions based on how a metric varies from baseline values. Hyperic automatically calculates the baseline values for all dynamic metrics.

#### Uses for Baselines in Hyperic

Baselines can help you provide:

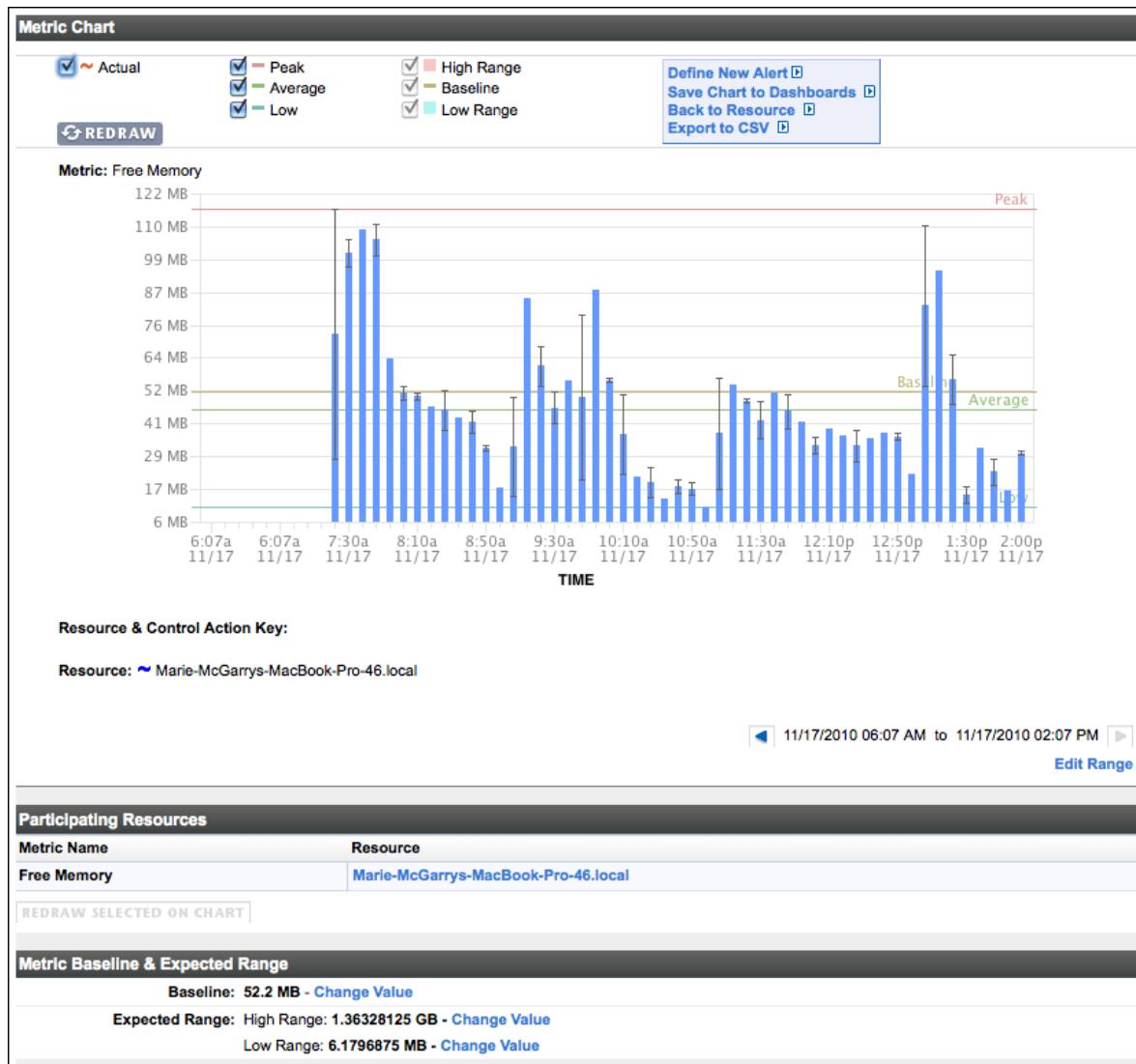
- **Trend Analysis:** The most common use of baselining is as a performance management tool for trending analysis. Using Hyperic, you establish and retain the same metric baseline value over a specific period of time, then include the baseline when you chart the current values of the metric. You can then identify trends that will help you to estimate future performance or needs.
- **Service-Level Management:** To manage service-level agreements, you measure actual performance against agreed-upon minimum service-level values. Using Hyperic, you specify the acceptable high and low values for the metric then include this range of acceptable values when you chart the current values of the metric.
- **Exception Management:** You can monitor application health — watching for changes in [problem indicators](#), a proactive form of fault management — by defining an alert based on either the baseline, the high, or the low metric values. For example, you can set up an alert that triggers when the metric value is more than 25% of the baseline value.

#### Baselines in the Hyperic User Interface

Baseline values for a metric are indicated on a chart for the metric. A chart for a metric is displayed when you click a metric's name on the resource's Monitor page - either in the **Indicators** or **Metric Data** tab.

A metric chart, like the example shown below, provides two sets of metric statistics:

- **Low, Average, and Peak** - these lines indicate that low, average, and high values for the metric for the current display range.
- **Low Range, Baseline, and High Range** - this lines reflect baseline values that were calculated (or specified) as the expected low, normal, and high values for the metric.



## How a Baseline is Calculated

Hyperic continuously and automatically calculates the baselines for dynamic metrics it collects for a resource: it averages the observed metric values over a user-specified time frame. A baseline value for a metric becomes more accurate as more data is collected. Hyperic calculates the baseline values based on the frequency of calculation, the set of metrics to consider, and the minimum number of data points to use for calculation. You can change these values and thereby change how baselines are calculated.

### 1.4.4. Default Metric Collection Settings

Metric collection defaults are set at the resource level and apply to all resources in inventory of that type.

Although you can modify metric collection settings for an individual resource, those settings will be over-written the next time the default metric collect for that resource type is updated. Changes at the resource type level will apply to all resources of the type.

Default metric collection and alert definitions for a resource type can be viewed and edited by an authorized user on the **Monitoring Defaults** page for a resource type.

## 1.5. Alerts and Alert Definitions

Topics marked with \* relate to features available only in vFabric Hyperic.

This page is a high level summary of alerting functionality in Hyperic HQ and vFabric Hyperic. See the last section, [Advanced Alert Functionality in vFabric Hyperic](#), for a summary of vFabric Hyperic-only features.

- [Section 1.5.1, “Alerts: What are they good for?”](#)
- [Section 1.5.2, “Functionality of a Resource Alert”](#)
- [Section 1.5.3, “Alert Definition Process”](#)
- [Section 1.5.4, “Alerts in the Hyperic User Interface”](#)
- [Section 1.5.5, “Responding to Alerts: Fixing and Acknowledging”](#)
- [Section 1.5.6, “Enabling and Disabling Alert Definitions”](#)
- [Section 1.5.7, “Introduction to Escalation Schemes”](#)
- [Section 1.5.8, “Options for Controlling Alert and Notification Volume”](#)
- [Section 1.5.9, “Responding to Alert and Notification Storms”](#)
- [Section 1.5.10, “Advanced Alert Functionality in vFabric Hyperic”](#)

## 1.5.1. Alerts: What are they good for?

IT teams can use Hyperic's alerting system to automate and manage IT problem detection and response processes. Hyperic alerting features allow you to:

- Fire and report an alert for a resource when a condition you specify occurs.
- Notify designated personnel or stakeholders of alert events.
- Execute resource control operations when an alert fires.
- Track the resolution status of problems revealed by alerts.
- Analyze alert and alert action history.

## 1.5.2. Functionality of a Resource Alert

An alert is set of rules you define that tells Hyperic, for a given resource, how to detect a problem and respond to it. You define the rules for an alert: (1) a metric value or event that signals trouble, and (2) what to do when the specified measurement or event is reported. When an alert fires, Hyperic logs it, presents it in the Hyperic user interface, and performs the actions you defined, which can include sending email and SMS notifications, generating OpenNMS traps, or kicking off an *escalation* - a series of scheduled notifications over a period of time. Additional alert condition and action functionality is described in [Advanced Alert Functionality in vFabric Hyperic](#).

## 1.5.3. Alert Definition Process

You create an alert for a resource, you define an *alert definition* for it. An alert definition specifies the *condition* that should initiate alert firing. An alert condition relates to either a metric Hyperic collects or an event Hyperic tracks for the resource. A metric condition specifies a particular metric, and the value or behavior should initiate alert firing - for example "Availability < 100%". An event condition specifies an event - a log event, a configuration file change, a control action - whose occurrence should initiates alert firing. An alert definition can also specifies actions for Hyperic to perform when an alert is fired. You set up alert definitions from the Hyperic user interface, using dialogs and selector lists to specify the condition and actions. The "minimum" alert definition simply specifies the rules for firing. Actions are optional. The alert definition process is described in [Defining Alerts](#).

**Note:** For information about the using Hyperic's web services API for creating alert definitions, see [HQApi alertdefinition command](#).

## 1.5.4. Alerts in the Hyperic User Interface

Any fired alert shows up immediately in Hyperic pages that present alert status and history, including the **Recent Alerts** portlet in the dashboard and the **Alerts** tab for a resource. Additional alert views are described in [Advanced Alert Functionality in vFabric Hyperic](#).

## 1.5.5. Responding to Alerts: Fixing and Acknowledging

When an alert is fired, its status is "unfixed", and will be indicated as such in Hyperic pages until its status is changed to "fixed". Hyperic provides several mechanisms for marking an alert fixed. You can explicitly mark an alert fixed from the Hyperic user interface. If multiple alerts have fired for the same alert definition, you can do a "fix all". Additional alert management capabilities are described in [Advanced Alert Functionality in vFabric Hyperic](#).

An alert with an escalation also has an "acknowledgment" status, to indicate that responsible or concerned parties are aware of the problem. When an alert with an escalation is fired, it is "unacknowledged", and remains so until it is explicitly acknowledged from the Hyperic user interface.

### 1.5.6. Enabling and Disabling Alert Definitions

At any given point in time, an alert definition is either enabled or disabled. When an alert definition is enabled, Hyperic's alerting engine evaluates the alert condition and rules, and fires alerts accordingly. Alerts will not fire for a disabled alert definition. Hyperic provides several mechanisms for enabling and disabling alert definitions.

An alert definition can be enabled:

- by a user explicitly disabling it from the Hyperic user interface
- automatically, if it configured it to disable itself each time it fires, and re-enable itself when the fired alert is marked "Fixed".
- as a result of an authorized user globally disabling all alert definitions from the **HQ Server Settings** page.

An alert definition can be disabled:

- temporarily, as a step in an escalation
- automatically upon firing, if it configured it to disable itself each time it fires, and re-enable itself when the fired alert is marked "Fixed".
- as a result of an authorized user globally enabling all alert definitions from the **HQ Server Settings** page.

### 1.5.7. Introduction to Escalation Schemes

An escalation is a type of alert action; it is a predefined sequence of notifications steps that starts automatically when alert fires. An escalation can define numerous steps to perform over whatever duration you choose. When the alert is marked "fixed" Hyperic stops the escalation. You create an escalation in the Hyperic Administration tab. You assign an escalation to an alert definition using the **Escalation** tab on the **Alert Definition** page.

There are several benefits to using escalation:

- **Prevent redundant alerts** - When an alert kicks off an escalation, Hyperic effectively disables the associated alert definition - preventing a sequence of additional alerts for the same problem. The alert definition remains inactive until the escalation ends. An escalation configured to repeat itself ensures that redundant alerts will be prevented even if the escalation ends before the triggering problem is resolved.
- **Automate issue management processes** - An escalation automates the process of monitoring and managing problem resolution processes. Thoughtfully configured escalations call attention to "long-running" or broken response processes, and make it harder for issues to fall through the cracks.
- **Reduce the effort of managing alert response rules** - Unlike other types of notifications that are defined within an alert definition (for example, the **Notify Hyperic Users** and **Notify Other Recipients** actions) an escalation is defined and updated separately. When policies, procedures, or staff assignments change, it is less effort to update one escalation than many alert definitions.
- **Escalations add flexibility to automation** - An escalation has an "acknowledgement" status that enables the automated response to be more flexible and take into account whether or not someone is attending to the problem. You can specify steps to perform based on whether an alert is or is not acknowledged, or based on how long it has been unacknowledged.

## 1.5.8. Options for Controlling Alert and Notification Volume

The purpose of alerting is to speed the process of detecting and resolving problems. Rapid detection and response can be compromised when multiple alerts fire as a result of the same problem, or if responders are inundated by repetitive alert notifications. Excessive alert and notification are less likely when:

- A given problem or root cause results in one, rather than many, alerts.
- An alert status of "unfixed" indicates a problem that still exists and needs attention, rather than a transient issue occurred, and then went away.
- A single problem doesn't result in a firestorm of redundant notifications.

Hyperic Hyperic provides a range of options for reducing the volume of alerts, and taking action when alert volume exceeds a manageable level. Prevention is the best strategy.

The best way to prevent redundant alerts is to assign a repeating escalation to every alert definition. An escalation is a series of notifications and a schedule for sending them. When the alert fires, Hyperic issues notifications according to the escalation schedule, and for the duration of the escalation, the alert will not fire again. Only after the escalation ends - because all steps are complete or the alert was marked fixed - can the alert definition fire again. You can set your escalations to repeat until the initiating alert is fixed to prevent redundant alerts for the same triggering condition.

An alternative approach for preventing redundant alerts is to configure each alert definition to disable itself upon firing. If you do, the alert will fire once, disable itself, and re-enable itself when the alert is fixed.

## 1.5.9. Responding to Alert and Notification Storms

If for some reason the volume of alerts or notifications gets out of control, you can use options on the **HQ Server Settings** page to immediately and globally:

- **Disable all alert definitions** - No alerts will fire for any resources. Notifications defined in escalations in progress will be completed.
- **Disable all notifications** - No alert notifications will be sent. Any escalations currently in progress stop - any remaining notification steps are not performed.

vFabric Hyperic offers additional features for managing alert and notification volume, as described in the following section.

## 1.5.10. Advanced Alert Functionality in vFabric Hyperic

vFabric Hyperic provides all the features described in the previous sections, plus these additional alert definition and management features:

- **Multi-condition resource alerts** - In vFabric Hyperic you can define up to three conditions for a resource alert.
- **Additional alert actions** - vFabric Hyperic provides additional alert actions, including
  - **SNMP trap** - generation
  - **Script action** - you can configure a script that does custom alert processing or notification, for instance, to share alert information with another management system

- **Control action** - operation on a resource, either the resource where the alert fired, or a related resource,
- **Recovery alerts** - In vFabric Hyperic, you can create *recovery alerts* to streamline your process for responding to alerts. First you create an alert definition that is configured to fire once and then disable itself until fixed. Then you define a recovery alert that fires when the condition that fired the primary alert is no longer true. When the recovery alert fires, it sets the primary alert's status to "fixed" and re-enables the primary alert definition.
- **Resource type alerts** - In vFabric Hyperic you can create an alert definition for a resource type, that will be inherited by all resources of that type. Resource type alerts are useful if want to assign exactly the same alert rules to every resource of the same type, and to be able to enable and disable the alert definition for all of them in one fell swoop.

#### Best Practice for Resource Type Alert Definitions

Tailoring an inherited alert definition at the resource level is not recommended. A resource type alert definition applies to all resources of that type. If you modify the inherited alert definition for an individual resource, a subsequent update to the resource type alert definition will override the changes made at the resource level.

- **Resource group alerts** - In vFabric Hyperic you can create an alert definition for a compatible group - a group you have defined that contains selected resources, all of which have the same resource type. A resource group alert is useful when you are concerned about how many of a set of resources are having a particular problem - you want to know if 2 out of 10 platforms have high disk utilization, for instance. A resource group alert is evaluated differently than resource alerts or resource type alerts. A resource alert or resource type alert is fires for a specific resource based on monitoring results for that resource only. A resource group alert fires when a metric condition is true for a specified number or percentage of the resources in the group.
- **Hierarchical alerting** - *Hierarchical alerting* prevents a cascade of alerts from resulting from the same root cause, so that a single problem doesn't result in alerts firing at multiple levels of the platform-server-service hierarchy. Hierarchical alerting is enabled by default. Hierarchical alerting functionality can be extended to network devices or virtual hosts that platforms depend on by defining dependencies. For more information, see [Hierarchical Alerting Prevents a Cascade of Alerts in Resource Hierarchies](#).
- **Notification throttling** - Notification throttling allows you limit the number of notifications that can be issued over a specified interval; when notification volume reaches the limit, Hyperic stops sending individual notifications, and instead sends periodic rollup notifications, until the volume of alerts with notification actions goes down.
- **Advanced Views for Alert Monitoring and Analysis** - In vFabric Hyperic, the **Alert Center** presents filterable views of alerts and alert definitions. The **Operations Center** presents filterable views of unfixed alerts.

## 1.6. Log and Configuration Event Tracking

- [Section 1.6.1, “Hyperic Log Tracking Overview”](#)
- [Section 1.6.2, “Hyperic Configuration Tracking Overview”](#)

### 1.6.1. Hyperic Log Tracking Overview

System problems can often be detected or diagnosed from messages generated by operating systems, application servers, network services, or middleware throughout the environment. Hyperic can monitor messages in log files and in memory, and record events in the Hyperic database based on criteria you specify.

#### Hyperic Resource Types that Support Log Tracking

Hyperic supports log tracking for operating system platforms, network services, and most server types. If a resource supports log tracking, its **Configuration Properties** page contains log tracking configuration options.

#### Supported Log Message Types

Hyperic can monitor and record log events for:

- Log file messages that specify log levels using log4j log levels.
- Events written to Windows Event Logs.
- Network request results for a variety of network services.

#### Log Tracking Configuration Options

You enable and configure log tracking for a resource on its **Configuration Properties** page. Navigate to the resource's **Inventory** page, and click **Edit** in the **Configuration Properties** section to display the **Configuration Properties** page.

**Note:** Log and configuration tracking must be enabled for a resource if you wish to log events for log messages or configuration changes. Event logging is automatic for alerts and control actions. Log tracking configuration options vary somewhat by resource type.

Log tracking options vary by resource type.

### 1.6.2. Hyperic Configuration Tracking Overview

You can configure Hyperic to log an event when a specified file - usually a configuration artifact - associated with a managed resource is modified. The agent uses a cryptographic hash function to continuously compare a original version of the file with the current version to see if it has changed. You can view configuration event data on the **Monitor** page for a resource or the **Event Center**. You can base alert conditions on configuration events.

- Hyperic can track multiple files per resource.
- The Hyperic Agent must be able to read a file to track it - ensure that file permissions are such that the Hyperic Agent can read files you wish to track.

- Configuration tracking is supported for most platform and server types; typically not for services.

## 1.7. SNMP Functionality in Hyperic

Topics marked with \* relate to features available only in vFabric Hyperic.

- [Section 1.7.1, “Hyperic and SNMP”](#)
- [Section 1.7.2, “Simple SNMP Agent Availability Checks”](#)
- [Section 1.7.3, “Monitor SNMP Devices and Hosts with Built-In Plugins”](#)
- [Section 1.7.4, “Roll Your Own: Build Vendor-Specific SNMP Plugins”](#)
- [Section 1.7.5, “Send SNMP Notifications for Alerts”](#)
- [Section 1.7.6, “Integrate Hyperic with OpenNMS”](#)

### 1.7.1. Hyperic and SNMP

This page summarizes Hyperic's SNMP-related capabilities.

### 1.7.2. Simple SNMP Agent Availability Checks

You can configure an Hyperic Agent to monitor the availability of a remote SNMP agent. You configure a platform service of type "SNMP" on the platform of your choice. The Hyperic Agent queries the remote SNMP service for `sysUpTime`, and reports the service available if a response is received. For more information, see [SNMP Platform Service](#).

Like other platform services, an SNMP platform service is limited to availability monitoring. To collect throughput and utilization metrics for SNMP devices, see the following section, [Monitor SNMP Devices and Hosts](#).

### 1.7.3. Monitor SNMP Devices and Hosts with Built-In Plugins

These are Hyperic's built-in capabilities for collecting availability, throughput, and utilization metrics for SNMP devices and hosts.

- Network Device Platform Type - Hyperic has built-in support for monitoring any device that implements IF-MIB (rfc2863) <http://tools.ietf.org/html/rfc2863> and IP-MIB (rfc4293) <http://tools.ietf.org/html/rfc4293>. You configure a platform of type "Network Device". For more information see [Monitoring a Network Device](#).
- Network Host - Hyperic has built-in support for monitoring any SNMP host that implements HOST-RESOURCES-MIB (rfc2790), in addition to IF-MIB (rfc2863) and IP-MIB (rfc4293). (A *network host* is an SNMP device with storage.) You configure a platform of type "Network Host".
- Cisco IOS - Hyperic has built-in support for monitoring Cisco IOS routers. You configure a platform of type "Cisco IOS". The Cisco IOS platform extends Network Device, adding metrics from CISCO-PROCESS-MIB and CISCO-MEMORY-POOL-MIB.
- Cisco Pixos - Hyperic has built-in support for monitoring Cisco Pixos routers. You configure a platform of type "Cisco Pixos". The Cisco PIXOS platform extends Cisco IOS, adding metrics from CISCO-FIREWALL-MIB.

### 1.7.4. Roll Your Own: Build Vendor-Specific SNMP Plugins

You can build your own plugin, leveraging Hyperic's SNMP plugin classes, to monitor specific SNMP device. Such a plugin is XML-only - development of custom plugin classes is not necessary. You write the plugin XML

descriptor, point to the device MIB, and specify the inventory properties you wish to discover, and the metrics (OIDs) to collect. For more information see [Writing an SNMP Plugin](#).

## 1.7.5. Send SNMP Notifications for Alerts

**Available only in vFabric Hyperic**

**This feature was added in HQ 4.3**

If you configure HQ Enterprise to send SNMP messages to your NMS, you can use SNMP notifications in alert actions or as a step in an escalation.

You define SNMP options for HQ Server in the "SNMP Server Configuration Properties" section of the **Administration > HQ Server Settings** page. The properties you define specify the SNMP protocol version for communicating with the NMS (v1, v2c, or V3), the type of notification (v1 Trap, v2c Trap, or Inform), and the properties required for the SNMP version you use. After this configuration, you can select the SNMP notification type:

- As an alert action - The notification sent when the alert fires will contain three variable bindings:
  - `sysUptimeOID.0` - No configuration is required for this binding.
  - `snmpTrapOID.0` - This binding is configured on the **HQ Server** settings page.
  - A variable binding for the alert data specified in the `snmp_trap.gsp` alert notification template - the alert definition name and the "short reason" for firing. Note that Alert templates may be customized, as described in [Tailoring Alert Notification Templates](#).
- As an escalation step - The behavior varies by version of HQ Enterprise:
  - In HQ Enterprise 4.2 and earlier - The notification sent will contain three variable bindings:
    - `sysUptimeOID.0` - No configuration is required for this binding.
    - `snmpTrapOID.0` - This binding is configured on the **HQ Server** settings page.
    - A variable binding for the alert data specified in the `snmp_trap.gsp` alert notification template - the alert definition name and the "short reason" for firing. Note that Alert templates may be customized, as described in [Tailoring Alert Notification Templates](#). The notification has two varbinds - `SysUpTime.0` and `snmpTrapOID.0`.
  - In HQ Enterprise 4.3 Beta and later - When you configure an SNMP notification as an escalation step, you can specify additional variable bindings. When the escalation step is performed, the trap will contain those variable bindings, along with `SysUpTime.0`, `snmpTrapOID.0`, and a variable binding for the alert data specified in the `snmp_trap.gsp` alert notification template.  
For more information and instructions, see [ui-Admin.HQServer](#).

## 1.7.6. Integrate Hyperic with OpenNMS

You can export Hyperic platforms as OpenNMS nodes for import to OpenNMS, and send an SNMP trap to OpenNMS as an alert action. For more information see [Integration with OpenNMS](#).

## 1.8. User Accounts and Roles in Hyperic

Topics marked with \* relate to features available only in vFabric Hyperic.

- [User Accounts in Hyperic](#)
- [Roles in vFabric Hyperic](#)

## 1.8.1. User Accounts in Hyperic

You create an account in Hyperic for each user.

In Hyperic HQ, a user account specifies the user's name, username, and contact information, including the email and SMS addresses for receiving alert notifications.

In vFabric Hyperic, a user account is also associated with one or more *roles*, the mechanism by which resource access and associated permissions are granted to users. Note that in vFabric Hyperic, to have access to resources, a user account must be assigned at least one role to which resources are assigned. Roles are not supported in Hyperic HQ — all users have all permissions to all resources in inventory. Similarly, any Hyperic HQ user has the permission to create other users.

For information about roles, see [Roles in vFabric Hyperic](#).

### Built-in Accounts

There is one built-in user account in Hyperic HQ, and two in vFabric Hyperic.

#### hqadmin Account

Both Hyperic HQ and vFabric Hyperic have a built-in hqadmin account, which has the `superuser` role, and can:

- Administer the HQ Server
- and, in vFabric Hyperic:
  - Assign alert definitions to resource types
  - Modify role-based dashboards

#### guest Account

vFabric Hyperic has a built-in guest account, which, when enabled, allows anonymous, view-only access to the HQ user interface. The guest user has the built-in guest role. Note that the guest role provides `View` permissions for all types, but unless resource groups are assigned to the role, anonymous users will not be able to view any resources. To allow anonymous users to view resources in HQ you must enable the guest account and assign the groups of resources you wish to expose to the guest role.

You can expose all resources to the guest role without assigning groups to the role. To do so, insert the following row into the database. Note that there is no user-interface that can revert this assignment and that you will have to remove the row manually from the database to disable it.

```
<![CDATA[ INSERT INTO EAM_ROLE_RESOURCE_GROUP_MAP VALUES (2, 1);]]>
```

## 1.8.2. Roles in vFabric Hyperic

Available only in vFabric Hyperic

In vFabric Hyperic, every user is assigned one or more roles. Roles enable:

- **Access control** - A role defines what resources the users added to the role - *role users* - can access, and the types of operations - view, edit, create, and so on - they can perform on those resources.
- **Alert notification** - A role with users but no resource groups assigned to it can serve simply as a distribution list for alert notifications. Role-based notification makes it easier to maintain alert definitions, and enables shift-based alert notifications. For around-the-clock operations, you can define multiple roles, with complementary alert calendars that specify when role users are on duty. If you assign the several complementary roles as recipients for the same alert, when the alert fires, HQ will send notifications only to the role with currently active calendar.
- **Role-Specific Dashboards** - When you create a role, HQ creates a new Dashboard for the role, which you can customize to meet the needs of role users.

The sections below describe the information you define for a role in vFabric Hyperic.

### Permission Matrix: Grants Access to Types

The permission matrix for a role defines the level of access that role users have to configurable items in vFabric Hyperic. There are several types of targets to which you can define a permission level:

- User management types - The permission levels to **Users** and **Roles** determines what level of access, if any, role users have to view and manage HQ user accounts and HQ roles.
- Inventory resource types - The permission level to inventory types - **Platforms**, **Servers**, **Services**, **Groups**, and **Applications** - controls the level of access, if any, role users have to that inventory type. **Note:** Granting access to an inventory type does *not* grant access to specific resource instances.
- Escalations - The permission level for **Escalations** controls the level of access, if any, role users have to view or manage escalations defined for use in alert definitions.

The screenshot below shows the permission matrix you define for a role.

Permissions		
Resource Type	Permissions	Capabilities
Users	Full	
Roles	Full	
Groups *	Full	Can Fix/Ack Alerts? <input checked="" type="checkbox"/>
Platforms	Full	Can Fix/Ack Alerts? <input checked="" type="checkbox"/> Can Control? <input checked="" type="checkbox"/>
Servers	Full	Can Fix/Ack Alerts? <input checked="" type="checkbox"/> Can Control? <input checked="" type="checkbox"/>
Services	Full	Can Fix/Ack Alerts? <input checked="" type="checkbox"/> Can Control? <input checked="" type="checkbox"/>
Applications	Full	
Escalations	Full	

*\* Regardless of permissions selected, all users have the ability to create groups in the system.*

**Ok**   **Reset**   **Cancel**

*Assign Users & Groups to this Role after clicking "OK".*

## About Permission Levels

You assign one of the following permission levels to each type.

- **None** - No access at all to instances of the type.
- **Read-Only** - Allows role users to view instances of the type, but not create, edit, or delete them. For **Platforms**, **Servers**, **Services**, **Groups**, also enables:
  - **Read-Only** access to alert definitions for the inventory type.

A role with **Read-Only** permission level does **not** have permissions to enable/disable/fix/ack alerts or control resources - these capabilities must be explicitly granted.
- **Read-Write** - Allows role users to view and edit instances of the type, but not create or delete them. For **Platforms**, **Servers**, **Services**, **Groups**, also gives:
  - **Full** access to alert definitions for the inventory type,
  - Permission to manage alerts (enable/disable, fix, acknowledge) for the inventory type.
  - Permission to perform supported control operations on resources of the inventory type.
- **Full** - Allows role users to create, edit, delete, and view instance of the type. For **Platforms**, **Servers**, **Services**, **Groups**, also gives:
  - **Full** access to alert definitions for the inventory type.
  - Permission to manage alerts (enable/disable, fix, acknowledge) for the inventory type.
  - Permission to perform supported control operations on resources of the inventory type.

## Permission Tips

### Defining a Role's Permission Matrix

For roles that:

- **Add resources to inventory and create alert definitions** - use **Full** or **Read-Write** permission levels. These permission levels enable a role to also process fired alerts and control resources.
- **Monitor resources, respond to alerts and control resources** - use the **Read** permission level, and then grant **Fix/Ack** and **Control** capability, or both. This allows operations staff to respond to alerts, see the details of alert definitions, and perform routine or as-needed resource control tasks but **not** create/delete resources and alert definitions.
- **Need visibility only** - Use **Read** permission level for roles that view and monitor resources, but do not (1) create/delete resources and alert definitions, or (2) response to alerts.

### How HQ Validates Platform-Server-Service Permission Level Assignments

HQ Enterprise does a bottom-up validation of the permission levels a role grants to Platforms, Servers, and Services.

A role with **Full** access (which enables resource deletion) to an inventory type must have at least **Read-Only** access to the parent type (if there is one) and Full to the child type (if there is one).

For example, **Full** access to Servers requires at least Read access to Platforms and Full access to Services.

### Groups: Grant Access to Specific Resources

In addition to defining a permission matrix for a role, you assign one or more resource groups to the role. Together, the permission levels and groups defined in the role determine the *specific* inventory resources that role users can work with.

If you create a role simply for use in role-based alert notifications, you do not have to assign any resource groups to the role.

Permission levels to **Platforms**, **Servers**, **Services**, **Groups**, and **Applications** define the level of access role users have to each of those inventory *types*. The operations that a role enables for an inventory type apply *only* to resources that belong to a group assigned to the role. (You cannot assign individual resources to a role, you must create groups of resources, and assign groups to roles.)

For example, the **Full** permission to **Platforms** granted by a role may only be exercised on platforms that belong to a group assigned to the role. So, a group assigned to a role may well contain resource types to which the role does not grant access.

You can assign the same resource group to multiple roles, and you can assign the same user to multiple roles. This allows for the fact that different users may need different levels of access to the same resources. For instance, you can create one role for users that need **Read-Only** access to the members of a resource group, and another for users that need **Full** permission, and assign the same resource groups to both roles.

### Alert Calendar: Enable Shift-Based Notifications

An Alert Calendar is an optional component of a role that builds on the notion of role-based notification. In role-based alert notifications, the notification recipient is a role - notifications are sent to all users with the role. An

Alert Calendar for role defines the time periods during a work week that role users are on duty. You can define multiple roles to span the week - each with a different availability calendar, and assign all of the complementary roles as the notification recipients. In this case, Hyperic Server will send alert notifications only to the role that is currently on-duty, based on the alert calendars defined in the roles.

The screenshot below shows the alert calendar you can define for a role.

Alert Calendar						
<input checked="" type="checkbox"/> Monday	From:	12 AM	To:	12 AM	<input type="checkbox"/> Except	From: 1 AM To: 2 AM
<input checked="" type="checkbox"/> Tuesday	From:	12 AM	To:	12 AM	<input type="checkbox"/> Except	From: 1 AM To: 2 AM
<input checked="" type="checkbox"/> Wednesday	From:	12 AM	To:	12 AM	<input type="checkbox"/> Except	From: 1 AM To: 2 AM
<input checked="" type="checkbox"/> Thursday	From:	12 AM	To:	12 AM	<input type="checkbox"/> Except	From: 1 AM To: 2 AM
<input checked="" type="checkbox"/> Friday	From:	12 AM	To:	12 AM	<input type="checkbox"/> Except	From: 1 AM To: 2 AM
<input checked="" type="checkbox"/> Saturday	From:	12 AM	To:	12 AM	<input type="checkbox"/> Except	From: 1 AM To: 2 AM
<input checked="" type="checkbox"/> Sunday	From:	12 AM	To:	12 AM	<input type="checkbox"/> Except	From: 1 AM To: 2 AM

## Built-in Roles

vFabric Hyperic has two built-in roles, which are described in the sections below.

### SuperUser

The screenshot below is the permission matrix for the Hyperic SuperUser. The built-in hqadmin account has the SuperUser role.

#### Super User Role

[<< Return to Roles](#)

Properties		
* Name: Super User Role Description: Dashboard Name: Super User Role Role Dashboard	Owner: System User (admin) Administer HQ Server YES Configuration:	

Permissions		
Resource Type	Permissions	Capabilities
Users	Full	
Roles	Full	
Groups	Full	Can Fix/Ack Alerts? <input checked="" type="checkbox"/>
Platforms	Full	Can Fix/Ack Alerts? <input checked="" type="checkbox"/> Can Control? <input checked="" type="checkbox"/>
Servers	Full	Can Fix/Ack Alerts? <input checked="" type="checkbox"/> Can Control? <input checked="" type="checkbox"/>
Services	Full	Can Fix/Ack Alerts? <input checked="" type="checkbox"/> Can Control? <input checked="" type="checkbox"/>
Applications	Full	Can Control? <input checked="" type="checkbox"/>
Escalations	Full	

Assigned Users		
<input type="checkbox"/> First Name HQ	Last Name Administrator	Username: <input type="text" value="hqadmin"/> <a href="#">ADD TO LIST...</a> <a href="#">REMOVE FROM LIST</a>
		Total: 1 Items Per Page: <input type="button" value="15"/>

Alert Calendar							
<input checked="" type="checkbox"/> Monday	From: <input type="text" value="12 AM"/>	To: <input type="text" value="12 AM"/>	<input type="checkbox"/> Except	From: <input type="text" value="1 AM"/>	To: <input type="text" value="2 AM"/>		
<input checked="" type="checkbox"/> Tuesday	From: <input type="text" value="12 AM"/>	To: <input type="text" value="12 AM"/>	<input type="checkbox"/> Except	From: <input type="text" value="1 AM"/>	To: <input type="text" value="2 AM"/>		
<input checked="" type="checkbox"/> Wednesday	From: <input type="text" value="12 AM"/>	To: <input type="text" value="12 AM"/>	<input type="checkbox"/> Except	From: <input type="text" value="1 AM"/>	To: <input type="text" value="2 AM"/>		
<input checked="" type="checkbox"/> Thursday	From: <input type="text" value="12 AM"/>	To: <input type="text" value="12 AM"/>	<input type="checkbox"/> Except	From: <input type="text" value="1 AM"/>	To: <input type="text" value="2 AM"/>		
<input checked="" type="checkbox"/> Friday	From: <input type="text" value="12 AM"/>	To: <input type="text" value="12 AM"/>	<input type="checkbox"/> Except	From: <input type="text" value="1 AM"/>	To: <input type="text" value="2 AM"/>		
<input checked="" type="checkbox"/> Saturday	From: <input type="text" value="12 AM"/>	To: <input type="text" value="12 AM"/>	<input type="checkbox"/> Except	From: <input type="text" value="1 AM"/>	To: <input type="text" value="2 AM"/>		
<input checked="" type="checkbox"/> Sunday	From: <input type="text" value="12 AM"/>	To: <input type="text" value="12 AM"/>	<input type="checkbox"/> Except	From: <input type="text" value="1 AM"/>	To: <input type="text" value="2 AM"/>		
<input type="button" value="Save"/>							

## Guest Role

The screenshot below is the permission matrix for the Hyperic SuperUser. The built-in guest account has the Guest role.

**Properties**

\* Name: Guest Role  
Description:  
Owner: System User (admin)  
Administer HQ Server YES  
Configuration:  
Dashboard Name: Guest Role Role Dashboard

**Permissions**

Resource Type	Permissions	Capabilities
Users	Read Only	
Roles	Read Only	
Groups	Read Only	Can Fix/Ack Alerts? <input type="checkbox"/>
Platforms	Read Only	Can Fix/Ack Alerts? <input type="checkbox"/> Can Control? <input type="checkbox"/>
Servers	Read Only	Can Fix/Ack Alerts? <input type="checkbox"/> Can Control? <input type="checkbox"/>
Services	Read Only	Can Fix/Ack Alerts? <input type="checkbox"/> Can Control? <input type="checkbox"/>
Applications	Read Only	Can Control? <input type="checkbox"/>
Escalations	None	

**Assigned Users**

First Name	Last Name	Username
Guest	User	guest

Total: 1 Items Per Page: 15

## 2. Discover and Import Resources to Inventory

Topics marked with \* relate to features available only in vFabric Hyperic.

*Auto-discovery* is the process of identifying new and changed resources on a platform. The Hyperic Agent auto-discovers most platform, server, and service types. The auto-discovery functionality supported for a resource type is defined in plugin that manages it.

Generally speaking, the auto-discovery process works like this:

1. Upon first startup on a supported platform, the Hyperic Agent discovers the platform, and the manageable servers running on the platform.
2. You review auto-discovery results in Hyperic user interface, and upon your approval, the platform, the servers, and the services running on the platform and servers are added to Hyperic inventory.
3. The Hyperic Agent periodically scans the platform for new and changed resources. Like new resources, changes to resources must be approved before the changes are introduced to inventory.

The topics listed below describe how Hyperic resource auto-discovery works, and provide instructions for viewing auto-discovery results and importing discovered resources to Hyperic inventory.

- [Section 2.1, “Using the Auto-Discovery Portlet”](#)
- [Section 2.2, “Using the Auto-Discovery Results Page”](#)
- [Section 2.3, “Options for Running and Controlling Resource Discovery”](#)

## 2.1. Using the Auto-Discovery Portlet

Topics marked with \* relate to features available only in vFabric Hyperic.

- [Contents of the Auto-Discovery Portlet](#)
- [Import or Skip Resources in Auto-Discovery Portlet](#)
- [Configure the Number of Auto-Discoveries Displayed](#)

### 2.1.1. Contents of the Auto-Discovery Portlet

The **Auto-Discovery** portlet on the Hyperic Dashboard lists recently added or modified platforms and servers, and allows an authorized user to view discovery details, and to import the new or changed resource data to the Hyperic database.

By default, the **Auto-Discovery** portlet lists the (up to) five most recently new or changed platforms. To set the maximum number of platforms that can appear in the list, see [Configure the Number of Auto-Discoveries Displayed](#).

A platform appears in the the **Auto-Discovery** portlet if it, or a server running on it, is new or changed. The rules are these:

- **The platform is new** — A platform appears as new in the portlet, if neither its IP address or FQDN match that of an existing platform in inventory. In this case, any new servers discovered on the platform appear below the platform in the portlet.
- **The platform has a new server** — A new server has been discovered on the platform since the last scan. The new server is listed below the platform.
- **Platform or server properties have changed** — One or more inventory properties for the platform, or for one or more of the servers running it, have changed since the last scan. Servers with changed properties are listed below the platform.

The image below shows the Auto-Discovery portlet after the agent was started for the first time on a platform.

Auto-Discovery		
Resource Name	Status	Changes
melba - Mac OS X Tiger	new	N/A
Apache 1.3.41 /usr	new	N/A
HQ Agent 4.0.0 /Applications/Hyperic/agent-4.0.0	new	N/A
Tomcat 5.5 /Applications/AtlassianConfluence	new	N/A
HQ JBoss 4.x /Applications/.../hq-engine/server/default	new	N/A
HQ Tomcat 5.5 /Applications/.../jbossweb-tomcat55.sar	new	N/A
HQ PostgreSQL 8.2 /Applications/Hyperic/server-4.0.0/hqdb	new	N/A
<a href="#">Add to Inventory</a>		<a href="#">Skip Checked Resources</a>

The **Auto-Discovery** portlet presents the following information for each platform it contains:

- **Hostname** — The hostname of the platform is a link to a page — the **Auto-Discovery Results** page - that contains detailed information about the scan results for the platform and servers running there. See [Using the Auto-Discovery Results Page](#).
- **Platform type** — The resource type for the platform.
- **Status** — Indicates the type of change that was detected for a resource, either "new" or "modified".
- **Changes** — If the **Status** for a resource is "modified", the **Changes** column contains a summary of what changed. For example:
  - "server set changed" — Applies to platforms; this value indicates that changes to one or more servers on the platform were detected. The changed server(s) are listed below the platform.
  - "name change" — Indicates that the name of the resource has changed; a resource name can change when a resource is upgraded from one version to another, if version number forms a portion of the resource name, as is often the case.
  - "install path changed" — Indicates that the installation path for a server has changed; the installation path for a resource can change when a resource is upgraded from one version to another, if version number forms a portion of the path, as is often the case.
  - "IP set changed" — Indicates that the IP address has changed. When the agent detects an IP address not associated with an existing platform in inventory, it checks for a platform with a matching FQDN - if found, Hyperic recognizes the platform as existing.
  - "FQDN changed"
- For each newly discovered or changed server on the platform:
  - **Installation path** —
  - **Status** — Indicates "new" or "modified"
  - **Changes** — If **Status** is "modified", the **Changes** column contains a summary of what changed.

#### About Discovery and Import of Services

The **Auto-Discovery Portlet** does not display new or changed services. As described above in [Hyperic Auto-Discovery Processes](#), service discovery occurs as a result of a run-time scan, and services that are discovered are automatically added to Hyperic inventory.

### 2.1.2. Import or Skip Resources in Auto-Discovery Portlet

You can process the contents of the **Auto-Discovery Portlet** in these ways:

- To import all resources---leave all resources selected, and click **Add to Inventory**.
- To skip all resources---leave all resources selected, and click **Skip Checked Resources**.
- To import selected resources---Either:
  - De-select the resources you do not want to add to inventory, and click **Add to Inventory**, or

- De-select the resources you do want to add to inventory and **Skip Checked Resources**.

#### About Skipped Resources

If you do not import a resource displayed in the **Auto-Discovery** portlet, note:

- If you skip a new platform, you skip its servers as well.
- During the next platform scan, skipped resources will reappear in the portlet after the next scan that detects them. If you have resources that you do not want the agent to discover, see the relevant section in [Options for Running and Controlling Resource Discovery](#).

If the Hyperic Agent discovered all of the resource properties required to monitor a resource, it starts monitoring that resource as soon as you add it to inventory. This is the case for most resource types. Note however, that some level of configuration is required to start managing some resources types - see the **Configuration Properties** section on a resource's **Inventory** tab for configuration requirements.

### 2.1.3. Configure the Number of Auto-Discoveries Displayed

To set the number of completed auto-discoveries displayed in the portlet, click the gear icon in the upper left corner of the portlet. On the **Display Settings** page, select "10" or "all", and click **OK**.

## 2.2. Using the Auto-Discovery Results Page

Topics marked with \* relate to features available only in vFabric Hyperic.

- [Contents of the Auto-Discovery Results Page](#)
- [Import or Skip Resources in Auto-Discovery Results Page](#)

### 2.2.1. Contents of the Auto-Discovery Results Page

The **Auto-Discovery Results** page appears when you click a platform name in the Dashboard's **Auto-Discovery** portlet. The page shows the results of the most recent platform scan - the new or changed resource information that was discovered, as well as information for unchanged resources. You can filter the page for new, modified, or unchanged resources. You can selectively import new and changed data to inventory.

Platform Type				
Platform Type: MacOSX		Fully Qualified Domain Name: Marie-McGarrys-MacBook-Pro-46.local		
Auto-Discovery Detail: Properties State: Modified Properties		Action: <input type="button" value="Import Values"/>		
<b>Network Properties</b> -- New, modified, or ignored values based on the current inventory of this Platform.				
View: <input type="button" value="New"/> 2				
IP Address: 192.168.1.157 MAC Address: 00:17:F2:EF:16:C0		Netmask: 255.255.254.0		
Auto-Discovery Detail: Properties State: New Properties		Action: <input type="button" value="Import Values"/>		
<b>Servers</b> -- New, modified, or ignored values based on the current inventory of this Platform.				
View: <input type="button" value="All Server Types"/> 3 <input type="button" value="New"/> 4				
Server	Server Type	Install Path	Server Status	Action
Marie-McGarrys-MacBook-Pro-15.local MacOSX FileServer	FileServer	/	new	<input type="button" value="Import Server"/>
Marie-McGarrys-MacBook-Pro-15.local MacOSX ProcessServer	ProcessServer	/	new	<input type="button" value="Import Server"/> 5
Marie-McGarrys-MacBook-Pro-15.local MacOSX NetworkServer	NetworkServer	/	new	<input type="button" value="Import Server"/>

The **Auto-Discovery Results** page has three sections:

- **Platform Type** — This section contains the following data and controls:
  - **Platform Type** — The resource type of the platform.
  - **Fully Qualified Domain Name** — The platform's FQDN.
  - **Import Values/Do Not Import** (callout #1 in screenshot) — In this version of Hyperic, this control has no effect. Changing the value has no impact on what values are imported.
- **Network Properties** — This section contains the following data and controls:
  - **All States/New/Modified/Unchanged** selector (callout #2 in screenshot) — This pulldown allows you to filter the IP addresses that appear in the list by change state.
  - The following data is shown for each IP address matching the currently selected filter value:
    - **IP Address**

- **Netmask**
- **MAC Address**
- **Properties State** — Value indicates if the connection properties are "New", "Unchanged", or "Changed".
- **Servers** — This section contains the following data and controls:
  - **Server Types** selector (callout #3 in screenshot)---This pulldown allows you restrict the list to servers of a particular type.
  - **All States/New/Modified/Unchanged** filter (callout #4 in screenshot)---This pulldown allows you to filter the servers that appear in the list by change state.
  - The following data is shown for each for each server in the list:
    - **Server**---The name of the resource.
    - **Server type**---The resource type of the server.
    - **Install Path**---Where the server is installed
    - **Server Status**---Value indicates whether the server is "New", "Unchanged", or "Modified".
    - **Import Values/Do Not Import** (callout #5 in screenshot)---The value of this pull-down controls whether the server data will be imported when the **OK** button is clicked.

## 2.2.2. Import or Skip Resources in Auto-Discovery Results Page

To process the contents of the **Auto-Discovery Results** page:

1. View the new and changed properties in the **Network Properties** section of the page.
2. If you do not want to import the new or changed network properties to Hyperic inventory, select "Do Not Import" from the pulldown in the **Platform Type** section of the page (callout #1 in screenshot).
3. View the new and changed servers listed in the **Servers** section of the page.
4. For each each new or changed server:
  - If you do not want to import a new or changed server to Hyperic inventory, select "Do Not Import" from the pulldown in the \*Action \*column
5. Click **OK** to import the resource data which you have approved for import.

### Configure Resources for Monitoring

If the Hyperic Agent discovered all of the resource properties required to monitor a resource, it starts monitoring that resource as soon as you add it to inventory. This is the case for most resource types. Note however, that some level of configuration is required to start managing some resources types - see the **Configuration Properties** section on a resource's **Inventory** tab for configuration requirements.

## 2.3. Options for Running and Controlling Resource Discovery

This section describes options for initiating and preventing Hyperic resource discovery processes.

- [Section 2.3.1, “Scan a Platform On-Demand”](#)
- [Section 2.3.2, “Configure Default and Runtime Scanning Frequency”](#)
  - [Configure Frequency of Default Scan](#)
  - [Disable Default Scan](#)
  - [Configure Frequency of Runtime Scan](#)
- [Section 2.3.3, “Exclude a Plugin Resource Hierarchy”](#)
- [Section 2.3.4, “Disable Platform Service Discovery”](#)
- [Section 2.3.5, “Disable Service Discovery for a Server Instance”](#)

For information about different types of auto-discovery scanning, see [Understanding Resource Auto-Discovery](#).

## 2.3.1. Scan a Platform On-Demand

To initiate a platform scan:

1. Navigate to the platform you want to scan.
2. Select **New Auto-Discovery** from the **Tools** menu.
  - The **New Auto-Discovery** page appears.

### Some Platforms Cannot Be Scanned

You can only initiate an auto-discovery scan for a platform that runs an Hyperic Agent. Platforms that are remotely monitored, such as Cisco and other network device platforms that do not run an agent, cannot be scanned.

3. You can run default scan only, or run a file scan in addition to the default scan. The different scan types are described in [Understanding Resource Auto-Discovery](#).
  - To run a default scan only, click **OK** at the top of the page.
  - To run a file scan in addition to the default scan:
    - a. Check the the *Server Types* that Hyperic should look for on the platform.
    - b. In *ScanDirs*, specify the directories that HQ should scan.
    - c. In *ExcludeDirs*, specify the directories that Hyperic should *not* scan.
    - d. In *fsTypes*, select the type of file system to scan: local disks, network-mounted disks, or both ("all").
    - e. In *depth*, specify the depth in the directory structure to which HQ should scan.
    - f. To have Hyperic follow symlinks when scanning, check *Should symlinks be followed*.
    - g. Click **OK** at the bottom of the screen.

## 2.3.2. Configure Default and Runtime Scanning Frequency

### Configure Frequency of Default Scan

By default, an HQ Agent runs a default scan upon startup and every 15 minutes thereafter. To change the frequency, uncomment the `autoinventory.defaultScan.interval.millis` line in the `agent.properties` file, and set the desired value in milliseconds.

#### `autoinventory.defaultScan.interval.millis`

##### Description

Specifies how frequently the agent performs a default autoinventory scan.

The default scan detects servers and platform services, typically using the process table or the Windows registry. Default scans are less resource-intensive than runtime scans.

##### Default

Commented out, set to 86,400,000 milliseconds, or 1 day.

**Note however, that by default, the agent performs the default scan at startup and every 15 minutes thereafter.**

### Disable Default Scan

To prevent the HQ Agent from running default scans on the platform, uncomment the `autoinventory.defaultScan.interval.millis` property in the `agent.properties` file, and set it to "-1". For example:

```
autoinventory.defaultScan.interval.millis=-1
```

### Configure Frequency of Runtime Scan

By default, an HQ Agent runs a runtime scan once a day. To change the frequency, edit the `{autoinventory.runtime.Scan.interval.millis}` line in the `agent.properties` file, and set the desired value in milliseconds.

#### `autoinventory.runtimeScan.interval.millis`

##### Description

Specifies how frequently the agent performs a runtime scan.

A runtime scan may use more resource-intensive methods to detect services than a default scan. For instance, a runtime scan may involve issuing an SQL query or looking up an MBean.

##### Default

86,400,000 milliseconds, or 1 day.

### 2.3.3. Exclude a Plugin Resource Hierarchy

If you do not want the Hyperic Agent to discover a resource, you can prevent the agent from loading the plugin. Specify the plugin or plugins that you do not want the agent to load at startup with the `agent.exclude` property in the `agent.properties` file on the platform.

## 2.3.4. Disable Platform Service Discovery

To disable auto-discovery of platform services, update `agent.properties` with the following property settings.

### **sigar.mirror.procnet**

**Description**

mirror /proc/net/tcp on linux

**Default**

true

### **netservices.netstat**

**Description**

Add the `netservices.netstat` property to `agent.properties` and set it to "false" to prevent the agent from auto-discovering network services running on the platform.

**Default**

As installed, `agent.properties` does not contain this property, and by default, an HQ Agent discovers network services running on a platform.

## 2.3.5. Disable Service Discovery for a Server Instance

If you do not want the agent to discover the services running in a server, you can disable the behavior in the **Monitoring** section of the **Configuration Properties** page for a server instance.

### 3. Manage Resource Auto-Discovery

- [Section 3.1, “Configure Auto-Discovery Frequency”](#)
- [Section 3.2, “Scan a Platform On-Demand”](#)
- [Section 3.3, “Prevent Resource Discovery”](#)
- [Section 3.4, “Solving Auto-Discovery Problems”](#)

## 3.1. Configure Auto-Discovery Frequency

### 3.1.1. Configure Frequency of Default Scan

By default, an HQ Agent runs a default scan upon startup and every 15 minutes thereafter. To change the frequency, uncomment the `autoinventory.defaultScan.interval.millis` line in the `agent.properties` file, and set the desired value in milliseconds.

#### **autoinventory.defaultScan.interval.millis**

##### **Description**

Specifies how frequently the agent performs a default autoinventory scan.

The default scan detects servers and platform services, typically using the process table or the Windows registry. Default scans are less resource-intensive than runtime scans.

##### **Default**

Commented out, set to 86,400,000 milliseconds, or 1 day.

**Note however, that by default, the agent performs the default scan at startup and every 15 minutes thereafter.**

### 3.1.2. Disable Default Scan

To prevent the HQ Agent from running default scans on the platform, uncomment the `autoinventory.defaultScan.interval.millis` property in the `agent.properties` file, and set it to "-1". For example:

```
autoinventory.defaultScan.interval.millis=-1
```

### 3.1.3. Configure Frequency of Runtime Scan

By default, an HQ Agent runs a runtime scan once a day. To change the frequency, edit the `{autoinventory.runtime.Scan.interval.millis}` line in the `agent.properties` file, and set the desired value in milliseconds.

#### **autoinventory.runtimeScan.interval.millis**

##### **Description**

Specifies how frequently the agent performs a runtime scan.

A runtime scan may use more resource-intensive methods to detect services than a default scan. For instance, a runtime scan may involve issuing an SQL query or looking up an MBean.

##### **Default**

86,400,000 milliseconds, or 1 day.

## 3.2. Scan a Platform On-Demand

To initiate a platform scan:

1. Navigate to the platform you want to scan.
2. Select **New Auto-Discovery** from the **Tools** menu.
  - The **New Auto-Discovery** page appears.

### Some Platforms Cannot Be Scanned

You can only initiate an auto-discovery scan for a platform that runs an Hyperic Agent. Platforms that are remotely monitored, such as Cisco and other network device platforms that do not run an agent, cannot be scanned.

3. You can run default scan only, or run a file scan in addition to the default scan. The different scan types are described in [Understanding Resource Auto-Discovery](#).
  - To run a default scan only, click **OK** at the top of the page.
  - To run a file scan in addition to the default scan:
    - a. Check the the *Server Types* that Hyperic should look for on the platform.
    - b. In *ScanDirs*, specify the directories that HQ should scan.
    - c. In *ExcludeDirs*, specify the directories that Hyperic should *not* scan.
    - d. In *fsTypes*, select the type of file system to scan: local disks, network-mounted disks, or both ("all").
    - e. In *depth*, specify the depth in the directory structure to which HQ should scan.
    - f. To have Hyperic follow symlinks when scanning, check *Should symlinks be followed*.
    - g. Click **OK** at the bottom of the screen.

## 3.3. Prevent Resource Discovery

This section describes options for preventing Hyperic resource discovery processes.

- [Section 3.3.1, “Exclude a Plugin Resource Hierarchy”](#)
- [Section 3.3.2, “Disable Platform Service Discovery”](#)
- [Section 3.3.3, “Disable Service Discovery for a Server Instance”](#)

For information about different types of auto-discovery scanning, see [Understanding Resource Auto-Discovery](#).

### 3.3.1. Exclude a Plugin Resource Hierarchy

If you do not want the Hyperic Agent to discover a resource, you can prevent the agent from loading the plugin. Specify the plugin or plugins that you do not want the agent to load at startup with the `agent.exclude` property in the `agent.properties` file on the platform.

### 3.3.2. Disable Platform Service Discovery

To disable auto-discovery of platform services, update `agent.properties` with the following property settings.

#### **sigar.mirror.procnet**

Description
mirror /proc/net/tcp on linux
Default
true

#### **netservices.netstat**

Description
Add the <code>netservices.netstat</code> property to <code>agent.properties</code> and set it to "false" to prevent the agent from auto-discovering network services running on the platform.
Default
As installed, <code>agent.properties</code> does not contain this property, and by default, an HQ Agent discovers network services running on a platform.

### 3.3.3. Disable Service Discovery for a Server Instance

If you do not want the agent to discover the services running in a server, you can disable the behavior in the **Monitoring** section of the **Configuration Properties** page for a server instance.

## 3.4. Solving Auto-Discovery Problems

Refer to the sections below if you have trouble with resource discovery.

- [Section 3.4.1, “Removed Resources Not Rediscovered”](#)
- [Section 3.4.2, “Discovered Resources Not Imported”](#)
- [Section 3.4.3, “Auto-Discovering WebLogic Server on Linux and Solaris”](#)
- [Section 3.4.4, “Auto-Discovering Server Types on Solaris”](#)

### 3.4.1. Removed Resources Not Rediscovered

If you delete a resource, and then immediately scan the platform, it is possible that the deleted resource will not be rediscovered during that scan.

In Hyperic, the resource deletion process is asynchronous. If you delete many resources at once, if the deletion of a resource is not complete when the next scan is performed, the agent will find the resource already exists, and not report it as new or changed.

### 3.4.2. Discovered Resources Not Imported

If a resource still appears in the **Auto-Discovery Portlet** after you clicked **Add to Inventory** to import it to inventory, you can use **HQ Health** to troubleshoot the problem. Use the available database queries to check the autoinventory queue - if the resource you wish to add appears in the queue, use the **Purge Autoinventory Queue** action. Initiate an auto-discovery scan and try importing the resource after it is re-discovered.

### 3.4.3. Auto-Discovering WebLogic Server on Linux and Solaris

To auto-discover a WebLogic Server instance on Linux or Solaris, the Hyperic Agent must be able to read its current working directory `/proc/$pid/cwd`. To ensure that the agent has sufficient privileges, you can:

- Run the Hyperic Agent as the same user that runs the WebLogic Server Administration Server,
- Run the Hyperic Agent as root, or
- Under Solaris 10 only, grant the agent account permission to read `/proc/$pid/` files within the Solaris 10 Least Privilege Model (LPM). For instructions, see[Configure Agent Account Privileges under Solaris 10](#).

For additional information about solving problems with auto-discovery of WebLogic Server, see [Configure Hyperic Agent to Monitor WebLogic Server](#).

### 3.4.4. Auto-Discovering Server Types on Solaris

A Hyperic Agent can fail to auto-discover some types of servers running under Solaris for a combination of reasons.

Solaris limits the length of the publicly-viewable process arguments struct member to 80 bytes, which can result in truncation of process arguments that the agent needs to read. To obtain all arguments, the agent will attempt to access the process address space file`{/proc/$pid/as}`and fail, if it lacks permission.

If the Hyperic Agent does not auto-discover servers under Solaris, run the agent as root, or grant the agent account permission to read `/proc/$pid/` files within the Solaris 10 Least Privilege Model (LPM). For instructions, see [Configure Agent Account Privileges under Solaris 10](#).

## 4. Create and Manage Resource Groups and Applications

- [Section 4.1, “Configure and Manage Resource Groups”](#)
- [Section 4.2, “Schedule Downtime for a Group of Resources”](#)
- [Section 4.3, “Define an Alert for a Resource Group”](#)
- [Section 4.4, “Create and Manage Applications”](#)

### Learn About Groups and Applications

See [About Groups in Hyperic](#) and [About Applications in Hyperic](#).

## 4.1. Configure and Manage Resource Groups

Topics marked with \* relate to features available only in vFabric Hyperic.

This page has instructions for creating and managing groups.

- [Section 4.1.1, “Create a Group”](#)
- [Section 4.1.2, “Add Resources to a Group”](#)
- [Section 4.1.3, “Assign Roles to a Group”](#)
- [Edit a Group's Inventory Properties](#)
- [Section 4.1.5, “Remove Resources from a Group”](#)
- [Section 4.1.6, “Remove Roles from a Group”](#)

### Learn About HQApi group Command

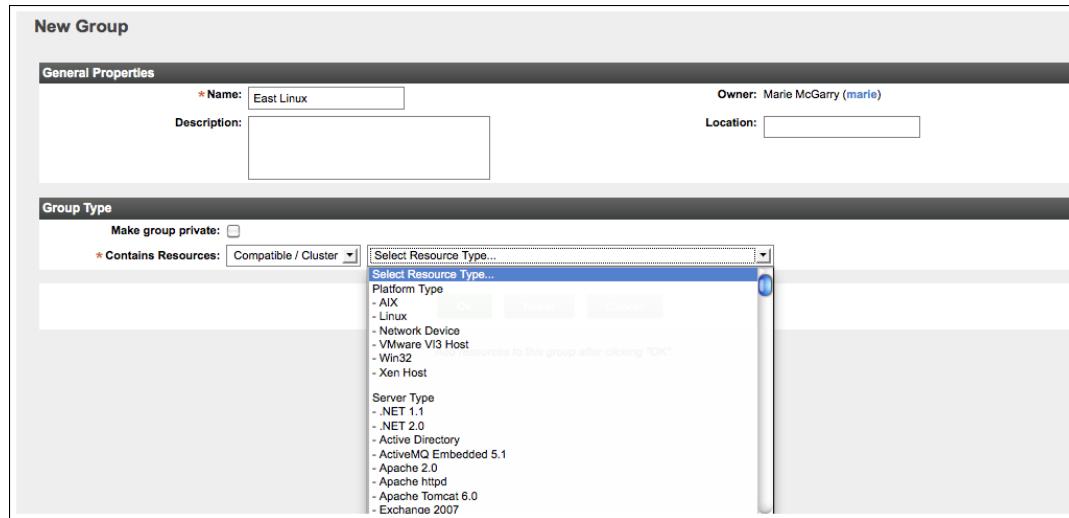
For information about creating a group using the HQApi see [HQApi group command](#) in *Web Services API*.

## 4.1.1. Create a Group

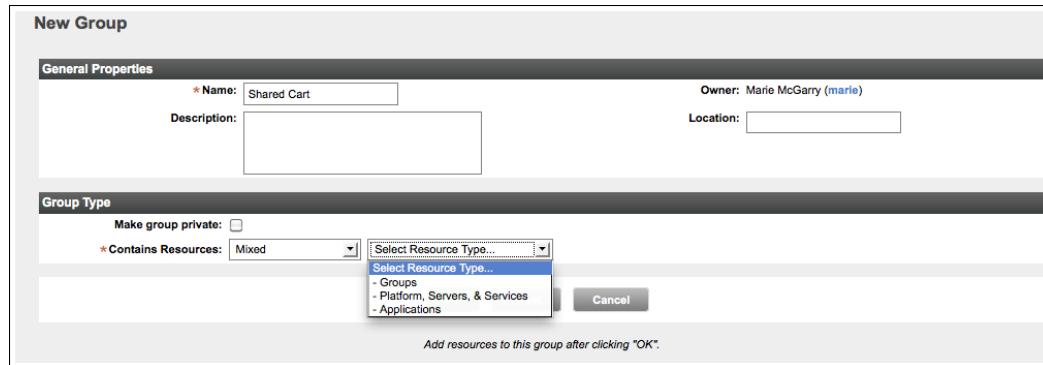
1. Click **New Group** on either:
  - The Dashboard's **Summary Counts** portlet
  - The **Tools** menu on the **Browse > Resources** page
2. The **New Group** page appears.

The screenshot shows the 'New Group' dialog box. The 'General Properties' section contains fields for 'Name' (mandatory), 'Description', 'Owner' (Marie McGarry (marie)), and 'Location'. The 'Group Type' section includes a 'Make group private' checkbox and a 'Contains Resources' dropdown. Buttons at the bottom are 'Ok', 'Reset', and 'Cancel'. A note at the bottom says 'Add resources to this group after clicking "OK"'.

3. On the **New Group** page, enter
  - Name: The name of the group
  - Description: (optional) A description of the group
  - Location: (optional) The physical location of the group's hardware
  - Make group private: Checkmark to make the group private. A private group is invisible to other users, including admin users. You can share a private group with other users by associating it with a role. Note that the name you assign to a private group is automatically prefixed with the string "private to *username*", where *username* is the creator's Hyperic username.
  - Contains Resources: Select the type of group:
    - Compatible/cluster - the group will contain resources of a single type. For example, "Linux" or "JBoss 4.2"
    - Mixed - the group will contain multiple resource types. Mixed groups are useful for role-based resource access control.
    - The **Select Resource Type** pulldown appears to the right of the **Contains Resources** — the options vary depending upon whether you are creating a compatible or mixed group.
      - For a compatible group, the **Select Resource Type** pulldown contains a list of all resource types in inventory, as shown in the screenshot below.



- For a mixed group, the **Select Resource Type** pulldown contains these choices (as shown in the thumbnail screenshot below):
  - Groups
  - Platforms, Servers, & Services
  - Applications



4. Click OK to create the group.

- The **Inventory** page for the new group appears. The screenshot below is the **Inventory** page for a new compatible group.

Browse > East Linux

Description: Owner: Marie McGarry (marie) - Change...  
[Map](#) [Tools Menu](#)

[Monitor](#) [Inventory](#) [Alert](#) [Views](#)

✓ Group East Linux has been created.

**General Properties**

Description:	Date Created: 08/27/2010 10:52 AM
Location:	Date Modified: 08/27/2010 10:52 AM
Resource Type: Group	Modified By: Marie McGarry (marie)

[EDIT...](#)

**Resources** - Compatible resource type: Linux  
Total: 0

<input type="checkbox"/> Name	Type	Description	Availability
<a href="#">ADD TO LIST...</a> <a href="#">REMOVE FROM LIST</a>			

Total: 0 Items Per Page: 15

**Roles Assigned To**

<input type="checkbox"/> Name	Description
<a href="#">ADD TO LIST...</a> <a href="#">REMOVE FROM LIST</a>	

Total: 0 Items Per Page: 15

5. Add resources to the new group, following the instructions in [Add Resources to a Group](#)

#### **4.1.2. Add Resources to a Group**

To add resources to a group:

1. Navigate to the group's **Inventory** page, if it is not currently selected.
  2. Click **Add To List** in the **Resources** section of the page.
  3. On the **Add to Group** page, filter the resource list as desired by entering all or a port of the resource name in the **Filter By Name** field.
    - If you are creating a mixed group, a pulldown that allows filtering by resource type as well.

4. Checkmark desired resources and click the blue arrow to move them from the **Resources** column to the **Add Resources** column. (The arrow is enabled when you select a resource.)
5. After moving desired resources to the **Add Resources** column, click **OK**.

### 4.1.3. Assign Roles to a Group

To add a role to a group:

1. Navigate to the group's **Inventory** page, if it is not currently selected.
2. Click **Add To List** in the **Roles** section of the page.
3. On the **Add to Roles toGroup** page, checkmark desired roles and click the blue arrow to move them from the **Roles** column to the **Add To Roles** column. (The arrow is enabled when you select a role.)

Edit East Linux: Add Roles To Group	
Roles	
Compatible Resource Type: Linux	
<input type="checkbox"/> Roles ▲	Description
<input type="checkbox"/> Guest Role	
<input type="checkbox"/> asmorrison1 Role	
<input type="checkbox"/> auto inventory	
<input type="checkbox"/> AView role	
<input type="checkbox"/> AViewrole	
<input type="checkbox"/> Database Experts	
<input type="checkbox"/> DBA	
<input type="checkbox"/> Dummy1 Role	
<input type="checkbox"/> EdmundsApps	
<input type="checkbox"/> EdmundsDBA	
<input type="checkbox"/> EdmundsExec	
<input type="checkbox"/> EdmundsLinux	
<input type="checkbox"/> EdmundsNetwork	
<input type="checkbox"/> Group Role	
<input type="checkbox"/> hqdemo	

Add To Roles	
<input type="checkbox"/> Roles ▲	Description

4. After moving desired roles to the **Add Resources** column, click **OK**.

### 4.1.4. Edit a Group's Inventory Properties

Edit East Linux	
General Properties	
* Name:	East Linux
Description:	
Owner:	Marie McGarry (marie)
Location:	

### 4.1.5. Remove Resources from a Group

To remove resources from a group:

1. Navigate to the group's **Inventory** page, if it is not currently selected.
2. In the **Resources** section, checkmark the resources you want to remove.
3. Click **Remove From List**.

#### 4.1.6. Remove Roles from a Group

To remove roles from a group:

1. Navigate to the group's **Inventory** page, if it is not currently selected.
2. In the **Roles** section, checkmark the roles you want to remove.
3. Click **Remove From List**.

## 4.2. Schedule Downtime for a Group of Resources

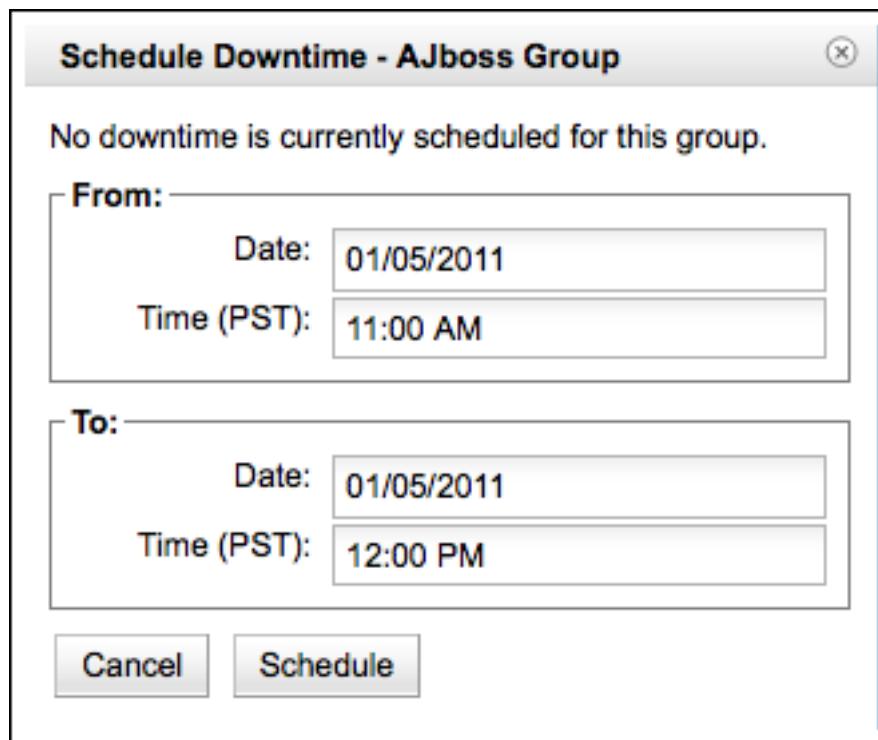
Available only in vFabric Hyperic

The **Schedule Downtime** page, available from the **Tools** menu when a group is selected, allows you to schedule a downtime period, during which alerts for resources in the group will not fire. You define a period of time - a start and end date and time. At the start of the downtime period, currently active alert definitions for resources in the group are disabled. At the end of the period, those alert definitions are re-enabled.

Only an HQ user with the Super User role may schedule downtime.

To schedule or reschedule maintenance:

1. Navigate to the group for which you wish to schedule downtime.
2. Choose **Schedule Downtime** from the **Tools** menu.
  - The **Schedule Downtime** page appears.



3. On the **Schedule Downtime** page, enter the start and end dates and times for the downtime and click **Schedule**.

### Related Information

For information about scheduling downtime from a program, script, or a command-line interface with HQ's web services API, see [HQApi maintenance command](#).

## 4.3. Define an Alert for a Resource Group

**Available only in vFabric Hyperic**

This page explains how to define an alert for a compatible group - a group whose members are all of the same resource type.

- [Section 4.3.1, “Understanding Resource Group Alerts”](#)
- [Section 4.3.2, “Define a Resource Group Alert”](#)
  - [Step 1: Select Target Compatible Group](#)
  - [Step 2: Define Alert Properties](#)
  - [Step 3: Define Alert Condition](#)
  - [Step 4: Assign Escalation Action](#)

### 4.3.1. Understanding Resource Group Alerts

A resource group alert is an alert assigned to a compatible group - a group or resources you have defined that contains selected resources, all of which have the same resource type.

Resource group alerts are different than resource alerts in these ways:

- **A resource group alert definition has a single condition** - A resource group alert definition is based on a single condition.
- **A resource group alert condition is based on the behavior of multiple resources** - Resource group alerts are evaluated differently than other HQ alert types. A resource alert or resource type alert is fired for a specific resource based on monitoring results for that resource only. A resource group alert fires when a metric condition is true for a specified number or percentage of the resources in the group.
- **The only action a resource group alert can trigger is an escalation** - The only action you can assign to a group alert definition is an escalation.
- **A resource group alert fixes itself** - Although you can mark a group alert fixed - from the group's Alerts tab or other alert views - you don't need to. HQ automatically marks a group alert "fixed" when the condition that caused it to fire is no longer true. This shows up in the UI as "The problem fixed itself." in the "Alert Detail" screen.

### 4.3.2. Define a Resource Group Alert

#### Step 1: Select Target Compatible Group

1. Browse to the compatible group to which the new alert definition will apply.
2. Click the **Alert** tab.
3. Click **Configure**.
4. Click **New** to display the **New Alert** page.

#### Step 2: Define Alert Properties

On the **New Alert** page, define each property in the "Alert Properties" section.

- **Name** - Name assigned by the user creating an alert definition. A fired alert is identified, in the HQ user interface and alert notifications, by the alert definition name and a timestamp. An alert definition name should clearly communicate the nature of the problem. For example, "Down" for an alert on availability, or "Low Memory" for an alert on free memory.
- **Description** - Description entered by the user creating the alert definition.
- **Priority** - The severity of the problem, as defined by the person creating the alert definition: "Low", "Medium", or "High". A consistent policy for defining an alert definition priority makes it easier to triage problems appropriately. An alert's priority is shown in HQ pages that present alert status and in alert notifications. You can sort alerts by priority in HQ Enterprise's **Alert Center** or **Operations Center**.
- **Active** - The current enabled/disabled status of the alert definition. Alerts only fire for enabled alert definitions. When an alert definition is disabled, HQ does not evaluate its condition or fire alerts for it.

### Step 3: Define Alert Condition

Determine why the alert will fire.

1. Select how many (an absolute number or percentage) of the resources in the group (the number of members is shown) that must satisfy the condition.
2. Select the metric and the comparison value that those resources must satisfy.
3. Click **OK** when you are done.

### Step 4: Assign Escalation Action

Assign an escalation to the alert. The series of notifications defined in the escalation will be performed when an alert is fired. You must define an escalation before you can assign it to an alert definition. Click **Escalation Schemes Configuration** on the **Administration** tab to define an escalation.

## 4.4. Create and Manage Applications

Topics marked with \* relate to features available only in vFabric Hyperic.

This page has instructions for configuring an application in Hyperic.

- [Section 4.4.1, “Instrument Java Components \(Optional\)”](#)
- [Section 4.4.2, “Create an Application”](#)
- [Section 4.4.3, “Add Services to an Application”](#)
- [Section 4.4.4, “Add Application to a Group”](#)
- [Section 4.4.5, “Monitoring an Application with Indicator Charts”](#)

### Learn About Applications

See [About Applications in Hyperic](#).

## 4.4.1. Instrument Java Components (Optional)

You can gain deeper visibility into the health of Java applications by instrumenting application services.

The Hyperic Agent can auto-discover and manage Java application services via Model MBeans that adhere to a specified `ObjectName` naming convention and expose a specified set of service data. This enables deeper visibility into application health: you can monitor application services along with the hosting application server and its internal services. For more information, see [Instrumenting Java Applications for Management](#) in *Configure Resources for Monitoring*.

**Note:** Although instrumentation provides deeper visibility into Java application health, it is not required for application monitoring.

## 4.4.2. Create an Application

1. Click **Browse** on the **Resources** tab.
2. Click **New Application** in the **Tools** menu.
  - The **New Application** page appears.

3. In the "General Properties" section of the **\*New Application** page, enter:
  - **Name** — Supply the name of the application.
  - **Description** — Enter a description of the application, if desired.
  - **Location** — Enter the location of the application, if desired.
4. In the "Application Properties" section of the **New Application** page, provide desired contact information:
  - **Engineering Contact**
  - **Business Owner**
  - **IT Contact**
5. Click **OK**.
  - The **Inventory** page for the application appears

The screenshot shows the 'Edit Application' page for an application named 'Green Savers 2'. The 'General Properties' section includes fields for Description, Location, Resource Type (Application), Date Created (01/05/2011 08:48 AM), Date Modified (01/05/2011 08:48 AM), and Modified By (HQ Administrator (hqadmin)). The 'Application Properties' section lists Application Type (Generic Application), Business Owner, and IT Operations Contact. The 'Service Counts' section shows Total Services: 0 and Services By Type. The 'Services' section contains a table with columns: Dependencies, Services, EntryPoint, Service Type, Res Type, Host Server, and Availability. A dropdown menu shows 'Total: 0 Items Per Page: 15'. The 'Groups containing this resource' section lists Groups and their descriptions, with a table showing 'Total: 0 Items Per Page: 15'.

### 4.4.3. Add Services to an Application

1. In the "Services" section of the **Inventory** page for the application, click **Add to List**.
  - The **Edit Application** page appears.

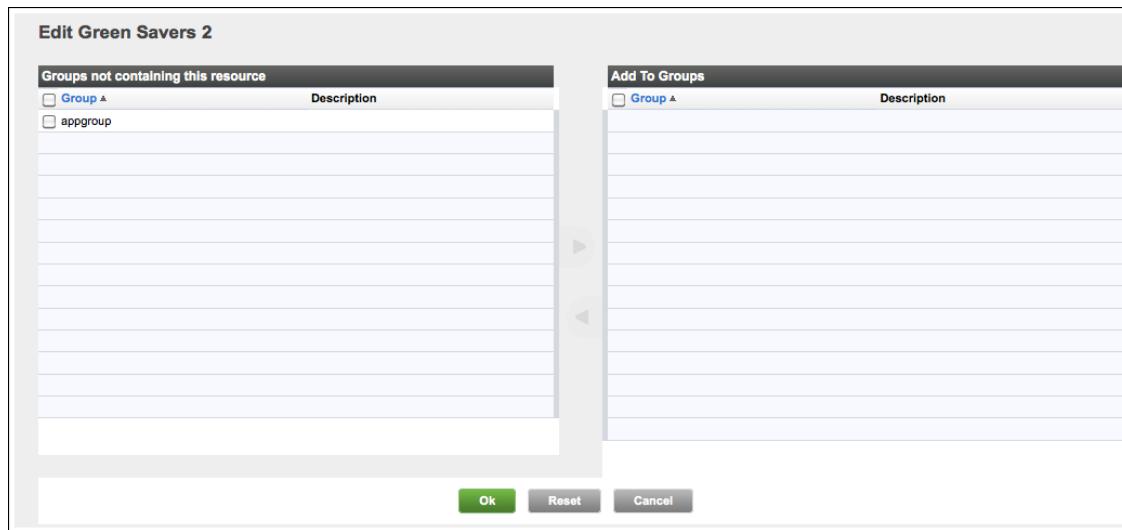
The screenshot shows the 'Edit Green Savers 2' dialog. On the left, the 'Services' pane displays a list of services with checkboxes and descriptions, including various PostgreSQL and ActiveMQ components. On the right, the 'Add Services' pane is empty. At the bottom, there are 'Ok', 'Reset', and 'Cancel' buttons.

2. Checkmark desired services and click the blue arrow to move them from the **Services** column to the **Add Services** column. (The arrow is enabled when you select a resource.)

3. After moving desired resources to the **Add Services** column, click **OK**.

#### 4.4.4. Add Application to a Group

1. In the "Groups" section of the **Inventory** page for the application, click **Add to List**.
  - The **Edit Application** page lists existing mixed groups of applications.



2. Checkmark desired groups and click the blue arrow to move them from the **Groups not containing this resource** column to the **Add to Groups** column. (The arrow is enabled when you select a resource.)
3. After moving desired resources to the **Add to Groups** column, click **OK**.

#### 4.4.5. Monitoring an Application with Indicator Charts

After you have created an application and added services to it, you can start monitoring all the application's components as a whole using indicator charts.

Initially, the **Monitor** tab displays only the availability metric indicator for the new application. The services you added are listed, along with "Host Servers" (the servers that host the listed services), on the **Resources** minitab, and through those you can add more metrics to the display.

## 5. View and Manage Resource Data

- [Section 5.1, “View Inventory Properties for a Resource”](#)
- [Section 5.2, “Create a Platform, Server, or Service Manually”](#)
- [Section 5.3, “Remove Resources from Hyperic Inventory”](#)

## 5.1. View Inventory Properties for a Resource

In the Hyperic user interface, a resource's **Inventory Page** presents a variety of resource properties and key information about the resource's closest "relatives" in the resource hierarchy. The information on the **Inventory** page varies by both inventory type and resource type, and include auto-discovered and user-configured resource properties. For a fundamental inventory type — a platform, server, or service — the **Inventory Page** contains a "Configuration Properties" section, where you can view and update the properties that enable or tailor monitoring behaviors for the resource.

See the pages below for information about the **Inventory** page for each inventory type.

- [Section 5.1.1, “View Inventory Properties for a Platform”](#)
- [Section 5.1.2, “View Inventory Properties for a Server”](#)
- [Section 5.1.3, “View Inventory Properties for a Service”](#)
- [Section 5.1.4, “View Inventory Properties for a Group”](#)
- [Section 5.1.5, “View Inventory Properties for an Application”](#)

### Learn About Resources in Hyperic

See [Section 1.2, “Resources, Resource Types and Inventory Types”](#).

## 5.1.1. View Inventory Properties for a Platform

Topics marked with \* relate to features available only in vFabric Hyperic.

This page describes the contents of the **Inventory** page for a platform.

- [Navigate to the Inventory Page for a Platform](#)
- [Inventory Page Header](#)
- [General Properties for a Platform](#)
- [Type and Network Properties for a Platform](#)
- [Servers on a Platform](#)
- [Services on a Platform](#)
- [Groups Containing a Platform](#)
- [Configuration Properties for a Platform](#)

### Learn about Platforms

See [Hyperic Inventory Model](#).

## Navigate to the Inventory Page for a Platform

To display the **Inventory** page for a platform, use **Resources > Browse > Platforms** to navigate to the platform, and click the **Inventory** tab.

### Inventory Page Header

The sections below describe the data and controls that appear at the top of the **Inventory** page for a platform.

#### Resource Properties

The properties at the top of the **Inventory** page for a platform provide identifying information about the managed product. The inventory properties displayed for a platform vary slightly by platform type, but typically will include most of these properties.

The properties displayed in the screenshot below are:

- **Description**
- **Owner** - By default, the Hyperic user under whose account the resource was added to inventory. Click **Change...** to assign a different resource owner.
- **Secondary DNS**
- **Default Gateway**
- **Vendor**
- **Vendor Version**
- **IP Address**
- **Primary DNS**
- **CPU Speed**
- **OS Version**
- **RAM**
- **Architecture**

The screenshot shows the VMware Inventory page for a Red Hat Enterprise Linux 5 platform. At the top left, it says "Browse > demo2.hyperic.net". Below that, there's a table of resource properties:

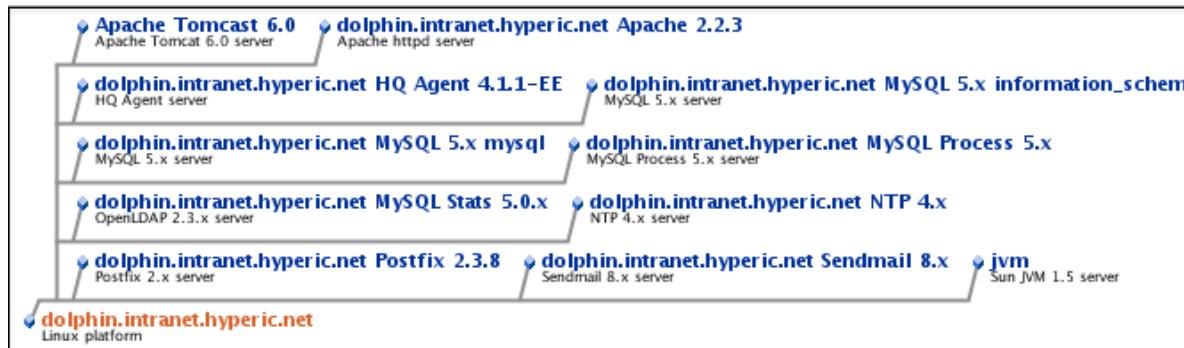
Description: Red Hat Enterprise Linux 5	Owner: HQ Administrator ( <a href="#">hqadmin</a> ) - <a href="#">Change...</a>	Secondary DNS : 208.67.220.220
Default Gateway : 10.0.0.1	Vendor: Red Hat	Primary DNS : 216.93.160.11
Vendor Version : Enterprise Linux 5	IP Address : 10.0.0.145	RAM : 7992 MB
CPU Speed : 8 @ 2500 MHz (2x4)	OS Version : 2.6.18-8.el5	
Architecture : x86_64		

At the bottom of the table are two buttons: "Map" and "Tools Menu".

The plugin developer controls which resource properties are displayed at the top of a resource's **Inventory** page: any properties enclosed in a `<properties>` element for a resource type appear in the page header when you browse to an instance of that type.

## Map Control for a Platform

Click the **Map** control in the page header for a graphical view the servers on the platform. The platform is displayed at the bottom of the map; servers are displayed above the platform. Resource names are in bold and the resource type is displayed just below in smaller type. Click a resource name to navigate to that server.



## Tools Menu for a Platform

The screenshot below is the **Tools** menu for a platform.



When a platform is selected, the **Tools** menu has the following commands:

- **Configure Platform** — Opens the **Configuration Properties** page for the platform, where you can edit the resource's configuration properties.
- **Clone Platform** — Creates a new platform with the same configuration as an existing platform. For more information, see [Section 5.2.2, “Clone a Platform”](#).
- **Delete Platform** — Delete the platform, its platform services, servers, and the services in the servers from inventory.
- **New Server** — Displays the **New Server** page, where you can manually add a new server to the platform. (For instance, a server that was not auto-discovered.) For more information, see [Section 5.2.4, “Create a Server”](#).
- **New Platform Service** — Displays the **New Service** page, where you can manually add a new service, for instance a remotely monitored network service, to the platform. For more information, see [Section 5.2.3, “Create a Platform Service”](#).

- **New Auto-Discovery** — See [Section 3.2, “Scan a Platform On-Demand”](#)
- **Enable All Alerts On This Agent** —
- **Disable All Alerts On This Agent**
- **Add to Dashboard Favorites** — Adds the platform to the **Favorite Resources** portlet on the the current Hyperic user's Dashboard.
- **Add to Group** — Opens the **Group Manager** page, which lists the groups to which the platform may be added. You can add a platform to a group if:
  - You have permission to access the group, and:
    - The group is a mixed group that contains platforms, servers, and services.
    - The group is a compatible group of the selected platform's platform type.

## General Properties for a Platform

The **General Properties** section of the **Inventory** page for a platform lists the following information:

- **Description** — A description of the platform. This is an optional, user-configured value.
- **Date Created** — The date the platform was added to the Hyperic inventory
- **Location**
- **Date Modified, Modified By** — The date the platform was last modified and the user who modified it.
- **Resource Type** — The platform type.

Click the **Edit** button to open a page where you can edit the platform's Name or Description.

General Properties	
Description:	Red Hat Enterprise Linux 5
Location:	
Resource Type:	Linux
<b>EDIT...</b>	

## Type and Network Properties for a Platform

The **Type and Network Properties** section of the **Inventory** page for a platform lists the following information:

- **Platform Type** — The type of platform (This value cannot be changed.)
- **Agent Connection** — The IP address:port pair that the Hyperic Server will use to connect to the Hyperic Agent on the platform device.
  - In the case of a platform type that is monitored by a Hyperic Agent on a different platform, such as a network or virtual host, this property identifies the agent that manages the platform.
- **Fully Qualified Domain Name** — The platform's FQDN.
- **IP Address, MAC Address, Netmask** — One or more sets of these identifiers for the platform. There is at a minimum one set for the loopback (local) IP address — 127.0.0.1 — and then additional sets for each network interface on the device.

Click the **Edit** button to open a page where you can selected platform properties.

Type & Network Properties	
Platform Type:	Linux
Agent Connection:	localhost:2144
IP Address:	10.0.0.145
MAC Address:	00:1F:29:C4:14:4C
IP Address:	127.0.0.1
MAC Address:	00:00:00:00:00:00
<b>EDIT...</b>	

## Servers on a Platform

The "Servers" section lists the following information for each server on the platform.

- **Server** — The resource name, presented as a hyperlink you can click to navigate to the server.
- **Server Type**
- **Install Path**
- **Description**
- **Availability** — Current availability of the server.

There are two controls available:

- **New** — Click to add a server to the platform.
- **Delete** — Click to delete a server from the platform. Services in the server will also be deleted.

Servers				
Total Servers: 14				
Total By Type:		MySQL Process 5.x (1)	MySQL 5.x (6)	HQ Agent (1)
		NTP 4.x (1)	Tomcat 6.0 (1)	Tomcat 5.5 (1)
		Apache httpd (2)	JBoss 4.0 (1)	
View: All Server Types ▾				
<input type="checkbox"/>	Server	Server Type	Install Path	Description
<input type="checkbox"/>	demo2.hyperic.net Apache 2.2.3	Apache httpd	/usr	mod_status monitor
<input type="checkbox"/>	demo2.hyperic.net Apache 2.2.9	Apache httpd	/sw/apache/httpd229	mod_status monitor
<input type="checkbox"/>	demo2.hyperic.net HQ Agent 4.3.0-EE	HQ Agent	/sw/hyperic/hyperic-hq-agent-4.3.0-EE	Hyperic HQ monitor Agent
<input type="checkbox"/>	demo2.hyperic.net HQ JBoss 4.x	JBoss 4.0	/sw/hyperic/server-4.3.0-EE/hq-engine/server/default	
<input type="checkbox"/>	demo2.hyperic.net HQ Tomcat 5.5	Tomcat 5.5	/sw/hyperic/server-4.3.0-EE/hq-engine/server/default/deploy/jboss-web.deployer	
<input type="checkbox"/>	demo2.hyperic.net HQ Tomcat 6.0	Tomcat 6.0	/sw/hyperic/server-4.3.0-EE/hq-engine/server/default/deploy/jboss-web.deployer	
<input type="checkbox"/>	demo2.hyperic.net MySQL 5.x arc	MySQL 5.x	/usr	
<input type="checkbox"/>	demo2.hyperic.net MySQL 5.x hqdb	MySQL 5.x	/usr	
<input type="checkbox"/>	demo2.hyperic.net MySQL 5.x information_schema	MySQL 5.x	/usr	
<input type="checkbox"/>	demo2.hyperic.net MySQL 5.x iq	MySQL 5.x	/usr	
<input type="checkbox"/>	demo2.hyperic.net MySQL 5.x mysql	MySQL 5.x	/usr	
<input type="checkbox"/>	demo2.hyperic.net MySQL 5.x test	MySQL 5.x	/usr	
<input type="checkbox"/>	demo2.hyperic.net MySQL Process 5.x	MySQL Process 5.x	/usr	
<input type="checkbox"/>	demo2.hyperic.net NTP 4.x	NTP 4.x	/usr/sbin/ntpd	

## Services on a Platform

This section lists the following information for each platform service on the platform:

- **Service** — The resource name, presented as a hyperlink you can click to navigate to the service.
- **Description**
- **Availability** — Current availability of the platform service.

There are three controls available:

- **View** — This pull-down allows you to filter the list to display only platform services of a selected type.
- **New** — Click to add a platform service to the platform.
- **Delete** — Click to delete a platform service from the platform.

Services		
View:	Description	Availability
<input type="checkbox"/> Service ▾		
<input type="checkbox"/> comcast.net		
<input type="checkbox"/> demo2.hyperic.net HTTP 7080		
<input type="checkbox"/> demo2.hyperic.net Linux CPU 1 (2500Mhz Intel Xeon)		
<input type="checkbox"/> demo2.hyperic.net Linux CPU 2 (2500Mhz Intel Xeon)		
<input type="checkbox"/> demo2.hyperic.net Linux CPU 3 (2500Mhz Intel Xeon)		
<input type="checkbox"/> demo2.hyperic.net Linux CPU 4 (2500Mhz Intel Xeon)		
<input type="checkbox"/> demo2.hyperic.net Linux CPU 5 (2500Mhz Intel Xeon)		
<input type="checkbox"/> demo2.hyperic.net Linux CPU 6 (2500Mhz Intel Xeon)		
<input type="checkbox"/> demo2.hyperic.net Linux CPU 7 (2500Mhz Intel Xeon)		
<input type="checkbox"/> demo2.hyperic.net Linux CPU 8 (2500Mhz Intel Xeon)		
<input type="checkbox"/> demo2.hyperic.net Linux File System /dev/cciss/c0d0p1 mounted on /boot (local/ext3)		
<input type="checkbox"/> demo2.hyperic.net Linux File System /dev/cciss/c0d0p2 mounted on / (local/ext3)		
<input type="checkbox"/> demo2.hyperic.net Linux File System /dev/cciss/c0d0p5 mounted on /home (local/ext3)		
<input type="checkbox"/> demo2.hyperic.net Linux File System /dev/cciss/c0d0p6 mounted on /var (local/ext3)		
<input type="checkbox"/> demo2.hyperic.net Linux File System /dev/cciss/c0d0p7 mounted on /sw (local/ext3)		
<b>NEW...</b>		
<b>DELETE</b>		

Total: 26 Items Per Page: 15

◀ ▶ 1 2

## Groups Containing a Platform

This section lists the following information for each the group of which the platform is a member.

- **Group** — The resource name, presented as a hyperlink you can click to navigate to the group.
- **Description**

There are two controls available:

- **Add to List** — Click to add the platform to a group.
- **Remove From List** — If you have checkmarked one or more groups in the list, this control allows you to remove the resource from the selected groups.

Groups containing this resource	
Group	Description
<input type="checkbox"/> All	
<input type="checkbox"/> All Platforms	
<input type="checkbox"/> All Platforms Group	
<input type="checkbox"/> Apache Group	
<input type="checkbox"/> CW Demo2	
<input type="checkbox"/> CW PlatSrvSvc	
<input type="checkbox"/> Customer Support West Group	All resources for west coast ...
<input type="checkbox"/> Demo Group	
<input type="checkbox"/> EdmundsLinux	
<input type="checkbox"/> Linux Group of 10	
<input type="checkbox"/> Linux Machines 2	
<input type="checkbox"/> Linux Platforms	
<input type="checkbox"/> Mixed Group	
<input type="checkbox"/> Sopera	
<input type="checkbox"/> Test	

Total: 22 Items Per Page:

## Configuration Properties for a Platform

This section displays the configuration properties for the platform.

- **Shared** — These properties are typically only present for platform types that Hyperic does not auto-discover, and vary by platform type.
- **Monitoring** — These properties control log and configuration tracking for the platform. For more information see [event tracking](#) in *Configure Monitoring Options*.

Configuration Properties	
Shared	
<i>This resource does not have any shared Configuration Properties.</i>	
Monitoring	
platform.log_track.enable true	platform.log_track.level Debug
platform.log_track.include	platform.log_track.exclude
platform.log_track.files	platform.config_track.enable true
platform.config_track.files /etc/hosts	
<input type="button" value="EDIT..."/>	

## 5.1.2. View Inventory Properties for a Server

Topics marked with \* relate to features available only in vFabric Hyperic.

This page describes the contents of the **Inventory** page for a server.

- [Inventory Page for a Server](#)
- [Inventory Page Header for a Server](#)
  - [Resource Properties](#)
  - [Map Control for a Server](#)
  - [Tools Menu for a Server](#)
- [General Properties for a Server](#)
- [Type and Host Properties](#)
- [Services on a Server](#)
- [Groups Containing a Server](#)
- [Configuration Properties for a Server](#)

### Learn about Servers

See [Hyperic Inventory Model](#).

## Inventory Page for a Server

To display the **Inventory** page for a server, use **Resources > Browse > Servers** to navigate to the server, and click the **Inventory** tab.

In vFabric Hyperic, a user can view and modify resources only to the extent that the user's role(s) permit. For more information see [Understand Roles in vFabric Hyperic](#) in *Manage Hyperic Users and Roles*.

### Inventory Page Header for a Server

The sections below describe the data and controls that appear at the top of the **Inventory** page for a server.

#### Resource Properties

The properties at the top of the **Inventory** page for a server provide identifying information about the managed product. The inventory properties displayed for a server vary by server type, but typically will include vendor name and software version.

The properties displayed in the screenshot below (for a JBoss server) are:

- Java Vendor
- Owner - By default, the Hyperic user under whose account the resource was added to inventory. Click **Change...** to assign a different resource owner.
- Build Date
- JBoss Version
- Version Name

The plugin developer controls which resource properties are displayed at the top of a resource's **Inventory** page: any properties enclosed in a `<properties>` element for a resource type appear in the page header when you browse to an instance of that type.

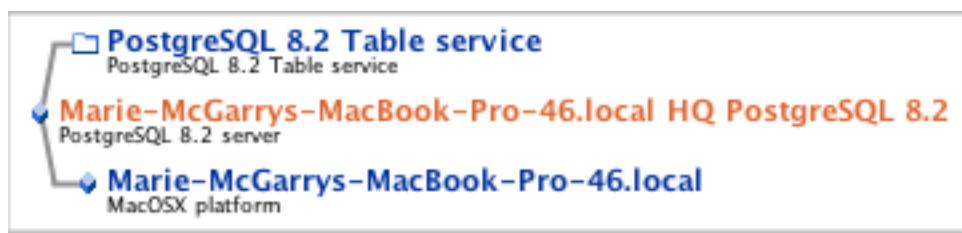
[Browse > Marie-McGarrys-MacBook-Pro-46.local HQ JBoss 4.x](#)  
[Return to Marie-McGarrys-MacBook-Pro-46.local HQ JBoss 4.x](#)

Description:	Owner: HQ Administrator ( <a href="#">hqadmin</a> ) - <a href="#">Change...</a>
Java Vendor : Apple Inc.	Build Date : July 18 2008
JBoss Version : 4.2.3	Version Name : Trinity

[Map](#) [Tools Menu](#)

#### Map Control for a Server

Click the **Map** control in the page header to view the server's child services(s) and its parent platform.



The map in the screenshot above, for a PostgreSQL 8.2 server, shows that:

- The server has multiple children of resource type "PostgreSQL 8.2 Table service" - which have been automatically grouped into an autogroup with the same name as the resource type.
- The server runs on the platform of type "MacOSX" named "Marie-McGarrys-MacBook-Pro-46.local".

Click the name of a child or parent resource to view its **Monitor** page.

## Tools Menu for a Server

The screenshot below is the **Tools** menu for a server.



When a server is selected, the **Tools** menu has the following commands:

- **Configure Server** — Opens the **Configuration Properties** page for the server, where you can edit the resource's configuration properties.
- **Delete Server** — Delete the server and all its child services from inventory.
- **New Service** — Displays the **New Service** page, where you can manually add a new child service to the server. (For instance, a service that was not auto-discovered.)
- **Add to Dashboard Favorites** — Adds the server to the **Favorite Resources** portlet on the the current Hyperic user's Dashboard.
- **Add to Group** — Opens the **Group Manager** page, which lists any compatible groups of the same type as the server.

In vFabric Hyperic, a user can view and modify resources only to the extent that the user's role(s) permit. For more information see [Understand Roles in vFabric Hyperic](#) in *Manage Hyperic Users and Roles*.

## General Properties for a Server

The **General Properties** section of the **Inventory** page for a server lists the following information about the server:

- Description — A description of the server. This is an optional, user-configured value.
- Resource type — The server type.
- Date Created — The date the server was added to the Hyperic inventory
- Date Modified, Modified By — The date the server properties were last modified and the user who modified them

Click the **Edit** button to open a page where you can edit the server's Name or Description.

General Properties		
Description:	Date Created: 08/25/2010 11:39 AM	
Resource Type: JBoss 4.2	Date Modified: 08/25/2010 11:39 AM	
<b>EDIT...</b>	Modified By: HQ Administrator ( <a href="#">hqadmin</a> )	

## Type and Host Properties

The **Type and Host Properties** section of the **Inventory** page for a server lists the following information about the server:

- Install Path — The path where this server is installed.
- Host Platform — The platform where the server runs.

Click the **Edit** button to open a page where you can edit the server's Install Path.

Type & Host Properties	
Install Path: /Applications/hqEE44-1509/server-4.4.0-EE/hq-engine /server/default	Host Platform: Marie-McGarrys-MacBook-Pro-46.local
<b>EDIT...</b>	

## Services on a Server

The **Services** section of the **Inventory** page for a server contains

- The total number of child services on the server, and the number of services of each service type discovered on the server.
- The following columns for each service:
  - Service — Name of the service
  - Service Type — Resource type of the service.
  - Description — Text description of the service. This is an optional, user-configured value.
  - Availability — Current availability of the service.

To delete one or more services from inventory, click the box to the left of each service you wish to delete, and click **Delete**.

## Groups Containing a Server

The **Groups Containing This Resource** section of the **Inventory** page for a server lists the groups of which this server is a member. To view the **Inventory** page for a group, click its name.

Groups containing this resource		Description
<input type="checkbox"/>	Group	A
<input type="checkbox"/>	All DC2	
<input type="checkbox"/>	Tomcat Servers	
<a href="#">ADD TO LIST...</a>	<a href="#">REMOVE FROM LIST</a>	Total: 2 Items Per Page: 15

## Configuration Properties for a Server

The **Configuration Properties** section of the **Inventory** page for a resource contains the configuration options and currently selected values for the resource. Configuration properties for the resource are presented in three sections:

- **Shared** — The properties in this section relate to more than one management function, for instance both monitoring and control actions.
- **Monitoring** — These properties set options related to log tracking, configuration tracking, and, for servers, here is where you can disable auto-discovery of child services.
- **Control** — If Hyperic supports control actions for the currently selected resource type, this section includes any configuration properties required to enable resource control, for example, the path of the start script to use to start a server.

Click **Edit** to open the **Edit Configuration Properties** page for the currently selected resource.

Configuration Properties	
<b>Shared</b>	
<code>java.naming.provider.url jnp://0.0.0.0:2099</code>	<code>java.naming.security.principal</code>
<code>java.naming.security.credentials *****</code>	
<b>Monitoring</b>	
<code>server.log_track.enable false</code>	<code>server.log_track.level</code>
<code>server.log_track.include</code>	<code>server.log_track.exclude</code>
<code>server.log_track.files ..../logs/server.log</code>	<code>server.config_track.enable false</code>
<code>server.config_track.files</code>	
Auto-Discovery for EJB3s, Entity EJBs, and other services is ON	
<b>Control</b>	
<code>program /Applications/hqEE44-1509/server-4.4.0-EE/hq-engine/bin/run.sh</code>	<code>start.args</code>
<code>stop.program</code>	<code>stop.args</code>
<code>configSet default</code>	<code>prefix</code>
<code>timeout</code>	
<a href="#">EDIT...</a>	

The plugin developer defines each configuration property for a resource type in the plugin descriptor. The plugin or the descriptor may set the initial value for a configuration property. For some types of resources, you may need to supply configuration property values to enable monitoring.

## 5.1.3. View Inventory Properties for a Service

Topics marked with \* relate to features available only in vFabric Hyperic.

This page describes the contents of the **Inventory** page for a service.

- [Inventory Page for a Service](#)
- [Inventory Page Header for a Service](#)
  - [Resource Properties](#)
  - [Map Control for a Service](#)
  - [Tools Menu for a Service](#)
- [General Properties for a Service](#)
- [Groups Containing a Service](#)
- [Configuration Properties for a Service](#)

### Learn about Services

See [Hyperic Inventory Model](#).

## Inventory Page for a Service

To display the **Inventory** page for a service, use **Resources > Browse > Services** to navigate to the service, and click the **Inventory** tab.

**Browse : DB Mail IMAP**  
Return to DB Mail IMAP

Description: Owner: Mirko Piuhar (mirko) - Change...

**General Properties**

Host Platform:	<a href="#">angilas.mirko-piuhar.de</a>	Date Created:	09/30/2008 12:55 PM
Description:		Date Modified:	02/19/2009 01:53 PM
Resource Type:	MultiProcess	Modified By:	System User (admin)

**Groups containing this resource**

<input type="checkbox"/> Group ▾	Description
<input type="checkbox"/> All	
<input type="checkbox"/> All Services Group	

Total: 2 Items Per Page: 15

**Configuration Properties**

Shared	process.query Pid.PidFile.eq=/var/run/dbmail/dbmail-imapd.pid
Monitoring	This resource does not have any monitoring Configuration Properties.
Control	This resource does not have any control Configuration Properties.

## Inventory Page Header for a Service

The sections below describe the data and controls that appear at the top of the **Inventory** page for a service.

### Resource Properties

The properties at the top of the **Inventory** page for a service provide identifying information including:

- \*Description \*
- **Owner** - By default, the Hyperic user under whose account the resource was added to inventory. Click **Change...** to assign a different resource owner.

The plugin developer controls which resource properties are displayed at the top of a resource's **Inventory** page: any properties enclosed in a `<properties>` element for a resource type appear in the page header when you browse to an instance of that type.

**General Properties**

Host Platform:	<a href="#">angilas.mirko-piuhar.de</a>	Date Created:	09/30/2008 12:55 PM
Description:		Date Modified:	02/19/2009 01:53 PM
Resource Type:	MultiProcess	Modified By:	System User (admin)

## Map Control for a Service

The **Map** control presents graphical view of the service and the resources that are related to it. The map illustrates hierarchical inventory relationships, and a resource's membership in groups or applications.

The screenshot below is a resource map for a service of type "ActiveMQ Embedded 5.3 Topic".

- The service runs in an "ActiveMQ Embedded 5.3" server, which is hosted on a "MacOSX" platform
- The service is part of an application called "myap".



## Tools Menu for a Service

The screenshot below is the **Tools** menu for a service.



When a service is selected, the **Tools** menu has the following commands:

- **Configure Service** — Opens the **Configuration Properties** page for the service, where you can edit the resource's configuration properties.
- **Delete Service** — Delete service from inventory.
- **Add to Dashboard Favorites** — Adds the service to the **Favorite Resources** portlet on the the current Hy- peric user's Dashboard.
- **Add to Group** — Opens the **Group Manager** page, which lists the groups to which the service may be added. You can add a service to a group if:
  - You have permission to access the group, and:
    - The group is a mixed group that contains platforms, servers, and services.
    - The group is a compatible group of the selected service's service type.

## General Properties for a Service

The **General Properties** section of the **Inventory** page for a service lists the following information:

- **Description** — A description of the service. This is an optional, user-configured value.
- **Date Created** — The date the service was added to the Hyperic inventory

- **Location**
- **Date Modified, Modified By** — The date the service was last modified and the user who modified it.
- **Resource Type** — The service type.

Click the **Edit** button to open a page where you can edit the service's Name or Description.

General Properties	
Host Platform:	<a href="#">angilas.mirko-pluhar.de</a>
Description:	
Resource Type:	MultiProcess
<a href="#">EDIT...</a>	
Date Created:	09/30/2008 12:55 PM
Date Modified:	02/19/2009 01:53 PM
Modified By:	System User (admin)

## Groups Containing a Service

This "Groups Containing this Resource\*" section lists the following information for each the group of which the service is a member.

- **Group** — The resource name, presented as a hyperlink you can click to navigate to the group.
- **Description**

There are two controls available:

- **Add to List** — Click to add the service to a group.
- **Remove From List** — If you have checkmarked one or more groups in the list, this control allows you to remove the resource from the selected groups.

Groups containing this resource	
	Description
<input type="checkbox"/> <a href="#">Group A</a>	
<input type="checkbox"/> <a href="#">All DC2</a>	
<input type="checkbox"/> <a href="#">Tomcat Servers</a>	
<a href="#">ADD TO LIST...</a>	<a href="#">REMOVE FROM LIST</a>
Total: 2 Items Per Page: <a href="#">15</a>	

## Configuration Properties for a Service

This section displays the configuration properties for the service.

- **Shared** — These properties vary by service type.
- **Monitoring** — These properties control log and configuration tracking for the service. For more information see [event tracking](#) in *Configure Monitoring Options*.

Configuration Properties	
<b>Shared</b>	
	process.query Pid.PidFile.eq=/var/run/dbmail/dbmail-imapd.pid
<b>Monitoring</b>	
	<i>This resource does not have any monitoring Configuration Properties.</i>
<b>Control</b>	
	<i>This resource does not have any control Configuration Properties.</i>
	<a href="#">EDIT...</a>

## 5.1.4. View Inventory Properties for a Group

Topics marked with \* relate to features available only in vFabric Hyperic.

This page describes the contents of the **Inventory** page for a group.

- [Navigate to the Inventory Page for a Group](#)
  - [Inventory Page Header for a Group](#)
  - [Resource Properties for a Group](#)
  - [Map Control for a Compatible Group](#)
  - [Tools Menu for a Group](#)
- [General Properties for a Group](#)
- [Resources](#)
- [Roles a Group is Assigned To](#)

### Learn about Groups

See [Hyperic Inventory Model](#).

## Navigate to the Inventory Page for a Group

To display the **Inventory** page for a compatible or mixed group, use:

- **Resources > Browse > Compatible Groups/Clusters**, or
- **Resources > Browse > Mixed Groups**

and click the **Inventory** tab.

In vFabric Hyperic, a user can view and modify resources only to the extent that the user's role(s) permit. For more information see [Understand Roles in vFabric Hyperic](#) in *Manage Hyperic Users and Roles*.

Browse > All Apache Servers  
Return to All Apache Servers

Description: Owner: Don Baron (dbaron) - Change...  
Map Tools Menu

Monitor Inventory Control Alert Views

**General Properties**

Description:	Date Created: 10/15/2008 02:46 PM
Location:	Date Modified: 02/11/2010 11:47 AM
Resource Type: Group	Modified By: Don Baron (dbaron)

**Resources** - Compatible resource type: Apache httpd  
Total: 3

Name	Type	Description	Availability
angilas.mirko-pluhar.de Apache 2.2.3	Apache httpd	mod_status monitor	✓
demo2.hyperic.net Apache 2.2.9	Apache httpd	mod_status monitor	✓
panther Apache 2.2.3	Apache httpd	mod_status monitor	✓

**Roles Assigned To**

Name	Description
Webmaster	
asmorrison1 Role	

Click the thumbnail below for a screenshot of a mixed group's **Inventory** page.

Browse > Customer Support West Group  
[Return to JBoss Group](#)

Description: All resources for west coast .... Owner: System User (admin) - [Change...](#)  
[Tools Menu](#)

[Inventory](#) [Views](#)

**General Properties**

Description: All resources for west coast ...	Date Created: 12/16/2008 11:15 AM
Location:	Date Modified: 02/11/2010 11:47 AM
Resource Type: Group	Modified By: System User (admin)

[EDIT...](#)

**Resources - Platforms, Servers & Service resource types.**

Total: 7	
Resources by Type:	
Linux (4)	MySQL 5.x (2)
JBoss 4.0 (1)	
<input type="checkbox"/> <a href="#">angilas.mirko-pluhar.de</a>	Type: Linux Description: Debian 4.0 Availability:
<input type="checkbox"/> <a href="#">bear.intranet.hyperic.net</a>	Type: Linux Description: CentOS 4.3 Availability:
<input type="checkbox"/> <a href="#">demo2.hyperic.net</a>	Type: Linux Description: Red Hat Enterprise Linux 5 Availability:
<input type="checkbox"/> <a href="#">demo2.hyperic.net HQ JBoss 4.0</a>	Type: JBoss 4.0 Description: Availability:
<input type="checkbox"/> <a href="#">demo2.hyperic.net MySQL 5.x hqdb</a>	Type: MySQL 5.x Description: Availability:
<input type="checkbox"/> <a href="#">demo2.hyperic.net MySQL 5.x test</a>	Type: MySQL 5.x Description: Availability:
<input type="checkbox"/> <a href="#">dolphin.intranet.hyperic.net</a>	Type: Linux Description: CentOS 4.2 (VM Guest of <a href="/Resource.do?eid=1:10510">esx2.intranet.hyperic.net</a>) Availability:

[ADD TO LIST...](#) [REMOVE FROM LIST](#) Total: 7 Items Per Page: 15

**Roles Assigned To**

Name	Description
<input type="checkbox"/> <a href="#">ITCTier1SupportRole</a>	Description: ITConvergence Tier1 Support
<input type="checkbox"/> <a href="#">asmorrison1 Role</a>	

[ADD TO LIST...](#) [REMOVE FROM LIST](#) Total: 2 Items Per Page: 15

## Inventory Page Header for a Group

The sections below describe the data and controls that appear at the top of the **Inventory** page for a group.

## Resource Properties for a Group

The properties at the top of the **Inventory** page for either a compatible or mixed group are:\

- \*Description \*
- **Owner** — By default, the Hyperic user under whose account the resource was added to inventory. Click [Change...](#) to assign a different resource owner.

## Map Control for a Compatible Group

The **Map** control is present on the **Inventory** tab for a compatible group, not for a mixed group. The map for a compatible group shows the members of the group.

The screenshot below is a resource map for compatible group that contains servers of type "VMware VI3 VM" - the name of each member resource is shown as a hyperlink.

 <b>ESX Vms 2</b> VMware VI3 VM group	 <b>49er-ubuntu-6</b> VMware VI3 VM server	 <b>bear-centos-4.3</b> VMware VI3 VM server	 <b>bronco-centos-4.3</b> VMware VI3 VM server	 <b>cardinal-debian-3.1</b> VMware VI3 VM server	 <b>falcon-win-2003</b> VMware VI3 VM server	 <b>gopher-debian-4.0</b> VMware VI3 VM server
	 <b>heartbeat-db-01</b> VMware VI3 VM server	 <b>mothra</b> VMware VI3 VM server	 <b>mssql01</b> VMware VI3 VM server	 <b>mssql02</b> VMware VI3 VM server	 <b>packer-centos-4.3</b> VMware VI3 VM server	 <b>panther-win-2003</b> VMware VI3 VM server
	 <b>ram-gentoo</b> VMware VI3 VM server	 <b>rodan</b> VMware VI3 VM server	 <b>saint-win-2000</b> VMware VI3 VM server	 <b>seahawk-sles-9</b> VMware VI3 VM server	 <b>swlib-01</b> VMware VI3 VM server	 <b>viking-centos-4.3</b> VMware VI3 VM server
	 <b>Virtual Center</b> VMware VI3 VM server	 <b>vmlibsd-001</b> VMware VI3 VM server	 <b>vmlin-011</b> VMware VI3 VM server	 <b>vmlin-011</b> VMware VI3 VM server	 <b>vmlin-012</b> VMware VI3 VM server	 <b>vmlin-012</b> VMware VI3 VM server
	 <b>vmlin-013</b> VMware VI3 VM server	 <b>vmlin-013</b> VMware VI3 VM server	 <b>vmlin-014 (Ubuntu Server 8.04)</b> VMware VI3 VM server	 <b>vmlin-014 (Ubuntu Server 8.04)</b> VMware VI3 VM server	 <b>vmlin-015</b> VMware VI3 VM server	 <b>vmlin-015</b> VMware VI3 VM server
	 <b>vmlin-015</b> VMware VI3 VM server	 <b>vmlin-300</b> VMware VI3 VM server	 <b>vmlin-supapp01</b> VMware VI3 VM server	 <b>vmlin-supdb01</b> VMware VI3 VM server	 <b>vmsol-002</b> VMware VI3 VM server	 <b>vmsol-002</b> VMware VI3 VM server
	 <b>vmlin-013</b> VMware VI3 VM server	 <b>vmlin-013</b> VMware VI3 VM server	 <b>vmlin-014</b> VMware VI3 VM server	 <b>vmlin-014</b> VMware VI3 VM server	 <b>vmlin-015</b> VMware VI3 VM server	 <b>vmlin-016</b> VMware VI3 VM server
	 <b>vmlin-016</b> VMware VI3 VM server	 <b>vmlin-018</b> VMware VI3 VM server	 <b>vmlin-018</b> VMware VI3 VM server	 <b>vmlin-019</b> VMware VI3 VM server	 <b>vmlin-019</b> VMware VI3 VM server	 <b>vmlin-020</b> VMware VI3 VM server
	 <b>vmlin-021</b> VMware VI3 VM server	 <b>vmlin-021</b> VMware VI3 VM server	 <b>Voltron</b> VMware VI3 VM server	 <b>Voltron</b> VMware VI3 VM server		

## Tools Menu for a Group

The screenshot below is the **Tools** menu for a group.



The **Tools** menu for a compatible or a mixed group has the following commands:

- **New Group** — Opens the **New Group** page, where you can create a new group.
- **Delete Group** — Deletes the group, but not its member resources.
- **Add to Dashboard Favorites** — Adds the group to the **Favorite Resources** portlet on the the current Hyperic user's Dashboard.
- **Add to Group** — Opens the **Group Manager** page, which lists the groups to which the group may be added. You can add a group to another group if:
  - You have permission to access the target group, and:
  - The target group is a mixed group that contains groups.
- **Schedule Downtime\*** — This option, available vFabric Hyperic, opens the **Schedule Downtime** popup, where you can schedule a period of time during which alerts for members of the group will not fire. For more information see [Schedule Downtime](#).

## General Properties for a Group

The **General Properties** section of the **Inventory** page for a service lists the following information:

- **Description** — A description of the service. This is an optional, user-configured value.
- **Date Created** — The date the service was added to the Hyperic inventory

- **Location**
- **Date Modified, Modified By** — The date the service was last modified and the user who modified it.
- **Resource Type** — The service type.

Click the **Edit** button to open a page where you can edit the service's Name or Description.

General Properties	
Description:	Date Created: 10/15/2008 02:46 PM
Location:	Date Modified: 02/11/2010 11:47 AM
Resource Type: Group	Modified By: Don Baron ( <a href="#">dbaron</a> )
<a href="#">EDIT...</a>	

## Resources

This section lists the following information for each the group of which the service is a member.

- **Group** — The resource name, presented as a hyperlink you can click to navigate to the group.
- **Description**

There are two controls available:

- **Add to List** — Click to add the service to a group.
- **Remove From List** — If you have checkmarked one or more groups in the list, this control allows you to remove the resource from the selected groups.

The following screenshot shows the **Resources** section for a compatible group

Resources - Compatible resource type: Apache httpd				
Total: 3				
<input type="checkbox"/>	Name	Type	Description	Availability
<input type="checkbox"/>	<a href="#">angilas.mirko-pluhar.de</a> Apache 2.2.3	Apache httpd	mod_status monitor	
<input type="checkbox"/>	<a href="#">demo2.hyperic.net</a> Apache 2.2.9	Apache httpd	mod_status monitor	
<input type="checkbox"/>	<a href="#">panther</a> Apache 2.2.3	Apache httpd	mod_status monitor	

[ADD TO LIST...](#) [REMOVE FROM LIST](#)

Total: 3 Items Per Page: 15

The following screenshot shows the **Resources** section for a mixed group

Resources - Platforms, Servers & Service resource types.				
Total: 7				
Resources by Type:				
	Linux (4)	MySQL 5.x (2)		
	JBoss 4.0 (1)			
<input type="checkbox"/>	Name	Type	Description	Availability
<input type="checkbox"/>	<a href="#">angilas.mirko-pluhar.de</a>	Linux	Debian 4.0	
<input type="checkbox"/>	<a href="#">bear.intranet.hyperic.net</a>	Linux	CentOS 4.3	
<input type="checkbox"/>	<a href="#">demo2.hyperic.net</a>	Linux	Red Hat Enterprise Linux 5	
<input type="checkbox"/>	<a href="#">demo2.hyperic.net</a> JBoss 4.0	JBoss 4.0		
<input type="checkbox"/>	<a href="#">demo2.hyperic.net</a> MySQL 5.x hqdb	MySQL 5.x		
<input type="checkbox"/>	<a href="#">demo2.hyperic.net</a> MySQL 5.x test	MySQL 5.x		
<input type="checkbox"/>	<a href="#">dolphin.intranet.hyperic.net</a>	Linux	CentOS 4.2 (VM Guest of <a href="/Resource.do?eid=1:10510">esx2.intranet.hyperic.net</a>)	

[ADD TO LIST...](#) [REMOVE FROM LIST](#)

Total: 7 Items Per Page: 15

## Roles a Group is Assigned To

Available only in vFabric Hyperic

The "Roles Assigned To" section is present in vFabric Hyperic only ---- it lists the roles to which the group is assigned, which, along with the permission matrix for the role, governs the access that users with the role have to resources in the group.

For more information about roles, groups, and resource permissions, see [Permission Matrix: Grants Access to Types](#) and [Groups: Grant Access to Specific Resources](#) in *Manage Hyperic Users and Roles*.

Roles Assigned To		Description
<input type="checkbox"/>	Name	
<input type="checkbox"/>	Webmaster	
<input type="checkbox"/>	asmorrison1 Role	
<a href="#">ADD TO LIST...</a>	<a href="#">REMOVE FROM LIST</a>	Total: 2   Items Per Page: <input type="button" value="15"/>

## 5.1.5. View Inventory Properties for an Application

Topics marked with \* relate to features available only in vFabric Hyperic.

This page describes the contents of the **Inventory** page for an application

- [Inventory Page for an Application](#)
- [Inventory Page Header for an Application](#)
  - [Resource Properties](#)
  - [Tools Menu for an Application](#)
- [General Properties for an Application](#)
- [Application Properties](#)
- [Service Counts for an Application](#)
- [Services in an Application](#)
- [Groups Containing an Application](#)
- [Group Manager](#)

### Learn about Applications

See [Hyperic Inventory Model](#).

## Inventory Page for an Application

In Hyperic, an application is an inventory type, configured by an authorized user. An application is a set of selected services, usually running in different servers on multiple platforms, that together fulfill a single business purpose. Configuring applications enables you to manage your infrastructure from an application — as opposed to a hardware — perspective.

To display the **Inventory** page for an application, use **Resources > Browse > Applications** to navigate to the application, and click the **Inventory** tab.

In vFabric Hyperic, a user can view and modify resources only to the extent that the user's role(s) permit. For more information see [Understand Roles in vFabric Hyperic](#) in *Manage Hyperic Users and Roles*.

The screenshot below shows the **Inventory** tab for the application. Note:

- This is the tab you use to add services to an application.
- The "Service Counts" section shows the total number of services in the application, and the number of each type.
- The "Services" section lists key information for each service in the application.

General Properties						
Description:				Date Created:	11/06/2008 06:28 AM	
Location:				Date Modified:	11/13/2009 08:58 AM	
Resource Type:	Application			Modified By:	Don Baron (dbaron)	
<a href="#">EDIT...</a>						
Application Properties						
Application Type: Generic Application			Business Owner:			
Engineering Contact:			IT Operations Contact:			
<a href="#">EDIT...</a>						
Service Counts						
Total Services: 37						
Services By Type:		Apache 2.0 VHost (4)	NetworkServer Interface (3)	VMware VI3 VM NIC (6)		
		HTTP (8)	VMware VI3 VM CPU (5)	JBoss 4.0 JCA Connection Pool (1)		
		JBoss 4.0 JMS Destination (2)	JBoss 4.0 JCA Data Source (1)	Tomcat 5.5 Webapp (1)		
		MySQL 5.x Table (5)	JBoss 4.0 HQ Internals (1)			
Services						
Dependencies	Services	EntryPoint	Service Type	Res Type	Host Server	Availability
<a href="#">VIEW</a>	demo2.hyperic.net HQ Tomcat 5.5 /jboss-lather Tomcat 5.5 Webapp	No	Tomcat 5.5 Webapp	Service	demo2.hyperic.net HQ Tomcat 5.5	
<a href="#">VIEW</a>	demo2.hyperic.net JBoss 4.0 default DefaultDS JCA Connection Pool	No	JBoss 4.0 JCA Connection Pool	Service	demo2.hyperic.net HQ JBoss 4.x	
<a href="#">VIEW</a>	demo2.hyperic.net JBoss 4.0 default HQ Internals	No	JBoss 4.0 HQ Internals	Service	demo2.hyperic.net HQ JBoss 4.x	
<a href="#">VIEW</a>	demo2.hyperic.net JBoss 4.0 default agentScheduleQueue JMS Destination	No	JBoss 4.0 JMS Destination	Service	demo2.hyperic.net HQ JBoss 4.x	
<a href="#">VIEW</a>	demo2.hyperic.net JBoss 4.0 default DLQ JMS Destination	No	JBoss 4.0 JMS Destination	Service	demo2.hyperic.net HQ JBoss 4.x	
<a href="#">VIEW</a>	demo2.hyperic.net JBoss 4.0 default DefaultDS JCA Data Source	No	JBoss 4.0 JCA Data Source	Service	demo2.hyperic.net HQ JBoss 4.x	
<a href="#">VIEW</a>	demo2.hyperic.net Linux Network Interface lo (loopback)	No	NetworkServer Interface	Service	demo2.hyperic.net Linux NetworkServer	
<a href="#">VIEW</a>	demo2.hyperic.net Linux Network Interface eth1 (ethernet)	No	NetworkServer Interface	Service	demo2.hyperic.net Linux NetworkServer	
<a href="#">VIEW</a>	demo2.hyperic.net Linux Network Interface eth0 (ethernet)	No	NetworkServer Interface	Service	demo2.hyperic.net Linux NetworkServer	
<a href="#">VIEW</a>	falcon-win-2003 CPU 0	No	VMware VI3 VM CPU	Service	falcon-win-2003	
<a href="#">VIEW</a>	falcon-win-2003 Network Adapter 1	No	VMware VI3 VM NIC	Service	falcon-win-2003	
<a href="#">VIEW</a>	49er-ubuntu-6 CPU 0	No	VMware VI3 VM CPU	Service	49er-ubuntu-6	
<a href="#">VIEW</a>	49er-ubuntu-6 Network Adapter 1	No	VMware VI3 VM NIC	Service	49er-ubuntu-6	
<a href="#">VIEW</a>	bronco-centos-4.3 CPU 0	No	VMware VI3 VM CPU	Service	bronco-centos-4.3	
<a href="#">VIEW</a>	bronco-centos-4.3 Network Adapter 1	No	VMware VI3 VM NIC	Service	bronco-centos-4.3	
<a href="#">ADD TO LIST...</a> <a href="#">REMOVE FROM LIST</a>		Total: 37 Items Per Page: <a href="#">15</a> <a href="#">1</a> <a href="#">2</a> <a href="#">3</a> <a href="#">4</a>				
Groups containing this resource						
<a href="#">Group</a>	Description					
<a href="#">Group of Apps</a>						
<a href="#">ADD TO LIST...</a> <a href="#">REMOVE FROM LIST</a>		Total: 1 Items Per Page: <a href="#">15</a>				

## Inventory Page Header for an Application

The sections below describe the data and controls that appear at the top of the **Inventory** page for an application.

### Resource Properties

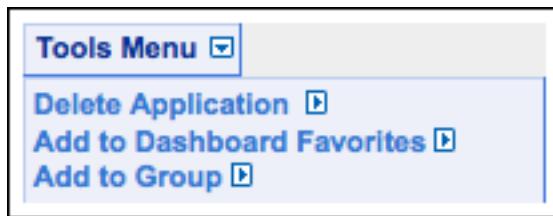
The properties at the top of the **Inventory** page for an applications are:

- Owner - By default, the Hyperic user under whose account the resource was added to inventory. Click [Change...](#) to assign a different resource owner.

<a href="#">Browse</a> > Hotel Booking on Voltron tcRuntime <a href="#">Return to Hotel Booking on Voltron tcRuntime</a>	
Description: Spring Framework instrumented ... <a href="#">Map</a> <a href="#">Tools Menu</a>	
Owner: SpringSource Demo ( <a href="#">springdemo</a> ) - <a href="#">Change...</a>	

## Tools Menu for an Application

The screenshot below is the **Tools** menu for an application.



When an application is selected, the **Tools** menu has the following commands:

- **Delete Application** — remove the application from inventory.
- **Add to Dashboard Favorites** — Adds the application to the **Favorite Resources** portlet on the the current Hyperic user's Dashboard.
- **Add to Group** — Opens the **Group Manager** page described below in [Group Manager](#).

In vFabric Hyperic, a user can view and modify resources only to the extent that the user's role(s) permit. For more information see [Understand Roles in vFabric Hyperic](#) in *Manage Hyperic Users and Roles*.

## General Properties for an Application

The **General Properties** section of the **Inventory** page for an application lists the following information about the application:

- Description — A description of the application. This is an optional, user-configured value.
- Location — An optional property.
- Date Created — The date the application was created.
- Date Modified, Modified By — The date the application was last modified and the user who modified it.

Click the **Edit** button to open a page where you can edit the applications's Name or Description.

General Properties		
Description:	Spring Framework instrumented application on tcRuntime	
Location:		
Resource Type:	Application	
<b>EDIT...</b>		
Application Properties		
Application Type:	Generic Application	Business Owner:
Engineering Contact:	IT Operations Contact:	
<b>EDIT...</b>		
Service Counts		
Total Services:	59	
Services By	SpringSource tc Runtime 6.0 Spring Component (1)	
Type:	SpringSource tc Runtime 6.0 Spring Bean Factory (2)	
	SpringSource tc Runtime 6.0 BookingService (1)	
	SpringSource tc Runtime 6.0 Spring Default Message Listener Container (1)	
	SpringSource tc Runtime 6.0 Spring Repository (1)	
	SpringSource tc Runtime 6.0 Global Request Processor (1)	
	SpringSource tc Runtime 6.0 Spring Multi Action Controller Method (4)	
	SpringSource tc Runtime 6.0 Spring User Details Service (1)	
	SpringSource tc Runtime 6.0 Spring Repository Method (10)	
	SpringSource tc Runtime 6.0 Spring Hibernate Session Factory (1)	
	SpringSource tc Runtime 6.0 Thread Pools (1)	
	SpringSource tc Runtime 6.0 Web Module Stats (2)	SpringSource tc Runtime 6.0 Spring Platform Transaction Manager (1)
	SpringSource tc Runtime 6.0 Spring View Resolver (1)	SpringSource tc Runtime 6.0 Spring Multi Action Controller (1)
	SpringSource tc Runtime 6.0 Spring Application (1)	SpringSource tc Runtime 6.0 Servlet Monitor (7)
	SpringSource tc Runtime 6.0 Spring Jms Template (1)	SpringSource tc Runtime 6.0 Executor (1)
	SpringSource tc Runtime 6.0 Garbage Collector (2)	SpringSource tc Runtime 6.0 Spring Application Context (2)
	SpringSource tc Runtime 6.0 Spring Controller (1)	SpringSource tc Runtime 6.0 Spring Security Interceptor (1)
	SpringSource tc Runtime 6.0 Spring Authentication Provider Manager (1)	SpringSource tc Runtime 6.0 Spring Dispatcher Servlet (1)
	SpringSource tc Runtime 6.0 Spring Java Mail Sender (1)	SpringSource tc Runtime 6.0 MessageListener (1)
	SpringSource tc Runtime 6.0 Spring Flow Definition Registry (1)	SpringSource tc Runtime 6.0 Cache (2)
	SpringSource tc Runtime 6.0 Spring Exception Translation Filter (1)	SpringSource tc Runtime 6.0 JSP Monitor (2)
	SpringSource tc Runtime 6.0 Spring Flow Execution Repository (1)	SpringSource tc Runtime 6.0 Spring Component Method (3)

## Application Properties

The **General Application** section of the **Inventory** page for an application lists the following information about the application:

- Application Type — This property, supported in previous versions of Hyperic, is no longer used.
- Engineering Contact — An optional property.
- Business Owner — The date the application was created.
- IT Operations Contact — The date the application was last modified and the user who modified it.

Click the **Edit** button to open a page where you can edit the contact-related properties for the application.

## Service Counts for an Application

The **Service Counts** section of the **Inventory** page for an application lists the total number of services in the application and the number of services of each service type.

Service Counts		
Total Services:	59 <th></th>	
Services By Type:		
SpringSource to Runtime 6.0 Spring Component (1)	SpringSource to Runtime 6.0 Web Module Stats (2)	SpringSource to Runtime 6.0 Spring Platform Transaction Manager (1)
SpringSource to Runtime 6.0 Spring Bean Factory (2)	SpringSource to Runtime 6.0 Spring View Resolver (1)	SpringSource to Runtime 6.0 Spring Multi Action Controller (1)
SpringSource to Runtime 6.0 BookingService (1)	SpringSource to Runtime 6.0 Spring Application (1)	SpringSource to Runtime 6.0 Servlet Monitor (7)
SpringSource to Runtime 6.0 Spring Default Message Listener Container (1)	SpringSource to Runtime 6.0 Spring Jms Template (1)	SpringSource to Runtime 6.0 Executor (1)
SpringSource to Runtime 6.0 Spring Repository (1)	SpringSource to Runtime 6.0 Garbage Collector (2)	SpringSource to Runtime 6.0 Spring Application Context (2)
SpringSource to Runtime 6.0 Global Request Processor (1)	SpringSource to Runtime 6.0 Spring Controller (1)	SpringSource to Runtime 6.0 Spring Security Interceptor (1)
SpringSource to Runtime 6.0 Spring Multi Action Controller Method (4)	SpringSource to Runtime 6.0 Spring Authentication Provider Manager (1)	SpringSource to Runtime 6.0 Spring Dispatcher Servlet (1)
SpringSource to Runtime 6.0 Spring User Details Service (1)	SpringSource to Runtime 6.0 Spring Java Mail Sender (1)	SpringSource to Runtime 6.0 MessageListener (1)
SpringSource to Runtime 6.0 Spring Repository Method (10)	SpringSource to Runtime 6.0 Spring Flow Definition Registry (1)	SpringSource to Runtime 6.0 Cache (2)
SpringSource to Runtime 6.0 Spring Hibernate Session Factory (1)	SpringSource to Runtime 6.0 Spring Exception Translation Filter (1)	SpringSource to Runtime 6.0 JSP Monitor (2)
SpringSource to Runtime 6.0 Thread Pools (1)	SpringSource to Runtime 6.0 Spring Flow Execution Repository (1)	SpringSource to Runtime 6.0 Spring Component Method (3)

## Services in an Application

The **Services** section of the **Inventory** page for an application lists the following information for each of the services in the application:

- name — Name of the service
- Entry Point — Whether the service is the entry point for the application.
- Service Type — Resource type of the service.
- Res Type —
- Host Server — Name of the server where the service runs.
- Availability — Current availability of the service.

You update the application in these ways:

- To add services to the application, click **Add to List**--the **EditApplicationName** appears.
- To remove one or more services from the application, click the box to the left of each service you wish to delete, and click **Delete**.

**Note:** The **Dependencies** control relates to functionality not implemented in this version of Hyperic.

## View Inventory Properties for a Resource

Services		Services ▾	EntryPoint	Service Type	Res Type	Host Server	Availability
Dependencies	VIEW	voltron.intranet.hyperic.net tc Runtime voltron-springapp bookingEndpoint.swf-booking-mvc bookingEndpoint.CreateHotel(Hotel) Spring Component Method	No	SpringSource tc Runtime 6.0 Spring Component Method	Service	voltron.intranet.hyperic.net tc Runtime voltron-springapp	
	VIEW	voltron.intranet.hyperic.net tc Runtime voltron-springapp bookingEndpoint.swf-booking-mvc bookingEndpoint.GetHotels(HotelRequest) Spring Component Method	No	SpringSource tc Runtime 6.0 Spring Component Method	Service	voltron.intranet.hyperic.net tc Runtime voltron-springapp	
	VIEW	voltron.intranet.hyperic.net tc Runtime voltron-springapp bookingEndpoint.swf-booking-mvc bookingEndpoint.GetHotelsGeneratingSoapFault(BadHotelRequest) Spring Component Method	No	SpringSource tc Runtime 6.0 Spring Component Method	Service	voltron.intranet.hyperic.net tc Runtime voltron-springapp	
	VIEW	voltron.intranet.hyperic.net tc Runtime voltron-springapp bookingService.swf-booking-mvc bookingService.CancelBooking(Long) Spring Repository Method	No	SpringSource tc Runtime 6.0 Spring Repository Method	Service	voltron.intranet.hyperic.net tc Runtime voltron-springapp	
	VIEW	voltron.intranet.hyperic.net tc Runtime voltron-springapp bookingService.swf-booking-mvc bookingService.CreateBooking(Long String) Spring Repository Method	No	SpringSource tc Runtime 6.0 Spring Repository Method	Service	voltron.intranet.hyperic.net tc Runtime voltron-springapp	
	VIEW	voltron.intranet.hyperic.net tc Runtime voltron-springapp bookingService.swf-booking-mvc bookingService.FindBookings(String) Spring Repository Method	No	SpringSource tc Runtime 6.0 Spring Repository Method	Service	voltron.intranet.hyperic.net tc Runtime voltron-springapp	
	VIEW	voltron.intranet.hyperic.net tc Runtime voltron-springapp bookingService.swf-booking-mvc bookingService.FindHotelById(Long) Spring Repository Method	No	SpringSource tc Runtime 6.0 Spring Repository Method	Service	voltron.intranet.hyperic.net tc Runtime voltron-springapp	
	VIEW	voltron.intranet.hyperic.net tc Runtime voltron-springapp bookingService.swf-booking-mvc bookingService.FindHotels(SearchCriteria) Spring Repository Method	No	SpringSource tc Runtime 6.0 Spring Repository Method	Service	voltron.intranet.hyperic.net tc Runtime voltron-springapp	
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	VIEW	voltron.intranet.hyperic.net tc Runtime voltron-springapp hotelsController.swf-booking-mvc hotelsController.DeleteBooking(Long) Spring Multi Action Controller Method	No	SpringSource tc Runtime 6.0 Spring Multi Action Controller Method	Service	voltron.intranet.hyperic.net tc Runtime voltron-springapp	
<a href="#">ADD TO LIST...</a> <a href="#">REMOVE FROM LIST</a>		Total: 59	Items Per Page:	15			

## Groups Containing an Application

The **Groups Containing This Resource** section of the **Inventory** page for an application lists the groups to which it belongs.

- To view the inventory page for a group to which the application belongs, click the group's name.
- Click **Add To List** to select the groups to which you wish to add the application.
- To remove the application from a group, checkmark the group, and click **Remove From List**.

Groups containing this resource		Description
<input type="checkbox"/> Group A		
<input type="checkbox"/> App Group		
<a href="#">ADD TO LIST...</a> <a href="#">REMOVE FROM LIST</a>		Total: 1 Items Per Page: 15

## Group Manager

The **Group Manager**, which appears when you click **Add to List** on the **Groups Containing This Resource** section of a resource's **Inventory** page, lists the groups to which you can add the application. Only groups that contain applications appear on the list, and only those that do not already contain the current application.

**Group Manager** (X)

**Add to Group**

<input type="checkbox"/> Group	Description
<input type="checkbox"/> All Applications	
<input type="checkbox"/> App Group	
<input type="checkbox"/> Applications Group Test	Trying to see how application groups work
<input type="checkbox"/> Group of Apps	
<input type="checkbox"/> TestUser1QReportGroup	

[ADD TO EXISTING GROUP](#) [ADD TO NEW GROUP](#)

## 5.2. Create a Platform, Server, or Service Manually

Most resource types are automatically discovered, and auto-discovery is the *only* way an operating system platform can be added to inventory. Conversely, auto-discovery of network or virtual platform types is not possible — you must add such platforms to inventory manually.

Most server types are auto-discovered. You create a server manually only if the managing plugin does not support server discovery, or if the plugin fails to discover a server, for instance, because it has an other-than-expected name in the process list or Windows registry.

Network services that are monitored remotely cannot be auto-discovered---you must manually create a platform service to represent a network service.

- [Section 5.2.1, “Create a Platform”](#)
- [Section 5.2.2, “Clone a Platform”](#)
- [Section 5.2.3, “Create a Platform Service”](#)
- [Section 5.2.4, “Create a Server”](#)
- [Section 5.2.5, “Create a Service”](#)

**Note:** For information about auto-discovery, see [Understanding Resource Auto-Discovery](#).

## 5.2.1. Create a Platform

This page has general instructions for creating a platform in Hyperic.

- [When to Create a Platform Manually](#)
- [Add a Platform to Inventory from the Hyperic User Interface](#)
- [Configure Platform for Monitoring](#)

For information about creating a platform using the HQApi see [HQApi resource command](#) in *Web Services API*.

### When to Create a Platform Manually

Operating system platform types are auto-discovered and cannot be manually added to inventory. The only platform types you can manually add to inventory are:

- Cisco IOS
- Cisco PIXOS
- GemFire Distributed System
- NetApp Filer
- Network Device
- VMWare VI3 Host
- Network Host
- VMWare vSphere Host
- VMWare vSphere VM
- Xen Host

#### Need to Know What a "Platform" Is?

See [Hyperic Inventory Model](#) for a more information.

### Add a Platform to Inventory from the Hyperic User Interface

1. Click **New Platform** on either:
  - The Dashboard's **Summary Counts** portlet
  - The **Tools** menu on the **Browse > Resources**.

2. On the **New Platform** page, enter:

- **Name** — The name of the platform
- **Description** — (optional) A description of the platform
- **Location** — (optional) The physical location of the platform hardware
- **Platform Type** — Select the platform type from the list. Once you create the platform, you cannot change its type.
- **Fully Qualified Domain Name** — The platform's FQDN
- **Agent Connection** — The IP address:port pair of the Agent the proxied connection to this platform should go through. When a platform is created manually (on this screen), the platform cannot or does not run an Agent itself, and therefore the Agent must connect to the platform via proxy. The list contains the IP address:port pairs from all the currently deployed Agents.
- **IP Address** — (optional)
- **MAC Address** — (optional)
- **Netmask** — At a minimum specify values for the loopback (local) IP address, and then additional sets of values for each network interface on the device.

3. Click **OK**.

- The **Inventory** page for the new platform is displayed.

The platform's **Owner** defaults to the account that created the platform.

## Configure Platform for Monitoring

After creating the new platform, you may need supply values for one or more configuration properties. See the resource's **Inventory** page for configuration options and requirements.

### 5.2.2. Clone a Platform

Available only in **vFabric Hyperic**

- [Cloning a Platform](#)
- [How to Clone a Platform](#)
- [What Cloning is Good For](#)
- [What Cloning Does](#)
- [What Cloning Doesn't Do](#)

#### Cloning a Platform

HQ Enterprise's **Clone Platform** feature allows you to copy configuration properties for servers and manually created platform services from one platform to one or more other platforms.

\*Note: \* Manually created platform services are the types of platform services that cannot be auto-discovered - typically the types you configure to proxy metrics for network services and devices, such as "HTTP", "POP3", or "DNS" services.

Platform cloning is supported between platforms of the same type (for example, "Linux") that run the same version of the HQ Agent.

#### How to Clone a Platform

The **Clone Platform** page is available on the **Tools** menu when a platform is selected.

1. Navigate to the platform whose inventory resources you wish to clone.
2. Choose **Clone Platform** from the **Tools** menu.
3. On the **Clone Platform** page, the "Available clone targets" list shows platforms of the same type as the source platform. You can narrow the list by entering a string in the "Search resources" box.
4. Move desired target platforms from the "Available clone targets" list to the "Selected clone targets" list.
5. Click **Queue for Cloning**. Cloning occurs asynchronously. You can perform other functions in the user interface without waiting for the cloning process to complete.

#### What Cloning is Good For

Platform cloning makes it easy to replicate configuration properties for resources of the same type. For instance,

- You have a dozen Linux platforms, each running Tomcat 6.0, JBoss 4.2, and MySQL 5.0. The HQ Agent is installed on each platform, and has auto-discovered the Tomcat, JBoss, and MySQL instances on each platform. You want to implement an identical log tracking configuration for servers of the same type on each of platforms. You edit the "Configuration Properties" on the Inventory page for the Tomcat, JBoss, and

MySQL instances on one of the platforms. You can use **Clone Platform** to copy the configuration settings to the Tomcat, JBoss, and MySQL instances on the other 11 platforms.

- You are setting up multiple platforms to monitor network services or devices. To enable network monitoring, on each platform you need a properly configured platform service to serve as a proxy for each remote service or device. You can configure the platform services on one platform, and use **Clone Platform** to create platform services with the same configuration properties on each of the other platforms.

## What Cloning Does

The cloning process can create new resources on the target platform or update an existing resource's configuration properties. The cloning process:

- Copies the configuration properties for each server on the source platform to corresponding servers of the same type on the target platforms. If there is not a corresponding server of the same type on a target platform, it is created, with the same configuration properties as the source server.
- Copies the configuration properties for each manually created platform service on the source platform to the target platforms - adding a new platform service to the target platform's inventory, or updating configuration properties of corresponding instances in the target platform inventory.
- Cloning occurs asynchronously, so you can perform other functions in the HQ user interface after initiating the process. The **Event Center** indicates the start and stop of the cloning process for the source platform.

## What Cloning Doesn't Do

The cloning process:

- Does not update auto-discovered properties
- Does not create or update auto-discovered platform services, such as CPUs or File Server Mounts
- Does not create or update services that comprise the cloned servers; the child services will be added to inventory on the target platform via auto-discovery.

## 5.2.3. Create a Platform Service

This page has general instructions for creating a service in Hyperic.

- [When to Manually Create a Platform Service](#)
- [Create a Platform Service](#)
- [Configuration Instructions for Platform Services](#)

For information about creating a service using the HQApi see [HQApi resource command](#) in *Web Services API*.

### When to Manually Create a Platform Service

There are two types of platform services in Hyperic:

- System services local to an operating system platform, such as CPUs, network interfaces, filesystems, and so on. Most local service are auto-discovered by the `system` plugin.
- Remote services that the Hyperic Agent monitors over the network, such as HTTP, FTP, DNS, and other services using a supported protocol. Because such services are monitored by a remote agent, they cannot be auto-discovered. For network services, you manually configure platform service on the platform running the Hyperic Agent that will monitor the service.

#### Need to Know What a "Platform Service" Is?

See [Hyperic Inventory Model](#) for a more information.

### Create a Platform Service

1. Use **Browse > Resources > Platforms** to navigate to the platform to which you wish to add a service.
2. Select **New Platform Service** from the **Tools** menu.
3. On the **New Platform Service** page enter:
  - Name - A meaningful name for the service.
  - Description - (optional) A description of the service
  - Service Type - Select the desired service type from the pull-down list.
4. Click **OK** to create the new service.
  - The **Inventory** tab for the new service appears and prompts: "This resource has not been configured". Please set its Configuration Properties.
5. Click **Configuration Properties** in the prompt.
6. On the **Configuration Properties** page, enter values for the required configuration properties, which are prefixed with a red asterisk, and optional properties as appropriate. For information about the configuration properties for a service type, click the link in the **Configuration Notes** column for it in [Configuration Instructions for Network Services](#) table below.

## Configuration Instructions for Platform Services

The table below lists all supported platform service types in Hyperic. The **Configuration Notes** column for a network service or an other platform service type that require configuration has a link to a configuration properties reference for the service type. No configuration instructions are provided for auto-discovered platform services.

Service	Description	Configuration Notes
CPU		
DHCP	Use to monitor a remote Dynamic Host Configuration Protocol server.	See <a href="#">DHCP Platform Service</a> in <i>Configure Resources for Monitoring</i> .
DNS	Use to monitor a remote Domain Name System server.	See <a href="#">DNS Platform Service</a> in <i>Configure Resources for Monitoring</i> .
FileServer Directory		
FileServer File		
FileServer Mount	Use to monitor a remote filesystem mount point and associated disks and raid arrays. <b>Note:</b> The HQ Agent auto-discovers local mount points. You only need to explicitly configure a FileServer Mount service to monitor a remote network file system (NFS). Alternatively, you can install an HQ Agent on the system that hosts the NFS, in which case the NFS will be auto-discovered.	
FileServer DirectoryTree	Use to monitor a directory and the entire tree under that directory.	
HTTP	Use to monitor a particular URL.	See <a href="#">HTTP Platform Service</a> in <i>Configure Resources for Monitoring</i> .
FTP	Use to monitor a remote File Transfer Protocol server.	See <a href="#">FTP Platform Service</a> in <i>Configure Resources for Monitoring</i> .
IMAP	Use to monitor a remote Internet Message Access Protocol server.	See <a href="#">IMAP Platform Service</a> in <i>Configure Resources for Monitoring</i> .
InetAddress Ping	Use to ping a remote host for availability.	See <a href="#">InetAddress Ping Platform Service</a> in <i>Configure Resources for Monitoring</i> .
LDAP	Use to monitor a remote Lightweight Directory Access Server.	See <a href="#">LDAP Platform Service</a> in <i>Configure Resources for Monitoring</i> .
Multiprocess	Use to monitor multiple related processes. For example, to monitor the number of httpd processes running on Apache and the system resource they consume in aggregate.	

Service	Description	Configuration Notes
NetworkServer Interface	Use to monitor a network interface. <b>Note:</b> Because the HQ Agent auto-discovers network interfaces, manual configuration of a NetworkServer Interface is rare.	
NTP	Use to monitor a remote Network Time Protocol server.	See <a href="#">NTP Platform Service</a> in <i>Configure Resources for Monitoring</i> .
POP3	Use to monitor a remote Post Office Protocol 3 server. Configure along with an SMTP service to monitor incoming and outgoing email services.	See <a href="#">POP3 Platform Service</a> in <i>Configure Resources for Monitoring</i> .
Process	Use to monitor a process using a Hyperic SIGAR Process Table Query Language (PTQL) query. To configure, you supply the PTQL query in the form: <code>Class.Attribute.operator=value</code> For example, <code>Pid.PidFile.eq=/var/run/sshd.pid</code>	<a href="#">SIGAR Process Table Query Language documentation</a>
RPC	Use to monitor a Remote Procedure Call service. <b>Note:</b> Not available on Windows platforms.	See <a href="#">RPC Platform Service</a> in <i>Configure Resources for Monitoring</i> .
Script	Used to configure HQ to periodically run a script that collects a system or application metric.	<a href="#">Configure a Script Service</a>
SMTP	Use to monitor a remote Simple Mail Transfer Protocol server. Configure along with a POP3 service to monitor incoming and outgoing email services.	See <a href="#">SMTP Platform Service</a> in <i>Configure Resources for Monitoring</i> .
SNMP	Use to monitor a remote Simple Network Management Protocol agent.	See <a href="#">SNMP Platform Service</a> in <i>Configure Resources for Monitoring</i> .
SSH	Use to monitor a remote SSH service.	See <a href="#">SSH Platform Service</a> in <i>Configure Resources for Monitoring</i> .
TCP Socket	Use to monitor the availability of a remote TCP socket	See <a href="#">TCP Socket Platform Service</a> in <i>Configure Resources for Monitoring</i> .
Windows Service	Use to monitor an application that runs as a service under Windows. To configure it, you supply its Service Name in Windows. To determine the Service Name:	

Service	Description	Configuration Notes
	<ol style="list-style-type: none"><li>1. Select <b>Run</b> from the Windows <b>Start</b> menu.</li><li>2. Type services.msc in the run dialog and click <b>OK</b>.</li><li>3. In the list of services displayed, right-click the service you wish to monitor and choose <b>Properties</b>.</li><li>4. Locate the Service Name on the <b>General</b> tab.</li></ol>	

## 5.2.4. Create a Server

Topics marked with \* relate to features available only in vFabric Hyperic.

This page has general instructions for creating a platform in Hyperic.

- [When to Create a Server Manually](#)
- [Create a Server](#)
- [Inventory Page for a New Server](#)
- [Configure Server for Monitoring](#)

**Note:** For information about creating a server using the HQApi see [HQApi resource command](#) in *Web Services API*.

### When to Create a Server Manually

Most server types that Hyperic manages are auto-discovered, rather than manually added to inventory on the [New Server](#) page.

You may need to create a server manually under some circumstances, for instance, if:

- The plugin that manages the server does not support auto-discovery of server instances.
- The auto-discovery method used by the plugin failed, because the entry it looked for in the process table or Windows registry was not found. For example, the server's name in the process list is different than the plugin uses to detect server instances.

#### Need to Know What a "Server" Is?

See [Hyperic Inventory Model](#) for a more information.

### Create a Server

1. Use **Browse > Resources > Platforms** to navigate to the platform to which you wish to add a server.
2. Select **New Server** from the **Tools** menu.
  - The **New Server** page appears.

3. On the **New Server** page enter:

- **Name**--The name of the server
- **Description**--(optional) A description of the server
- **Server Type**--Select the server type for the new resource.
- **Install Path**--If there are other servers of the type you are creating on the current platform, make sure that the installation path you define for the new server instance is unique, and not the same as any of the other servers of the same type. For autodiscovered servers, the plugin sets the value of the **Install Path** property, and uses it as the basis for the resource's *autoinventory identifier*. Note that if you create a server manually, you must specify the **Install Path** property, but it need not be the actual installation path for the server. The only requirement is that all servers of the same resource type on the same platform have unique **Install Path** property values.

4. Click **OK**.

- The **Inventory** tab for the resource appears. See [Inventory Page for a New Server](#) for more information.

## Inventory Page for a New Server

The screenshot below is the **Inventory** page for a server that is newly added to inventory. It contains these sections:

- **General Properties**--The server's **Owner** is the username for the Hyperic account that created the server.
- **Type and Host Properties**--The **Host Platform** is the name of the platform to which you added the server.
- **Services**--This section of the page lists services discovered in the server instance. For an new server instance, no services appear until any required configuration properties are defined. You can manually add services to a server, but it is uncommon.
- **Groups Containing this Resource**--Click **Add to List** in this section if you wish to assign the server to one or more resource groups.
- **Configuration Properties**--The properties in the section vary, depending on the resource type of the server you are created.
  - **Shared** For some server types, you need to supply resource connection or authorization credential data in this section in order to monitor and manage the resource.
  - **Monitoring**--If the server type supports log or configuration tracking, you can configure tracking options in this section.
  - **Control**--If the server type supports control actions, you configure associated options in this section.

Server WLS NM2 has been created.

This resource has not been configured. Please set its [Configuration Properties](#).

General Properties		Date Created: 01/05/2011 02:07 PM																																				
Description:	Resource Type: Weblogic NodeManager 10.3	Date Modified: 01/05/2011 02:07 PM																																				
		Modified By: HQ Administrator (hqadmin)																																				
<a href="#">EDIT...</a>																																						
Type & Host Properties																																						
Install Path: /findx/repr		Host Platform: Marie-McGarrys-MacBook-Pro-46.local																																				
<a href="#">EDIT...</a>																																						
Services																																						
Total Services: 0 Services By Type: <table border="1"> <thead> <tr> <th>Service A</th> <th>Service Type</th> <th>Description</th> <th>Availability</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td></td> <td></td> <td>Total: 0 Items Per Page: 15</td> </tr> <tr> <td><a href="#">NEW...</a></td> <td><a href="#">DELETE</a></td> <td></td> <td></td> </tr> </tbody> </table>			Service A	Service Type	Description	Availability	<input type="checkbox"/>			Total: 0 Items Per Page: 15	<a href="#">NEW...</a>	<a href="#">DELETE</a>																										
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<table border="1"> <thead> <tr> <th>Shared</th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>admin.url</td> <td></td> <td>admin.username</td> <td></td> </tr> <tr> <td>admin.password *****</td> <td></td> <td>server</td> <td></td> </tr> <tr> <td>nodemgr.address</td> <td></td> <td>nodemgr.port</td> <td></td> </tr> <tr> <th>Monitoring</th> <th></th> <th></th> <th></th> </tr> <tr> <td colspan="4">Auto-Discovery for services is OFF</td> </tr> <tr> <th>Control</th> <th></th> <th></th> <th></th> </tr> <tr> <td colspan="4">This resource does not have any control Configuration Properties.</td> </tr> <tr> <td colspan="4"><a href="#">EDIT...</a></td> </tr> </tbody></table>			Shared				admin.url		admin.username		admin.password *****		server		nodemgr.address		nodemgr.port		Monitoring				Auto-Discovery for services is OFF				Control				This resource does not have any control Configuration Properties.				<a href="#">EDIT...</a>			
Shared																																						
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nodemgr.address		nodemgr.port																																				
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Auto-Discovery for services is OFF																																						
Control																																						
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<a href="#">EDIT...</a>																																						

## Configure Server for Monitoring

After creating the new server, you may need supply values for one or more configuration properties. See the resource's **Inventory** page for configuration options and requirements.

### 5.2.5. Create a Service

This page has general instructions for creating a service in Hyperic.

- [When to Create a Service Manually](#)
- [Add a Service to Inventory from the Hyperic User Interface](#)

For information about creating a service using the HQApi see [HQApi resource command](#) in *Web Services API*.

#### When to Create a Service Manually

In Hyperic, a *service* is a component that runs in a server (for example, an EJB), or is associated with an operating system (for example, a CPU). System-level service, and services that an agent will manage remotely are referred to as *platform services*.

Most service types are auto-discovered by the plugin that manages that service type. Services that run on a platform are discovered along with the platform itself by the Hyperic's **system** plugin. Services that run in a local server are auto-discovered by the plugin that manages the host server — for example, the plugin that manages Tomcat discovers the services running in Tomcat.

The only service types in Hyperic that are routinely created explicitly are remote platform services. For information about creating and configuring remote services, see [Section 5.2.3, “Create a Platform Service”](#).

## Add a Service to Inventory from the Hyperic User Interface

1. Use **Browse > Resources > Server** to navigate to the server to which you wish to add a service.
2. Select **New Service** from the **Tools** menu.
3. On the **New Service** page enter:
  - **Name** — The name of the service.
  - **Description** — (optional) A description of the service
  - **Server Type** — The service type.
  - **Host Server** — Contains the name of the server upon which you are creating the service.
4. Click **OK**.

The server's **Owner** defaults to the account that created the service.

## 5.3. Remove Resources from Hyperic Inventory

Topics marked with \* relate to features available only in vFabric Hyperic.

- [Section 5.3.1, “Delete a Resource Manually”](#)
- [Section 5.3.2, “Delete Resources with HQApi”](#)

### 5.3.1. Delete a Resource Manually

To delete a resource from the Hyperic inventory:

1. Use **Browse > Resources** to navigate to the resource you wish to delete.
2. Select the **Delete ResourceType** option from the **Tools** menu.

Monitoring ceases and the resource is removed from Hyperic inventory. Note that if the resource has child resources, those children (and their children, as applicable) will be removed as well.

Resources you delete will disappear from the resource list immediately. Removal of the resources from the Hyperic database occurs asynchronously; there may be a slight delay before resources are removed from the database. If you restart agent prior to the resource is removed from the database, errors might occur if you re-add the resource to memory after the agent redisCOVERS it.

Do not try to re-import a platform immediately after deleting it — this may fail. Note also that until the delete process running in background completes, a deleted platform will still appear in the Hyperic Health's **Agent** tab. Similarly, the Hyperic license count displayed in the web user interface will not be decremented until the delete process is completed.

### 5.3.2. Delete Resources with HQApi

You can delete resources with the [HQApi resource command](#), using the `delete` command option.

## 6. Manage Hyperic Users and Roles

- [Section 6.1, “Create and Manage User Accounts”](#)
- [Section 6.2, “Create and Manage Roles in vFabric Hyperic”](#)
- [Section 6.3, “Role-Based Dashboards in vFabric Hyperic”](#)

## 6.1. Create and Manage User Accounts

Topics marked with \* relate to features available only in vFabric Hyperic.

- [Section 6.1.1, “Create a New User Account”](#)
  - [Define User Account Attributes](#)
  - [Assign Roles to a New User Account](#)
- [Section 6.1.2, “List User Accounts”](#)
- [Section 6.1.3, “View a User Account”](#)
- [Section 6.1.4, “Modify User Account Settings”](#)
  - [Change Password](#)
  - [Edit Account Settings](#)
  - [Update Roles Assigned to a User](#)

## 6.1.1. Create a New User Account

The sections below have instructions for creating a user, and in vFabric Hyperic, assigning roles to the user.

### Define User Account Attributes

To create a new Hyperic user:

1. Click **New User** on the **Administration** page.
2. The **New User** page appears.

The screenshot shows the 'New User' dialog box with the 'General Properties' tab selected. The form contains the following fields:

- Name:** First and Last input fields.
- Password:** Enter New Password and Confirm New Password fields. A note states: "At least 6 case-sensitive characters and numbers, no spaces, or quotation marks."
- Email:** Input field.
- Format:** Radio buttons for HTML (selected) and TEXT.
- Username:** Input field.
- Phone:** Input field.
- Department:** Input field.
- SMS Address:** Input field.
- Enable Login:** Radio buttons for YES (selected) and NO.

Buttons at the bottom include **OK & ASSIGN USER TO ROLES**, **RESET**, and **CANCEL**.

3. Enter values for:
  - **Name**
  - **Username** — The username the user logs in with.
  - **Phone**
  - **Department**
  - **Password** — Passwords must contain at least 6 case-sensitive characters and numbers, and no spaces or quotation marks.
  - **Email** — User's email address.
  - **Format** — Toggle the radio button to select HTML or plain text.
  - **SMS Address** — An email-to-SMS gateway email address for the user's SMS device.
    - For a cellular phone on the Cingular network, this might look like *415551212@mobile.mycingular.com*. Check with the service provider for details about an email-to-SMS configuration. Basic alert notification sent to this user's SSS address will be in long format, which can result in up to five separate messages on the SMS device each time notification is sent by HQ. Hyperic recommends that SMS alerting be used in conjunction with escalations, not basic alert notification, but short format is used there.
  - **Enable Login** — Toggle the radio button to disable or enable the account. The user cannot log in when the login is disabled.

4. Click:

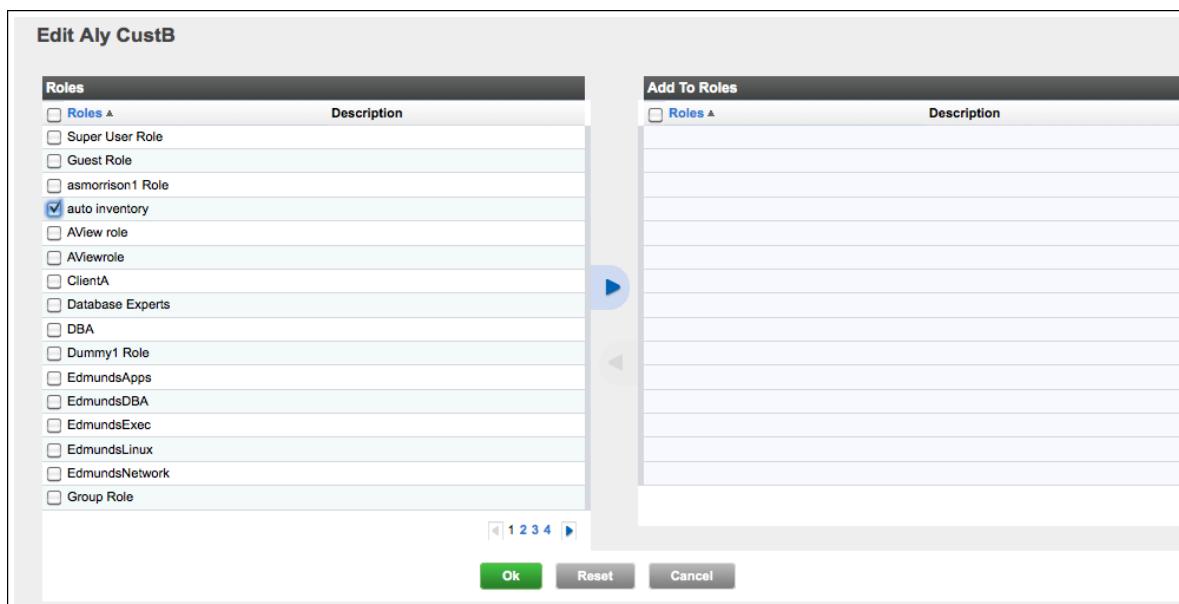
- **OK** in Hyperic HQ to save the new account.
- **OK and Assign to Roles** in vFabric Hyperic.

## Assign Roles to a New User Account

**Available only in vFabric Hyperic**

In vFabric Hyperic, the roles to which a user is assigned govern which resources the user may access, and the operations the user can perform on those resources. Each role in vFabric Hyperic defines a permission matrix; users with a role may exercise the permissions it grants, on the resources in groups assigned to the role.

To assign roles to a user:



1. In the "Roles" panel on the left side of the page, checkmark each role to which you want to assign the user, and click the blue arrow to move the roles to the "Add to Roles" panel.
2. Click **OK** when you are done adding users to the role.

### 6.1.2. List User Accounts

1. Click **List Users** on the **Administration** page.
  - The **List Users** page appears.  
A screenshot of the **List Users** page is shown below.

**List Users**

**Authentication/Authorization**

<input type="checkbox"/> First Name	Last Name	UserName	Email	Department
<input type="checkbox"/> Guest	User	guest	he@demo2.hyperic.net	
<input type="checkbox"/> Arie	Chapman	achapman	achapman@vmware.com	
<input type="checkbox"/> agim	agim	agim	agim@springsource.com	
<input type="checkbox"/> Alex	Ma	ama	ama@vmware.com	
<input type="checkbox"/> Al	Sargent	asargent	asargent@vmware.com	
<input type="checkbox"/> Velv	User	AViewUser	scott.morrison@hyperic.com	
<input type="checkbox"/> Blair	Hester	bhester	bhester@hyperic.com	
<input type="checkbox"/> bruce	snyder	bsnyder	bob@bob.com	
<input type="checkbox"/> Chip	Disabled	cdisabled	chip.witt@springsource.com	
<input type="checkbox"/> chris	harris	charris	chris.harris@springsource.com	
<input type="checkbox"/> chris	prendergast	chriss	chris.prendergast@hyperic.com	
<input type="checkbox"/> Charles	Lee	cle	charles.lee@hyperic.com	
<input type="checkbox"/> colin	Sampaleanu	colin	Colin.Sampaleanu@springsource.com	
<input type="checkbox"/> Contegix	Customer	contegix	greg.walters@contegix.com	
<input type="checkbox"/> chris	prendergast	cprendergast	Chris.Prendergast@hyperic.com	

**Actions:** [NEW...](#) [DELETE](#)

Total: 117 Items Per Page: [15](#) [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [▶](#)

The **List Users** page lists the following information for each user account.

- **First Name**
- **Last Name**
- **UserName** — Click a user name to view and edit the user account.
- **Email** — Click an email address to send mail to the user.
- **Department**

### 6.1.3. View a User Account

1. List user accounts, following the instructions in [List User Accounts](#).
2. Click the **UserName** for the user account you wish to view.
  - The *UserName* page appears.

A screenshot of the user account page is shown below.

The screenshot shows a user account page for 'Guest User'. The 'General Properties' section displays the following information:

Name: Guest User	Username: guest
Email: <a href="mailto:hq@demo2.hyperic.net">hq@demo2.hyperic.net</a> (TEXT)	Phone:
Enable Login: NO	Department:
SMS Address:	

Below this is an 'EDIT...' button. The 'Roles Assigned To' section lists one role:

Name	Members	Description
Guest Role	10	

Buttons for 'ADD TO LIST...', 'REMOVE FROM LIST', and pagination controls ('Total: 1 Items Per Page: 15') are also present. A link to 'Return to Users' is at the bottom.

- The **General Properties** section contains this information:
  - **Name**
  - **Username** — The username the user logs in with.
  - **Phone**
  - **Department**
  - **Password** — The user's password is not displayed. If you have the permission to modify the password, a **Change...** link is present.
  - **Email** — User's email address. Click to send an email to the user.
  - **Format** — Format for email notifications sent to the user — HTML or plain text.
  - **SMS Address** — An email-to-SMS gateway email address for the user's SMS device.
  - **Enable Login** — Indicates whether or not the account is enabled. The user cannot log in when the login is disabled.
- The **Roles Assigned To** section contains:
  - A list of the roles to which the user is assigned.
  - An **Add to List** button — click it to assign additional roles to the user.

## 6.1.4. Modify User Account Settings

1. Navigate to the user account, as described in [View a User Account](#).

**Guest User**

**General Properties**

Name: Guest User	Username: guest
Email: hq@demo2.hyperic.net (TEXT)	Phone:
Enable Login: NO	Department:
	SMS Address:

**Roles Assigned To**

Name	Members	Description
Guest Role	10	

**Buttons:** EDIT..., ADD TO LIST..., REMOVE FROM LIST, Total: 1, Items Per Page: 15

[<< Return to Users](#)

## Change Password

1. Click **Change** in the password field on the *UserName* page.

**Edit View User**

**Change Password**

\* Password:  Enter New Password:  
At least 6 case-sensitive characters and numbers, no spaces, or quotation marks.

Confirm New Password:

**Buttons:** Ok, Reset, Cancel

2. If you are do not have the **SuperUser** role, the page prompts you to supply the previous password.
3. Enter a password in the **Enter New Password** field.
4. Enter a password again in the **Confirm New Password** field.
5. Click **OK**.

## Edit Account Settings

1. Click **Edit** in the "General Properties\*" section of the *UserName* page.
- The \*Edit *UserName* page appears.  
A screenshot of the **Edit User** page is shown below.

The screenshot shows the 'Edit User' dialog box with the 'General Properties' tab selected. The 'Name' section has 'First' set to 'Guest' and 'Last' set to 'User'. The 'Username' field is 'guest'. The 'Email' field is 'hq@demo2.hyperic.net'. The 'Format' radio button is selected for 'TEXT'. The 'Department' and 'SMS Address' fields are empty. The 'Enable Login' radio button is selected for 'NO'. At the bottom are 'Ok', 'Reset', and 'Cancel' buttons.

2. Enter values for:

- **Name**
- **Username** — The username the user logs in with.
- **Phone**
- **Department**
- **Email** — User's email address.
- **Format** — Toggle the radio button to select HTML or plain text.
- **SMS Address** — An email-to-SMS gateway email address for the user's SMS device.
  - For a cellular phone on the Cingular network, this might look like *4155551212@mobile.mycingular.com*. Check with the service provider for details about an email-to-SMS configuration. Basic alert notification sent to this user's SSS address will be in long format, which can result in up to five separate messages on the SMS device each time notification is sent by HQ. Hyperic recommends that SMS alerting be used in conjunction with [escalation](#), not basic alert notification, but short format is used there.
- **Enable Login** — Toggle the radio button to disable or enable the account. The user cannot log in when the login is disabled.

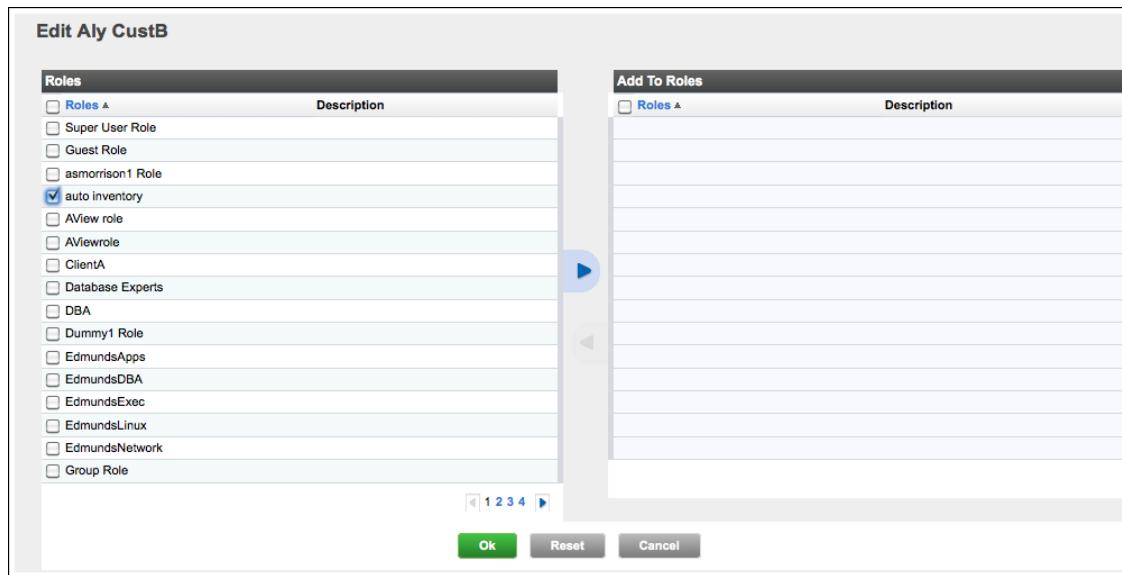
3. Click **OK**.

## Update Roles Assigned to a User

**Available only in vFabric Hyperic**

1. Click **Add to List** in the "Roles Assigned To\*" section of the *UserName* page.

- The \*Edit *UserName* page appears.



2. In the "Roles" panel on the left side of the page, checkmark each role to which you want to assign the user, and click the blue arrow to move the roles to the "Add to Roles" panel.
3. Click **OK** when you are done adding users to the role.

## 6.2. Create and Manage Roles in vFabric Hyperic

Available only in vFabric Hyperic

- [Section 6.2.1, “Assign Users to a Role”](#)
- [Section 6.2.2, “Assign Groups to a Role”](#)
- [Section 6.2.3, “Define Alert Calendar for Follow-the-Sun Role-Based Notifications”](#)
- [Section 6.2.4, “Customize Role-Specific Dashboard”](#)
- [Section 6.2.5, “Use Roles for “Follow the Sun” Alerting”](#)
- [Section 6.2.6, “List Roles”](#)
- [Section 6.2.7, “View a Role”](#)
- [Section 6.2.8, “Edit a Role”](#)

1. Click **New Role** on the **Administration** page.

Resource Type	Permissions	Capabilities
Users	Full	
Roles	Full	
Groups *	Full	Can Fix/Ack Alerts? <input checked="" type="checkbox"/>
Platforms	Full	Can Fix/Ack Alerts? <input checked="" type="checkbox"/> Can Control? <input checked="" type="checkbox"/>
Servers	Full	Can Fix/Ack Alerts? <input checked="" type="checkbox"/> Can Control? <input checked="" type="checkbox"/>
Services	Full	Can Fix/Ack Alerts? <input checked="" type="checkbox"/> Can Control? <input checked="" type="checkbox"/>
Applications	Full	
Escalations	Full	

\* Regardless of permissions selected, all users have the ability to create groups in the system.

Ok    Reset    Cancel

Assign Users & Groups to this Role after clicking "OK".

2. In the "Properties" section of the **New Role** page, enter:

- **Name**
- **Description**, if desired.

3. In the **Permissions** section, select select a permission level - **Full**, **Read-Write**, **Read-Only**, or **None** for each type:

a. **Users**

- Grant **Full** to enable role users to create and delete HQ user accounts.
- Grant **Read-Write** to enable role users to edit HQ users accounts.

b. **Roles**

- If you select **Full**, which enables role users to create roles, HQ will ensure that the role's permission level to Users and Groups is at least **Read-Only**, because to create a role, you need to view users and groups.

c. **Groups**

- Grant **Full** to enable role users to delete groups created by others.
- Grant **Read-Write** to enable role users to modify groups created by others.
- Note that regardless of the permission level you select, any user can create groups, and as the owner of such groups, delete them.

d. **Platforms**

- If you select **Full**, which enables role users to delete platforms and their child resources, HQ will require that the role's permission level to Servers and Services is also **Full**.
- If you select **Full** or **Read-Write**, HQ will automatically checkmark the **Can Fix/Ack Alerts?** and **Can Control?** capabilities.
- If you select **Read-Only**, you have the option to grant alert management or resource control capabilities by clicking **Can Fix/Ack Alerts?** or **Can Control?** respectively.
- If you select **None**, you cannot grant alert management or resource control permissions.

#### e. Servers

- If you select **Full**, which enables role users to delete servers and child services, HQ will require that the role's permission level to Platforms is at least **Read-Write**, and its permission level to Services is **Full**.
- If you select **Full** or **Read-Write**, HQ will automatically checkmark the **Can Fix/Ack Alerts?** and **Can Control?** capabilities.
- If you select **Read-Only**, you have the option to grant alert management or resource control capabilities by clicking **Can Fix/Ack Alerts?** or **Can Control?** respectively.
- If you select **None**, you cannot grant alert management or resource control permissions.

#### f. Services

- If you select **Full**, HQ will require that the role's permission level to Servers is at least **Read-Write**.
- Grant at least **Read-Only** if you are going to grant the role **Full** permission to **Applications**.
- If you select **Full** or **Read-Write**, HQ will automatically checkmark the **Can Fix/Ack Alerts?** and **Can Control?** capabilities.
- If you select **Read-Only**, you have the option to grant alert management or resource control capabilities by clicking **Can Fix/Ack Alerts?** or **Can Control?** respectively.
- If you select **None**, you cannot grant alert management or resource control permissions.

#### g. Applications

- Grant **Full** if you want role users to be able to create and delete applications.
- Grant **Read-Write** if you want role users to be able to modify change applications created by others.

#### h. Escalations

- Grant **Full** if you want role users to be able to create and delete escalations groups
  - Grant **Read-Write** if you want role users to be able to modify escalations.
- i. The role is saved, and the refreshed role page will have three new sections: "Assigned Users", "Assigned Groups", and "Alert Calendar".

Proceed to [Assign Users to a Role](#).

## 6.2.1. Assign Users to a Role

In vFabric Hyperic, each user you assign to a role can exercise the permissions defined for the role, on resources in the groups assigned to the role.

1. If you are not currently viewing the role to which you wish to assign users, navigate to the role.

[\*\*<< Return to Roles\*\*](#)

<b>Properties</b>		
<b>* Name:</b> Guest Role <b>Description:</b> <b>Dashboard Name:</b> Guest Role Role Dashboard		<b>Owner:</b> System User (admin) <b>Administrator HQ Server YES</b> <b>Configuration:</b>

<b>Permissions</b>		
<b>Resource Type</b>	<b>Permissions</b>	<b>Capabilities</b>
Users	Read Only	
Roles	Read Only	
Groups *	Read Only	Can Fix/Ack Alerts? <input type="checkbox"/>
Platforms	Read Only	Can Fix/Ack Alerts? <input type="checkbox"/> Can Control? <input type="checkbox"/>
Servers	Read Only	Can Fix/Ack Alerts? <input type="checkbox"/> Can Control? <input type="checkbox"/>
Services	Read Only	Can Fix/Ack Alerts? <input type="checkbox"/> Can Control? <input type="checkbox"/>
Applications	Read Only	
Escalations	Read Only	

*\* Regardless of permissions selected, all users have the ability to create groups in the system.*

[EDIT...](#)

<b>Assigned Users</b>		
<input type="checkbox"/> First Name	Last Name	Username ▲
<input type="checkbox"/> Guest	User	guest
<input type="checkbox"/> Don	Baron	donbaron
<input type="checkbox"/> Guest	guest	guest2
<input type="checkbox"/> Helena	Edelson	holly
<input type="checkbox"/> HQ	Demo	hqdemo
<input type="checkbox"/> Kenji	Igarashi	kigarash
<input type="checkbox"/> Robert	Ide	ride
<input type="checkbox"/> Sales	Group	sales
<input type="checkbox"/> Michael	Wood	woodm
<input type="checkbox"/> Yen-Ju	Chen	ychen

[ADD TO LIST...](#) [REMOVE FROM LIST](#) Total: 10 Items Per Page:

<b>Assigned Groups</b>	
<input type="checkbox"/> Group ▲	Description
<input type="checkbox"/> All Platforms	
<input type="checkbox"/> All Server Group	
<input type="checkbox"/> All Services Group	
<input type="checkbox"/> Linux Group of 10	
<input type="checkbox"/> My SQL Servers	
<input type="checkbox"/> vm group	

[ADD TO LIST...](#) [REMOVE FROM LIST](#) Total: 6 Items Per Page:

<b>Alert Calendar</b>							
<input checked="" type="checkbox"/> Monday	From: <input type="button" value="12 AM ▾"/>	To: <input type="button" value="12 AM ▾"/>	<input type="checkbox"/> Except	From: <input type="button" value="1 AM ▾"/>	To: <input type="button" value="2 AM ▾"/>		
<input checked="" type="checkbox"/> Tuesday	From: <input type="button" value="12 AM ▾"/>	To: <input type="button" value="12 AM ▾"/>	<input type="checkbox"/> Except	From: <input type="button" value="1 AM ▾"/>	To: <input type="button" value="2 AM ▾"/>		
<input checked="" type="checkbox"/> Wednesday	From: <input type="button" value="12 AM ▾"/>	To: <input type="button" value="12 AM ▾"/>	<input type="checkbox"/> Except	From: <input type="button" value="1 AM ▾"/>	To: <input type="button" value="2 AM ▾"/>		
<input checked="" type="checkbox"/> Thursday	From: <input type="button" value="12 AM ▾"/>	To: <input type="button" value="12 AM ▾"/>	<input type="checkbox"/> Except	From: <input type="button" value="1 AM ▾"/>	To: <input type="button" value="2 AM ▾"/>		
<input checked="" type="checkbox"/> Friday	From: <input type="button" value="12 AM ▾"/>	To: <input type="button" value="12 AM ▾"/>	<input type="checkbox"/> Except	From: <input type="button" value="1 AM ▾"/>	To: <input type="button" value="2 AM ▾"/>		
<input checked="" type="checkbox"/> Saturday	From: <input type="button" value="12 AM ▾"/>	To: <input type="button" value="12 AM ▾"/>	<input type="checkbox"/> Except	From: <input type="button" value="1 AM ▾"/>	To: <input type="button" value="2 AM ▾"/>		
<input checked="" type="checkbox"/> Sunday	From: <input type="button" value="12 AM ▾"/>	To: <input type="button" value="12 AM ▾"/>	<input type="checkbox"/> Except	From: <input type="button" value="1 AM ▾"/>	To: <input type="button" value="2 AM ▾"/>		

[Save](#)

[\*\*<< Return to Roles\*\*](#)

2. Click **Add to List** in the "Assigned Users" section of the page.

- The **Assign Users to Role** page appears.

### Edit auto inventory: Assign Users to Role

Users			Assign To Role					
	First Name	Last Name	Username		First Name	Last Name	Username	
<input type="checkbox"/>	First Name	Last Name	Username		<input type="checkbox"/>	First Name	Last Name	Username
<input type="checkbox"/>	Guest	User	guest		<input type="checkbox"/>			
<input type="checkbox"/>	Arie	Chapman	achapman		<input type="checkbox"/>			
<input type="checkbox"/>	agim	agim	agim		<input type="checkbox"/>			
<input type="checkbox"/>	Alex	Ma	ama		<input type="checkbox"/>			
<input type="checkbox"/>	Al	Sargent	asargent		<input type="checkbox"/>			
<input checked="" type="checkbox"/>	Vew	User	AViewUser		<input type="checkbox"/>			
<input type="checkbox"/>	Blair	Hester	bhester		<input type="checkbox"/>			
<input type="checkbox"/>	bruce	snyder	bsnyder		<input type="checkbox"/>			
<input type="checkbox"/>	Chip	Disabled	cdisabled		<input type="checkbox"/>			
<input type="checkbox"/>	chris	harris	charis		<input type="checkbox"/>			
<input type="checkbox"/>	chris	prendergast	chrisp		<input type="checkbox"/>			
<input type="checkbox"/>	Charles	Lee	clee		<input type="checkbox"/>			
<input type="checkbox"/>	colin	Sampaleanu	colin		<input type="checkbox"/>			
<input type="checkbox"/>	Contegix	Customer	contegix		<input type="checkbox"/>			
<input type="checkbox"/>	chris	prendergast	cprendergast		<input type="checkbox"/>			

◀ 1 2 3 4 5 6 7 8 ▶

**Ok** **Reset** **Cancel**

3. On the "Users" panel on the left side page, checkmark each HQ user you wish to add to the role, and click the blue arrow to move the users to the "Assign To Role" panel.
  4. Click **OK** when you are done adding users to the role.

If you are creating a role purely for the purpose of role-based alert notification, skip to [Define Alert Calendar for Role](#). Otherwise proceed to [Assign Groups to the Role](#).

## 6.2.2. Assign Groups to a Role

In vFabric Hyperic, the groups of resources you assign to a role constitute the population of resources to which users with that role may exercise the permissions associated with the role. (For example, if the role's permission level to Platforms is **None**, role users will not have access to platforms in groups assigned to the role.)

1. If you are not currently viewing the role to which you wish to assign groups, navigate to the role.

[\*\*<< Return to Roles\*\*](#)

<b>Properties</b>		
<b>* Name:</b> Guest Role <b>Description:</b> <b>Dashboard Name:</b> Guest Role Role Dashboard		<b>Owner:</b> System User (admin) <b>Administer HQ Server YES</b> <b>Configuration:</b>

<b>Permissions</b>		
<b>Resource Type</b>	<b>Permissions</b>	<b>Capabilities</b>
Users	Read Only	
Roles	Read Only	
Groups *	Read Only	Can Fix/Ack Alerts? <input type="checkbox"/>
Platforms	Read Only	Can Fix/Ack Alerts? <input type="checkbox"/> Can Control? <input type="checkbox"/>
Servers	Read Only	Can Fix/Ack Alerts? <input type="checkbox"/> Can Control? <input type="checkbox"/>
Services	Read Only	Can Fix/Ack Alerts? <input type="checkbox"/> Can Control? <input type="checkbox"/>
Applications	Read Only	
Escalations	Read Only	

*\* Regardless of permissions selected, all users have the ability to create groups in the system.*

[EDIT...](#)

<b>Assigned Users</b>		
<input type="checkbox"/> First Name	Last Name	Username ▲
<input type="checkbox"/> Guest	User	guest
<input type="checkbox"/> Don	Baron	donbaron
<input type="checkbox"/> Guest	guest	guest2
<input type="checkbox"/> Helena	Edelson	holly
<input type="checkbox"/> HQ	Demo	hqdemo
<input type="checkbox"/> Kenji	Igarashi	kigarash
<input type="checkbox"/> Robert	Ide	ride
<input type="checkbox"/> Sales	Group	sales
<input type="checkbox"/> Michael	Wood	woodm
<input type="checkbox"/> Yen-Ju	Chen	ychen

[ADD TO LIST...](#) [REMOVE FROM LIST](#) Total: 10 Items Per Page:

<b>Assigned Groups</b>	
<input type="checkbox"/> Group ▲	Description
<input type="checkbox"/> All Platforms	
<input type="checkbox"/> All Server Group	
<input type="checkbox"/> All Services Group	
<input type="checkbox"/> Linux Group of 10	
<input type="checkbox"/> My SQL Servers	
<input type="checkbox"/> vm group	

[ADD TO LIST...](#) [REMOVE FROM LIST](#) Total: 6 Items Per Page:

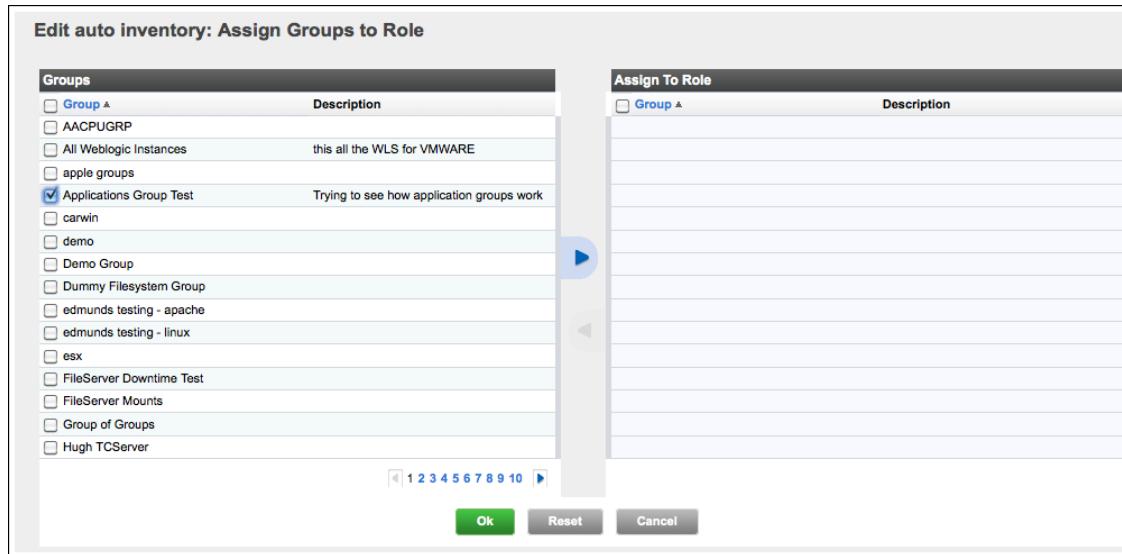
<b>Alert Calendar</b>							
<input checked="" type="checkbox"/> Monday	From: <input type="button" value="12 AM ▾"/>	To: <input type="button" value="12 AM ▾"/>	<input type="checkbox"/> Except	From: <input type="button" value="1 AM ▾"/>	To: <input type="button" value="2 AM ▾"/>		
<input checked="" type="checkbox"/> Tuesday	From: <input type="button" value="12 AM ▾"/>	To: <input type="button" value="12 AM ▾"/>	<input type="checkbox"/> Except	From: <input type="button" value="1 AM ▾"/>	To: <input type="button" value="2 AM ▾"/>		
<input checked="" type="checkbox"/> Wednesday	From: <input type="button" value="12 AM ▾"/>	To: <input type="button" value="12 AM ▾"/>	<input type="checkbox"/> Except	From: <input type="button" value="1 AM ▾"/>	To: <input type="button" value="2 AM ▾"/>		
<input checked="" type="checkbox"/> Thursday	From: <input type="button" value="12 AM ▾"/>	To: <input type="button" value="12 AM ▾"/>	<input type="checkbox"/> Except	From: <input type="button" value="1 AM ▾"/>	To: <input type="button" value="2 AM ▾"/>		
<input checked="" type="checkbox"/> Friday	From: <input type="button" value="12 AM ▾"/>	To: <input type="button" value="12 AM ▾"/>	<input type="checkbox"/> Except	From: <input type="button" value="1 AM ▾"/>	To: <input type="button" value="2 AM ▾"/>		
<input checked="" type="checkbox"/> Saturday	From: <input type="button" value="12 AM ▾"/>	To: <input type="button" value="12 AM ▾"/>	<input type="checkbox"/> Except	From: <input type="button" value="1 AM ▾"/>	To: <input type="button" value="2 AM ▾"/>		
<input checked="" type="checkbox"/> Sunday	From: <input type="button" value="12 AM ▾"/>	To: <input type="button" value="12 AM ▾"/>	<input type="checkbox"/> Except	From: <input type="button" value="1 AM ▾"/>	To: <input type="button" value="2 AM ▾"/>		

[Save](#)

[\*\*<< Return to Roles\*\*](#)

2. Click **Add to List** in the "Assigned Groups" section.

- The **Assign Groups to Role** page appears.



3. On the "Groups" panel on the left side of the page, checkmark each resource group you wish to add to the role, and click the blue arrow to move the groups to the "Assign To Role" panel.
4. Click **OK** when you are done adding groups to the role.

Proceed to [Define Alert Calendar](#), as desired.

### 6.2.3. Define Alert Calendar for Follow-the-Sun Role-Based Notifications

An alert calendar defines the availability calendar during which role users are available for alert notifications. You should define an alert calendar if:

- You are creating a role that will be a recipient of alert notifications, and
- The users assigned to the role users are available only during specific intervals only.

By default, a role's alert calendar settings specify that role users are available for notifications 24 hours a day, 7 days a week, with no exceptions. To define a narrower availability calendar:

1. For each day in the week,
  - a. Use the first set of **From** and **To** pull-downs to specify a start time and an end time that role users are available for notifications.
  - b. If there is a period of time within the availability period specified in the previous step, during which role users should *not* receive notifications, click **Except**, and use the **From** and **To** pull-downs on the right to specify that period of time.
2. Click **Save** after defining the alert calendar.

**Tip:** You must define additional role or roles with complementary alert calendars to ensure that there is a role whose users are available during periods of time that the current role's alert calendar does not include.

## 6.2.4. Customize Role-Specific Dashboard

When you create a role, vFabric Hyperic creates a Dashboard with the same name as the role, which Hyperic users with the role can select from the **Select a Dashboard** pull-down in the upper left corner of the Hyperic Dashboard.

As desired, you can add, remove, or reconfigure the portlets on the role dashboard to meet the needs of role users. For more information see "Role-Based Dashboards in vFabric Hyperic".

## 6.2.5. Use Roles for "Follow the Sun" Alerting

HQ allows you to notify users of incidents based on support schedules, greatly simplifying the management of 24x7 or rotating support teams. This is accomplished through the use of role-based alert calendars. The alert calendar can be most usefully applied in an [escalation scheme](#), wherein multiple sets of people can be selected for notification, but only the one whose alert calendar is currently open will be notified.

To implement "follow the sun" alerting:

1. [Create multiple roles](#).
2. For each role, assign complementary alert calendars (that is, alert calendars that span different periods of time, but all together cover the calendar).
  - On the "Edit Role" screen, follow the [instructions](#) for creating a calendar for a role.
3. [Define an escalation scheme](#) with at least one "SMS" or "email" escalation action.
  - In the escalation action, instruct HQ to notify "All users assigned to a specific role" and then select all of the just-defined roles.
4. Create an alert and assign that escalation scheme to it.

When the alert is fired, HQ will start performing the escalation actions but will only notify the roles whose alert calendars are currently open.

## 6.2.6. List Roles

1. Click **List Roles** on the **Administration** page.
  - The **List Roles** page appears.A screenshot of the **List Roles** page is shown below.

**List Roles**

**Authentication/Authorization**

	Members	Description
<input type="checkbox"/> <a href="#">Name</a>		▲
<input type="checkbox"/> <a href="#">Super User Role</a>	57	
<input type="checkbox"/> <a href="#">Guest Role</a>	10	
<input type="checkbox"/> <a href="#">asmorrison1 Role</a>	6	
<input type="checkbox"/> <a href="#">auto inventory</a>	7	
<input type="checkbox"/> <a href="#">AView role</a>	7	
<input type="checkbox"/> <a href="#">AViewrole</a>	5	
<input type="checkbox"/> <a href="#">ClientA</a>	0	
<input type="checkbox"/> <a href="#">Database Experts</a>	7	
<input type="checkbox"/> <a href="#">DBA</a>	8	
<input type="checkbox"/> <a href="#">Dummy1 Role</a>	5	
<input type="checkbox"/> <a href="#">EdmundsApps</a>	6	
<input type="checkbox"/> <a href="#">EdmundsDBA</a>	5	
<input type="checkbox"/> <a href="#">EdmundsExec</a>	5	
<input type="checkbox"/> <a href="#">EdmundsLinux</a>	5	
<input type="checkbox"/> <a href="#">EdmundsNetwork</a>	5	

**Users:** [List Users](#)    [New User...](#)

**Roles:** [List Roles](#)    [New Role...](#)

**Actions:** [NEW...](#) [DELETE](#)

Total: 50 Items Per Page: [15](#) [◀](#) [1](#) [2](#) [3](#) [4](#) [▶](#)

The **List Roles** page lists the following information for each role.

- **Name** — Click a role name to view and edit the role.
- **Number of Members**
- **Description**

### 6.2.7. View a Role

1. List roles, following the instructions in [List Roles](#).
2. Click the name of role you wish to view.

A screenshot of the *RoleName* page is shown below.

### Guest Role

[\*\*<< Return to Roles\*\*](#)

<b>Properties</b>		
* Name: Guest Role Description: Dashboard Name: Guest Role Role Dashboard	Owner: System User (admin) Administer HQ Server YES Configuration:	

<b>Permissions</b>		
Resource Type	Permissions	Capabilities
Users	Read Only	
Roles	Read Only	
Groups *	Read Only	Can Fix/Ack Alerts? <input type="checkbox"/>
Platforms	Read Only	Can Fix/Ack Alerts? <input type="checkbox"/> Can Control? <input type="checkbox"/>
Servers	Read Only	Can Fix/Ack Alerts? <input type="checkbox"/> Can Control? <input type="checkbox"/>
Services	Read Only	Can Fix/Ack Alerts? <input type="checkbox"/> Can Control? <input type="checkbox"/>
Applications	Read Only	
Escalations	Read Only	

\* Regardless of permissions selected, all users have the ability to create groups in the system.

[EDIT ...](#)

<b>Assigned Users</b>		
First Name	Last Name	Username
Guest	User	guest
Don	Baron	donbaron
Guest	guest	guest2
Helena	Edelson	holly
HQ	Demo	hqdemo
Kenji	Igarashi	kigarash
Robert	Ide	ride
Sales	Group	sales
Michael	Wood	woodm
Yen-Ju	Chen	ychen

Total: 10 Items Per Page:

<b>Assigned Groups</b>	
Group	Description
All Platforms	
All Server Group	
All Services Group	
Linux Group of 10	
My SQL Servers	
vm group	

Total: 6 Items Per Page:

<b>Alert Calendar</b>					
<input checked="" type="checkbox"/> Monday	From: <input type="button" value="12 AM"/>	To: <input type="button" value="12 AM"/>	<input type="checkbox"/> Except	From: <input type="button" value="1 AM"/>	To: <input type="button" value="2 AM"/>
<input checked="" type="checkbox"/> Tuesday	From: <input type="button" value="12 AM"/>	To: <input type="button" value="12 AM"/>	<input type="checkbox"/> Except	From: <input type="button" value="1 AM"/>	To: <input type="button" value="2 AM"/>
<input checked="" type="checkbox"/> Wednesday	From: <input type="button" value="12 AM"/>	To: <input type="button" value="12 AM"/>	<input type="checkbox"/> Except	From: <input type="button" value="1 AM"/>	To: <input type="button" value="2 AM"/>
<input checked="" type="checkbox"/> Thursday	From: <input type="button" value="12 AM"/>	To: <input type="button" value="12 AM"/>	<input type="checkbox"/> Except	From: <input type="button" value="1 AM"/>	To: <input type="button" value="2 AM"/>
<input checked="" type="checkbox"/> Friday	From: <input type="button" value="12 AM"/>	To: <input type="button" value="12 AM"/>	<input type="checkbox"/> Except	From: <input type="button" value="1 AM"/>	To: <input type="button" value="2 AM"/>
<input checked="" type="checkbox"/> Saturday	From: <input type="button" value="12 AM"/>	To: <input type="button" value="12 AM"/>	<input type="checkbox"/> Except	From: <input type="button" value="1 AM"/>	To: <input type="button" value="2 AM"/>
<input checked="" type="checkbox"/> Sunday	From: <input type="button" value="12 AM"/>	To: <input type="button" value="12 AM"/>	<input type="checkbox"/> Except	From: <input type="button" value="1 AM"/>	To: <input type="button" value="2 AM"/>

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## Properties Section

The **Properties** section contains this information:

- **Name**
- **Owner** — The user that created the role.
- **Description**
- **Administer HQ Server Configuration**
- **Dashboard Name**

## Permissions Section

The **Permissions** section displays the permission matrix for the role.

- **None** - No access at all to instances of the type.
- **Read-Only** - Allows role users to view instances of the type, but not create, edit, or delete them. For **Platforms, Servers, Services, Groups**, also enables:
  - **Read-Only** access to alert definitions for the inventory type.  
  
A role with **Read-Only** permission level does **not** have permissions to enable/disable/fix/ack alerts or control resources - these capabilities must be explicitly granted.
- **Read-Write** - Allows role users to view and edit instances of the type, but not create or delete them. For **Platforms, Servers, Services, Groups**, also gives:
  - **Full** access to alert definitions for the inventory type,
  - Permission to manage alerts (enable/disable, fix, acknowledge) for the inventory type.
  - Permission to perform supported control operations on resources of the inventory type.
- **Full** - Allows role users to create, edit, delete, and view instance of the type. For **Platforms, Servers, Services, Groups**, also gives:
  - **Full** access to alert definitions for the inventory type.
  - Permission to manage alerts (enable/disable, fix, acknowledge) for the inventory type.
  - Permission to perform supported control operations on resources of the inventory type. Click **Edit** to modify the permission matrix.

## Assigned Users

The **Assigned User** section lists the following information for each user assigned to the role:

- **First Name**
- **Last Name**
- **UserName** — Click to view the user.

Click **Add to List** to add users to the role.

## Assigned Groups

The **Assigned Groups** section lists the following information for each group assigned to the role:

- **Group** — The name of the group. Click to view the group.
- **Description**

Click **Add to List** to add users to the role.

## Alert Calendar

The **Alert Calendar** section defines the availability calendar during which role users are available for alert notifications.

Custom alerts calendars enable "follow the sun" alert notifications. To implement a follow the sun notification strategy, you create multiple roles with complementary alert calendars. You assign a user to the role whose alert calendar matches the user's availability.

By default, a role's alert calendar settings specify that role users are available for notifications 24 hours a day, 7 days a week, with no exceptions.

To define an availability calendar for a role:

1. For each day in the week,
  - a. Use the first set of **From** and **To** pull-downs to specify a start time and an end time that role users are available for notifications.
  - b. If there is a period of time within the availability period specified in the previous step, during which role users should *not* receive notifications, click **Except**, and use the **From** and **To** pull-downs on the right to specify that period of time.
2. Click **Save** after defining the alert calendar.

You must define additional role or roles with complementary alert calendars to ensure that there is a role whose users are available during periods of time that the current role's alert calendar does not include.

### 6.2.8. Edit a Role

1. List roles, following the instructions in [List Roles](#).
2. Click the name of role you wish to edit.
3. To make changes to:
  - Role permissions — Click **Edit** in the **Permissions** section of the page. See [Define Role Permission Matrix](#) for instructions.
  - Which users are assigned to the role — Click **Edit** in the **Assigned Users** section of the page. See [Assign Users to a Role](#) for instructions.

- The alert calendar for role — Follow the instructions in [Define Alert Calendar for Follow-the-Sun Role-Based Notifications](#).

## 6.3. Role-Based Dashboards in vFabric Hyperic

Available only in vFabric Hyperic

- [Section 6.3.1, “Role-Based Dashboards”](#)
- [Role-Based Dashboards are Automatically Available](#)
- [Permissions for Modifying Role-Based Dashboards](#)
- [Tailor a Role-Based Dashboard](#)

### 6.3.1. Role-Based Dashboards

A role-based dashboard is a version of the HQ dashboard available to users assigned to the role. A role-based dashboard can be customized to match the needs and interests of users with that role. You can configure the contents of a role-based dashboard to meet the needs of users with that role.

A role-based dashboard is available in addition to a user's personal dashboard. Every HQ Enterprise user has a personal dashboard, and a role-based dashboard for each role to which he is assigned.

Any modification to a role-based dashboard affects all users with the role; unlike a personal dashboard, a role-based dashboard cannot be customized on a per user basis.

#### Role-Based Dashboards are Automatically Available

Upon creation of a new role, a copy of the standard HQ Enterprise dashboard is saved and available to members of the role. Any HQ user with this role can navigate to it using the **Select a Dashboard** pull-down, and designate it as his default dashboard.

The default dashboard for a new user is his personal dashboard. To set a role-based dashboard to be the default, a user must select it and click **Make Default**.

#### Permissions for Modifying Role-Based Dashboards

A role-based dashboard can be modified by:

- an HQ administrator with the Super User role
- an HQ user assigned to the role, if the role grants the "Modify" permission for "Roles".

#### Tailor a Role-Based Dashboard

To tailor the layout and content of a role-based dashboard:

1. Select the role-based dashboard from the **Select a Dashboard** pull-down on the currently displayed dashboard.
2. Add, configure, remove, and rearrange the portlets in the dashboard, as desired. [Instructions](#) are available on the dashboard help page.

Modifications to a role-based dashboard are immediate, and will appear any time a user with that role accesses it.

## 7. Set Up Alert Notifications and Escalations

- [Section 7.1, “Tailor Alert Notification Templates”](#)
- [Section 7.2, “Configure Roles for Role-Based Alert Notifications”](#)
- [Section 7.3, “Enable SNMP Trap Notifications”](#)
- [Section 7.4, “Enable Syslog Notifications for Escalations”](#)
- [Section 7.5, “Configure and Manage Escalations”](#)
- [Section 7.6, “Set Up Alert Action Script”](#)
- [Section 7.7, “Configure a Custom Control Action”](#)

## 7.1. Tailor Alert Notification Templates

Topics marked with \* relate to features available only in vFabric Hyperic.

- [Section 7.1.1, “Groovy Server Pages Define Notification Content and Format”](#)
- [Section 7.1.2, “Email Notifications”](#)
  - [Email Notification Subject Line](#)
  - [Email Notification Body](#)
  - [Variables Available for Notification Templates](#)

### 7.1.1. Groovy Server Pages Define Notification Content and Format

The content and format of alert notifications are governed by Groovy Server Pages in \server-n.n.n-EE \hq-engine\hq-server\webapps\ROOT\WEB-INF\alertTemplates.

- `subject.gsp` - defines the subject line in email notifications
- `html_email.gsp` - defines the body of an HTML email alert notification
- `text_email.gsp` - defines the body of a text email alert notification
- `sms_email.gsp` - defines the body of an SMS alert notification
- `opennms_notify.gsp` - defines an OpenNMS SNMP trap
- `snmp_trap.gsp` - defines an SNMP trap

The following sections describe the content of each type of notification.

### 7.1.2. Email Notifications

Recipients can be specific HQ users, all HQ users with a given role, or external recipients. Email to an HQ user is sent in the mail format specified in the user's HQ [user profile](#).

#### Email Notification Subject Line

The subject line of an email notification contains the string "HQ" followed by the alert priority, the alert definition name, the name of the resource for which the alert conditions were met, and the alert status.

```
<![CDATA[ [HQ] ${priority} - ${alertDef.name} ${resource.name} ${status} ]]>
```

For example, this subject line:

```
<![CDATA[ [HQ]!! - High Disk Usage saint Win32 File System R:(remote/NTFS) ]]>
```

notifies the recipients of a medium priority alert named "High Disk Usage" that was triggered for the resource whose name is "saint Win32 File System R:\(remote/NTFS)".

#### Email Notification Body

The body of the alert notification provides these details:

- Resource name
- Alert name
- Alert date/time
- Triggering condition, for instance, the threshold value for the alert and the actual value that triggered the alert
- Alert [severity](#)
- For an Alert on a individual resource, the last value of the each of the resource's indicator metrics before the alert was triggered
- For group alerts, an "Additional Information" section that lists the group's specific member resources that triggered the alert and a link to a metric chart showing the triggering metric values
- A link to the [alert detail](#) in the HQ Portal

## Variables Available for Notification Templates

The table below lists the alert-related class fields you can reference as variables in the .gsp templates that govern the content of alert notifications.

You can insert a variable of this form:

`$ClassVar.FieldVar`

where `ClassVar` is the class with the field, and `FieldVar` is a field for which the class contains a `get()` method.

for example, this variable

`${alertDef.description}`

renders the alert definition description from an `AlertDefinitionInterface` class.

Append the variable for the desired field to the variable of class that provides it, with a dot (.) separator to specify the variable for a field.

For data about....	from this class..	use this class variable	and a field variable....
The alert definition for the fired alert	<code>AlertDefinitionInterface</code>	<code>alertDef</code>	<code>description</code> <code>id</code> <code>name</code> <code>priority</code>
The fired alert	<code>AlertInterface</code>	<code>alert</code>	<code>id</code> <code>timestamp</code>
Alert actions	<code>ActionExecutionInfo</code>	<code>action</code>	<code>longReason</code> <code>shortReason</code>
Resource that fired the alert	<code>Resource</code>	<code>resource</code>	<code>instanceID</code> <code>mtime</code> <code>owner</code> <code>prototype</code> <code>resourceType</code>
Notification recipients	<code>AuthzSubject</code>	<code>user</code>	<code>active</code> <code>department</code>

For data about....	from this class..	use this class variable	and a field variable....
			emailAddress firstName fullName htmlEmail lastName phoneNumber smsAddress
status of an alert		no class variable required	status
whether an escalation action is an SMS notification		no class variable required	IsSms

## 7.2. Configure Roles for Role-Based Alert Notifications

Available only in vFabric Hyperic

- [Section 7.2.1, “Roles for Alert Notifications”](#)
- [Section 7.2.2, “Follow the Sun” Alerting with Role-Based Alert Calendars”](#)
- [Section 7.2.3, “Creating Roles”](#)

### 7.2.1. Roles for Alert Notifications

In addition to using roles to grant access to permissions and resources, you can use roles to satisfy your alert notification requirements. When you create an alert definition, you can designate one or more roles to be notified when the alert fires. Designating a role to be notified is easier than designating individual users. Role-based notifications also simplifies management of notification rules - you can add or remove users from the role, instead of adding or removing individual users to be notified when alerts fire.

Typically, you create roles specifically for use in alert definitions. Roles created for use in alert definitions have no permissions and no assigned resource groups - only users.

### 7.2.2. "Follow the Sun" Alerting with Role-Based Alert Calendars

If you use role-based alert notifications, you can specify an *Alert Calendar* that dictates when users assigned to a role can be notified about an alert. The purpose of this calendar is to ensure that the appropriate people are notified at the appropriate times of the day (for example, a worker in California doesn't want to be notified of an alert at 4 a.m. PST, but a worker in New York can be notified at the same time, which is 7 a.m. EST) when an alert is triggered.

The alert calendar can be most usefully applied in an escalation scheme, wherein multiple sets of people can be selected for notification, but only the one whose alert calendar is currently open will be notified.

You set up multiple roles, each with a unique alert calendar that spans different periods of time, that together cover the calendar. You create an escalation with one or more notification actions (email or SMS), and assign all of the roles that span the calendar to the notification action(s) in the escalation. When the alert fires, only the users in the role whose calendar is currently open will be notified.

### 7.2.3. Creating Roles

An authorized user can access the **New Role** command in the **Administration** tab of the HQ user interface.

You can also create HQ roles using the [HQApi role command](#).

## 7.3. Enable SNMP Trap Notifications

Available only in vFabric Hyperic

- [Section 7.3.1, “Configure HQ Server to Send SNMP Traps”](#)
- [Configure HQ Server Enterprise for SNMP v1](#)
- [Configure HQ Server Enterprise for SNMP v2c](#)
- [Configure HQ Server Enterprise for SNMP v3](#)
- [Section 7.3.2, “Using SNMP Traps in Alert Definitions”](#)

This page has information about enabling vFabric Hyperic to send SNMP traps to an SNMP management system.

**Note:** For information about enabling Hyperic to *receive traps*, see [Configuring HQ as an SNMP Trap Receiver](#).

### 7.3.1. Configure HQ Server to Send SNMP Traps

1. Click **HQ Server Settings** on the **Administration** page.
2. At the bottom of the page, in the "SNMP Server Configuration Properties" section, define the properties for your version of SNMP. See the appropriate section below.

#### Configure HQ Server Enterprise for SNMP v1

Select "v1" from the **SNMP Protocol Version** pulldown and supply values for the properties defined in the table below.

The table below defines the properties for configuring HQ Server for SNMP V1 communications with an NMS.

Configuration Option	Description	Allowable Values
SNMP Trap OID	The OID of the notification to be sent. Supplies the value of <code>snmpTrapOID.0</code> - the second varbind in a trap or inform that HQ Server generates. (The first varbind is <code>SysUpTime.0</code> .)	
Default Notification Mechanism	Your selection governs the notification type that will appear as the default notification type option in the "Notification Mechanism" pull-down list that is presented in configuration dialogs when user configures an SNMP notification as an alert action, or as a step in an escalation.	For v1 of the SNMP protocol, choose V1 Trap. This is the only trap type you can generate for SNMP v1.
Enterprise OID	Enterprise OID.	
Community	The community name to be sent with the trap.	
Generic ID	Single digit identifier of the trap type.	0 - coldStart 1 - warmStart

Configuration Option	Description	Allowable Values
		2 - linkDown 3 - linkUp 4 - authenticationFailure 5 - egpNeighborLoss 6 - enterpriseSpecific
Specific ID	The specific trap code for an enterprise-specific trap (when <b>Generic ID</b> is set to 6).	
Agent Address	Address of the managed object that generates the trap.	

## Configure HQ Server Enterprise for SNMP v2c

Configuration Option	Description	Allowable Values
SNMP Trap OID	The OID of the notification to be sent. Supplies the value of <code>snmpTrapOID.0</code> - the second varbind in a trap or inform that HQ Server generates. (The first varbind is <code>SysUpTime.0</code> .)	
Default Notification Mechanism	Specifies the default notification type that will appear in configuration dialogs when an authorized user configures an SNMP notification as an alert action, or as a step in an escalation. This choice simply defines the default option - the user configuring an alert action or escalation can choose a different message type.	<ul style="list-style-type: none"> <li>• V1 Trap</li> <li>• V2c Trap</li> <li>• Inform</li> </ul>
Community	The community name to be sent with the trap.	

## Configure HQ Server Enterprise for SNMP v3

This section lists the properties for enabling HQ Enterprise to sent SNMP notifications to an NMS. When HQ is so enabled, you can use SNMP notifications in alert definitions - as alert actions and escalation steps.

Configuration Option	Description	Allowable Values
SNMP Trap OID	The OID of the notification to be sent. Supplies the value of <code>snmpTrapOID.0</code> - the second varbind in a trap or inform that HQ Server generates. (The first varbind is <code>SysUpTime.0</code> .)	
Default Notification Mechanism	Specifies the default notification type that will appear in configuration dialogs when an authorized user configures an SNMP notification as an alert action, or as a step in an escalation.	<ul style="list-style-type: none"> <li>• V1 Trap</li> <li>• V2c Trap</li> </ul>

Configuration Option	Description	Allowable Values
	er configures an SNMP notification as an alert action, or as a step in an escalation. This choice simply defines the default option - the user configuring an alert action or escalation can choose a different message type.	<ul style="list-style-type: none"> <li>Inform</li> </ul>
Security Name	The username HQ's SNMP agent should use when sending notifications to the NMS.	Required.
Local Engine ID	ID of HQ's SNMP agent; this value appears automatically, and is not user-configurable.	
Auth Protocol	The SNMP authentication protocol HQ Server should use for communications with the NMS.	<ul style="list-style-type: none"> <li>none</li> <li>MD5</li> <li>SHA</li> </ul>
Auth Passphrase	The SNMP authorization passphrase configured for use when communication with the NMS.	
Privacy Protocol	The SNMP Privacy Protocol HQ Server should use for communication with the NMS.	<ul style="list-style-type: none"> <li>none</li> <li>DES</li> <li>3DES</li> <li>AES-128,</li> <li>AES-192</li> <li>AES-256</li> </ul>
Privacy Passphrase	The SNMP privacy passphrase configured for use when communication with the NMS.	
Context Engine ID	The EngineID of the NMS. This, along with Context Name, identifies the SNMP context for accessing management data.	Required for v1 and v2c traps. Do not supply for Inform.
Context Name	The name of the SNMP context that provides access to management information on the NMS. A context is identified by the Context Name and Context Engine ID.	

### 7.3.2. Using SNMP Traps in Alert Definitions

After the configuration above is complete, the "SNMP Trap" notification tab is available when you define or edit an alert definition.

## 7.4. Enable Syslog Notifications for Escalations

Topics marked with \* relate to features available only in vFabric Hyperic.

- [Section 7.4.1, “About Syslog Notifications in Alert Escalations”](#)
- [Section 7.4.2, “Enable Syslog Notifications”](#)
  - [Enable the Syslog Receiver](#)
  - [Enable Syslog Appender](#)
  - [Restart Hyperic Server](#)

### 7.4.1. About Syslog Notifications in Alert Escalations

You can enable HQ to issue a syslog notification as a step in an alert escalation. The notification will log a line in the following format:

```
SyslogAction[ALERT_ID]: DB_1 4 META/PRODUCT/VERSION RESOURCE_NAME :
ALERT_NAME - ALERT_CONDITION
```

where:

- ALERT\_ID is a number representing the alert ID in HQ.
- META is the "Meta" string configured for the syslog action in the escalation.
- PRODUCT is the "Product" string configured for the syslog action in the escalation.
- VERSION = is the "Version" string configured for the syslog action in the escalation.
- RESOURCE\_NAME identifies the resource for which the alert was fired.
- ALERT\_NAME identifies the alert definition that fired the alert.
- ALERT\_CONDITION is the alert condition and reported measurement that led to the alert firing, for example, "If Availability > 0.0 (actual value = 1)"

### 7.4.2. Enable Syslog Notifications

You enable syslog notification in the HQ Server's `server-log4j.xml` file, in `SERVER_HOME/conf`.

#### Enable the Syslog Receiver

`syslogd`, the syslog receiver, must be enabled to accept remote logging, even on `localhost`. This can be done by passing `-r` to `syslogd` at startup.

#### Enable Syslog Appender

In the appenders section of the file, uncomment these lines and change the logger level to INFO instead of ERROR.

```
<! [CDATA[&lt;appender name="SYSLOG" class="org.apache.log4j.net.SyslogAppender"&gt;
```

## Enable Syslog Notifications for Escalations

```
<errorHandler class="org.apache.log4j.helpers.OnlyOnceErrorHandler"/>
<param name="Facility" value="SYSLOG"/>
<param name="FacilityPrinting" value="true"/>
<param name="SyslogHost" value="localhost"/>
<layout class="org.apache.log4j.PatternLayout">
    <param name="ConversionPattern" value="%c{1}[%r]: %m%n"/>
</layout>
</appender>

<logger name="org.hyperic.hq.bizapp.server.action.log.SyslogAction">
    <level value="INFO" />
    <appender-ref ref="SYSLOG" />
</logger>]]>
```

**Note:** If you want to configure a different Facility for the appender, note that it must be syslog-configured.

If `server-log4j.xml` does not contain the lines shown above, add them in the appenders section. All appenders in the file must be grouped together.

## Restart Hyperic Server

After the Hyperic Server is restarted, syslog notification will be presented as an option when you set up an escalation.

## 7.5. Configure and Manage Escalations

- [Section 7.5.1, “Create an Escalation”](#)
  - [Step 1 - Create New Escalation Scheme](#)
  - [Step 2 - Create Escalation Actions](#)
    - [Create an Email or SMS Action](#)
    - [Create a Sys Log Action](#)
    - [Create an SNMP Notification Action](#)
    - [Create a Suppress Alerts Action](#)
- [Section 7.5.2, “View an Escalation”](#)
- [Section 7.5.3, “Edit an Escalation”](#)
- [Section 7.5.4, “Delete an Escalation”](#)

## 7.5.1. Create an Escalation

For a description of the functionality that escalation schemes enable in Hyperic, see [Escalations](#).

### Step 1 - Create New Escalation Scheme

1. Click **Administration** in the masthead.
2. Click **Escalation Schemes Configuration**.
3. Enter values in the **Name** and optionally, the **Description** fields.
4. Configure acknowledgment options in the "If the alert is acknowledged" section:
  - **Allow user to pause escalation for** - Click to enable a user to pause the escalation when acknowledging the alert. Select "Until Fixed" or a duration from the pulldown list. (Options range from 5 minutes to 72 hours.) A user acknowledging an alert with this escalation will have the option of pause the escalation process for the period you specify.
  - **Continue escalation without pausing** - With this default value, a user acknowledging an alert with this escalation will not be offered the option to pause the escalation
5. Configure state change notification options in the "If the alert state has changed" section:
  - **Notify previously notified users of the change** - With this default setting, when the state of the alert changes, state change notifications will be sent only to recipients who have already received a notification in previous escalation steps.
  - **Notify entire escalation of the change** - Click if you want alert state change notifications to be sent to every notification recipient in the escalation - whether or not they have received a previous notification.
6. Configure escalation repeat behavior in the "If alert is fixed" section:
  - **Stop escalation execution** - With this default setting, the escalation will not be repeated for an alert that is unfixed at the end of the escalation.
  - **Repeat escalation actions** - Click to repeat the escalation process if the alert has not been fixed by the end of the escalation.
7. Click **Next Step**.

### Step 2 - Create Escalation Actions

After performing [Step 1 - Create New Escalation Scheme](#):

1. On the **Escalation Configuration** page, click **Create Action**.
2. In the **Create Escalation Scheme Actions** section, select an action type and proceed to the directions for that type.
  - Email - [Create an Email or SMS Action](#)
  - SMS - [Create an Email or SMS Action](#)
  - Sys Log - [Create a Sys Log Action](#)
  - SNMP Trap - [Create an SNMP Notification Action](#)

- Suppress Alert - [Create a Suppress Alerts Action](#)

### Create an Email or SMS Action

After selecting the "Email" or "SMS" action type:

1. Select a notification target type from the **Choose Who to Notify** pulldown:
  - Notify Roles\* - You will be prompted to select one or more Hyperic roles. The Hyperic users with those role assignments will be notified.
  - Notify HQ Users - You will be prompted to select one or more Hyperic users to be notified.
  - Notify Other Recipients - You will be prompted to enter a comma-separated email list of the email addresses for the individuals you be notified.
2. Leave "continue" selected if you want the next step in the escalation to occur immediately after the current one. To specify a delay before the next step is performed, select an interval from the pulldown. The intervals range from 5 minutes to 24 hours.
3. Click **Save**.
4. Repeat [Step 2 - Create Escalation Actions](#) to add another step to the escalation, as desired

### Create a Sys Log Action

This option is available if the configuration described in [Section 7.4, “Enable Syslog Notifications for Escalations”](#) has been performed.

After selecting the "Sys Log" action type:

1. Supply the value for these segments of the syslog message:
  - **meta**
  - **product**
  - **version**
2. Leave "Then continue" selected if you want the next step in the escalation to occur immediately after the current one. To specify a delay before the next step is performed, select an interval from the pulldown. The intervals range from 5 minutes to 24 hours.
3. Click **Save**.
4. Repeat [Step 2 - Create Escalation Actions](#) to add another step to the escalation.

#### About Syslog Notifications

You can enable HQ to issue a syslog notification as a step in an alert escalation. The notification will log a line in the following format:

```
SyslogAction[ALERT_ID]: DB_1 4 META/PRODUCT/VERSION RESOURCE_NAME :  
ALERT_NAME - ALERT_CONDITION
```

where:

- **ALERT\_ID** is a number representing the alert ID in HQ.
- **META** is the "Meta" string configured for the syslog action in the escalation.
- **PRODUCT** is the "Product" string configured for the syslog action in the escalation.
- **VERSION** = is the "Version" string configured for the syslog action in the escalation.
- **RESOURCE\_NAME** identifies the resource for which the alert was fired.
- **ALERT\_NAME** identifies the alert definition that fired the alert.
- **ALERT\_CONDITION** is the alert condition and reported measurement that led to the alert firing, for example, "If Availability > 0.0 (actual value = 1)"

## Create an SNMP Notification Action

You can define an SNMP notification to be performed as a step in an escalation if the Hyperic Server is configured for your NMS. See "SNMP Server Configuration Properties" on [Hyperic Server Settings help page](#) for more information.

The trap or inform sent when the escalation step is performed will contain three variable bindings:

- **sysUptimeOID.0** - No configuration is required for this binding.
- **snmpTrapOID.0** - This binding is configured on the HQ Server settings page.
- A variable binding for the alert data specified in **snmp\_trap.gsp**, a Groovy Server Page template that returns the alert definition name and the "short reason" for firing. This template can be customized, as desired. For more information, see [Tailoring Alert Notification Templates](#).
- any additional variable bindings you define.

To configure an SNMP notification as an escalation step:

1. After selecting the "SNMP Notification" action type, enter:

- **IP Address** - Enter the address and port of the target SNMP server.
- **Notification Mechanism** - Choose the type of notification to send.
  - v1 Trap
  - v2c Trap
  - Inform - not supported if Hyperic Server is configured for SNMP v1.
- **OID** - Enter the OID of the notification that will contain the alert details specified in the **snmp\_trap.gsp** template.

2. For each additional variable binding you wish to add, click **Add Another Variable Binding** and enter:

- **OID** - Enter an additional OID to include in the notification.
- **Value** - Enter a value for the OID. You can enter plain text, or an alert variable. For more information, see [Variables Available for Notification Templates](#).

3. Leave "Then continue" selected if you want the next step in the escalation to occur immediately after the current one. To specify a delay before the next step is performed, select an interval from the pulldown. The intervals range from 5 minutes to 24 hours.

4. Click **Save**.

5. Repeat [Step 2 - Create Escalation Actions](#) to add another step to the escalation.

### Create a Suppress Alerts Action

This action stops the alert from repeated firing - it is useful if the alert definition for the fired alert is not configured to "fire once until fixed", and but you want to stop repetitive firing at a specific point in the escalation process. After this step in the escalation process is performed, the alert will not fire again until fixed.

After selecting the "SNMP Notification" action type:

1. Leave "Then continue" selected if you want the next step in the escalation to occur immediately after the current one. To specify a delay before the next step is performed, select an interval from the pulldown. The intervals range from 5 minutes to 24 hours.

2. Click **Save**.

3. Repeat [Step 2 - Create Escalation Actions](#) to add another step to the escalation.

## 7.5.2. View an Escalation

To view an escalation:

1. Click **Administration** in the masthead.

2. Click **Escalation Schemes Configuration**.

3. In the "Escalation Name" panel on the left side of the page, click the escalation's name.

- The escalation details appear on the right side of the page.

## 7.5.3. Edit an Escalation

Edits to an escalation scheme take effect for all alert definitions to which the escalation has previously been assigned. When you edit an escalation, you can:

- Edit an escalation's **Name**, **Description**, and its acknowledgment, notification, and repeat behaviors.
- Delete actions from an escalation.
- Add actions to an escalation.

You cannot edit an escalation action, you must delete it and create a new action.

To edit an escalation:

1. Navigate to the escalation as described in [View an Escalation](#).

2. To change the scheme's **Name**, **Description**, or high-level instructions, click **Edit**, change the values, and click **Save**.

3. To delete an existing action, click **Delete** to the right of the action.
4. To create a new action, choose an action type and follow the instructions in [Step 2 - Create Escalation Actions](#).

#### Editing an Escalation Affects Escalations in Progress

When you edit an escalation scheme, Hyperic will immediately stop executing any escalations that are in progress for alerts to which the escalation is assigned. Note that once an escalation for an alert has been stopped: \* The alert cannot be acknowledged.

- No further notifications of alert state changes will be issued. So, although an alert with a stopped escalation can be "fixed", notification recipients configured for the escalation will not be notified that the alert was fixed.

### 7.5.4. Delete an Escalation

To delete an escalation:

1. Navigate to the escalation as described in [View an Escalation](#).
2. In the "Escalation Name" section, click **Delete** to the right of the scheme's name.

#### Deleting an Escalation Affects Associated Alerts and Escalations in Progress

When you delete an escalation scheme:

- Hyperic will immediately stop executing any escalations that are in progress for alerts to which the escalation is assigned.
- The escalation will be removed from any alert definition to which the escalation was assigned; when an alert fires, the escalation process will not be performed.

## 7.6. Set Up Alert Action Script

Available only in vFabric Hyperic

- [Section 7.6.1, “Define a Script Action for an Alert”](#)
- [Section 7.6.2, “Environment Variables for Fired Alert Data”](#)
- [Section 7.6.3, “Example Script”](#)
- [Section 7.6.4, “Assign the Script Action to an Alert”](#)

### 7.6.1. Define a Script Action for an Alert

A script action allows you to access and use Hyperic environment variables that contain information about a fired alert. You can use the data in any fashion you wish, for instance in a web service call to external management system.

To use the script action feature, write a script that implements the action or logic you wish to perform with the alert-related environment variables. When you configure the alert, specify the script to be executed when the alert fires. The script is server-side only, meaning it must be accessible and executable by the same user running the HQ Server process.

#### Agent-side Scripts

If you wish to execute agent-side scripts, see [User-Defined Control Actions](#)

Script actions can be defined for resource alerts and resource type alerts. In this version of Hyperic, escalation schemes do not support script actions.

### 7.6.2. Environment Variables for Fired Alert Data

The environment variables for fired alert data are prefixed with the string "HYPERIC\_". The table below describes the variables.

Variable	Description	Example Output
HYPERIC_ALERT_TIME	The time at which the alert fired, in milliseconds from epoch.	1219167000000
HYPERIC_ALERT_CONDITION	The condition that caused the alert to fire. Note: This environment variable is supported only on Unix-based platforms. The value contains the Java \n character, which causes errors under Windows. In Windows environments, use the HYPERIC_ALERT_SUMMARY variable, which provides the same information without the \n character.	If Load Average 5 Minutes > 1.0 (actual value = 1.4)
HYPERIC_ALERT_DESCRIPTION	The description of the alert that fired.	This alert will fire when the load rises

Variable	Description	Example Output
HYPERIC_ALERT_ID	<p>This variable was added in Hyperic 4.3.</p> <p>The internal Hyperic ID for the alert that fired.</p> <p><b>Note:</b> The HYPERIC_ALERT_ID for an alert is not committed to the Hyperic database until all alert actions are complete. Therefore, an alert action script (whether it uses SQL or HQApi) cannot query or update the Hyperic database using the alert's HYPERIC_ALERT_ID, because that value will not yet exist in the Hyperic database.</p>	
HYPERIC_ALERT_NAME	The name of the alert that fired.	High Load
HYPERIC_ALERT_PRIORITY	The priority of the alert that fired, 1 for High, 2 for Medium, 3 for Low.	2
HYPERIC_ALERT_SUMMARY	A condensed data string that contains the relevant alert and resource names and values which triggered the alert.	Mac OS X DOWN The-Idea-Men Availability (0.0%)
HYPERIC_FIXED_ALERT_ID	<p>This variable was added in Hyperic 4.5.1.2.</p> <p>Valid for recovery alerts only. Supplies the internal Hyperic ID for the primary alert to which the recovery alert is assigned.</p>	
HYPERIC_FIXED_ALERT_NAME	<p>This variable was added in Hyperic 4.5.1.2.</p> <p>Valid for recovery alerts only. Supplies the name of the primary alert to which the recovery alert is assigned.</p>	High Load
HYPERIC_PLATFORM_NAME	The platform on which this alert fired.	localhost.hyperic.com
HYPERIC_RECOVERY_ALERT	A boolean that indicates if the alert is a recovery alert.	false
HYPERIC_RESOURCE_ID	The internal ID for the resource for which the alert fired.	
HYPERIC_RESOURCE_NAME	The name of the resource for which the alert fired.	localhost.hyperic.com

### 7.6.3. Example Script

The following script is an example of using the alert variables. The example script simply writes the time that the script executed and the variables to a log file; it is not a representative use case. The purpose of script actions is to enable more complex alert actions, and actions that meet the unique needs of your environment.

```
<![CDATA[#!/usr/bin/perl
my $logfile = "/tmp/output.txt";
my $date = localtime();
open LOGFILE, ">$logfile" or die "Cannot open log file for writing";
print LOGFILE "# Running script at $date", "\n";
foreach $key (sort keys(%ENV)) {
if ($key =~ m/^HYPERIC/) {
my $msg = "$key = $ENV{$key}";
print LOGFILE $msg, "\n";
}
}
close LOGFILE;]]>
```

**Example 1. alert.pl**

### 7.6.4. Assign the Script Action to an Alert

To assign a script action to an alert definition:

1. Select the alert definition.
2. Click the **Script** tab in the **Alert Definition** page.
3. Enter the full path to script and click **Set**.

## 7.7. Configure a Custom Control Action

Topics marked with \* relate to features available only in vFabric Hyperic.

- [Section 7.7.1, "Step 1: Install Executable"](#)
- [Section 7.7.2, "Step 2: Configure Control Action as a Platform Service"](#)

This page has instructions for how to configure Hyperic to run a script or executable that implements a resource *control action*. To learn about control actions in Hyperic see [Resource Control in Hyperic](#).

### 7.7.1. Step 1: Install Executable

Install the executable that implements the control action on each managed platform where it will be used. Note that the account under which the Hyperic Agent runs must have:

- Adequate permissions to run the file.
- Adequate permissions to perform the tasks defined in the executable.

You can control the permissions required to run the file with chmod or an equivalent utility in your environment. If the tasks defined in the executable require permissions not granted to the account the Hyperic Agent runs under, one option is to add specific "NOPASSWD" entries in the sudoers file on the platform.

As a best practice, create a "control\_scripts" (or similar) directory in /opt/hyperic, or a directory high enough in the agent installation that it will not be overwritten during an agent upgrade.

### 7.7.2. Step 2: Configure Control Action as a Platform Service

In this step, you must configure the means by which an authorized user can invoke the custom control action. To do so, you configure it as a platform service of type "FileServer File Service" on each platform where the action will be used.

1. Browse to the platform in the Resource Hub.
2. Select "New Platform Service" from the **Tools** menu.
3. Name the service.
  - Note: Including the platform name in the name for the new service will help you distinguish it from other services of the same type.
4. (Optional) Describe the functionality of the control action in "Description".
5. Select "FileServer File" from the "Service Type" pulldown.
6. Click **OK**.
  - The **Inventory** page for the new platform service appears.
7. Click **Edit** in the "Configuration Properties" section of the **Inventory** page.
  - The **Configuration Properties** page for the new platform service appears.

**Restart WLS 10.3 Shell Script**

Please verify that this resource has been enabled for monitoring by following the [directions below](#)

**Configuration Properties**

**Shared**

\* path /sw/hyperic/hq/agent/control\_

**Monitoring**

service.log\_track.enable  Enable Log Tracking  
service.log\_track.include Log Pattern Match

service.log\_track.level Debug  
service.log\_track.exclude Log Pattern Exclude

**Control**

prefix  
Timeout of control operations (in seconds) 30

**Buttons:** Ok, Reset, Cancel

8. On the **Configuration Properties** page:

- a. path — Enter the path to the executable in the "path" field in the "Shared" section, including the name of the file itself. This can be a relative path if the executable is in the Hyperic Agent directory structure. A better practice is to store the script external to the agent directory structure, and specify the full path to the executable, for example, /opt/hyperic/control\_scripts/test.sh.
  - b. timeout — Check the value in the "timeout" field in the "Control" section. This is the time in seconds HQ will wait for a response from the control before declaring it as a failed action. The default is 30 seconds, and under most circumstances should be adequate.
9. If the executable requires higher privileges than those available to the account running the Hyperic Agent, you can use the "prefix" field in the "Control" section to specify the sudo command. In this case, the local sudoers file has an entry for the user to run the script with a NOPASSWD directive.

10. Click **OK**.

## 8. Configure Monitoring and Alerting for a Resource

- [Section 8.1, “Configure Metric Baselines for a Resource”](#)
- [Section 8.2, “Set Up Log Tracking for a Resource”](#)
- [Section 8.3, “Set Up Configuration Tracking for a Resource”](#)
- [Section 8.4, “Define an Alert for a Resource”](#)
- [Section 8.5, “Define a Recovery Alert for a Resource Alert”](#)
- [Section 8.6, “Define Host Dependencies for Hierarchical Alerting”](#)

## 8.1. Configure Metric Baselines for a Resource

**Available only in vFabric Hyperic**

- [Section 8.1.1, “Configure Global Baselining Properties”](#)
- [Section 8.1.2, “Setting a Baseline Explicitly”](#)
- [Set Baselines to Current Low, Average, and Peak](#)
- [Explicitly Define Baselines](#)

### Learn About Baselines

See [Metric Baselines in vFabric Hyperic](#).

### 8.1.1. Configure Global Baselining Properties

You configure the properties that control baseline calculations on the **HQ Server Settings** page, available on the **HQ Administration** tab.

In vFabric Hyperic, these properties control the baselining process. Changing the data set used to calculate baselines can affect baseline accuracy.

Server Setting	Description	Default
<b>Baseline Frequency</b>	The frequency with which Hyperic calculates a baseline for each metric.	3 days
<b>Baseline Dataset</b>	The time range of metric data used in calculating the baseline.	7 days
<b>Baseline Minimum Data Points</b>	The minimum number of data points used in calculating a baseline.	40
<b>Track Out-of-Bounds Metrics</b>	Controls whether or not Hyperic tracks <a href="#">OOB metrics</a> .	off

### 8.1.2. Setting a Baseline Explicitly

As desired, you can set baselines yourself. The values you set will persist until the baselines are automatically recalculated per the settings described in the previous section, or are again reset explicitly to a different value. There are two options for setting baseline values for a metric, described in the following sections.

#### Set Baselines to Current Low, Average, and Peak

To set the acceptable low, acceptable high, and baseline values to the Low, Average, and Peak values for the current display range:

1. Navigate to the **Metric Data** tab on the resource's **Monitor** page.

The screenshot shows the Hyperic User Interface for monitoring a Mac OS X Snow Leopard system. The top navigation bar includes 'Browse > Marie-McGarrys-MacBook-Pro-15.local'. Below this are sections for 'Description', 'Owner', and 'Vendor'. The main area has tabs for 'Monitor', 'Inventory', 'Alert', and 'Views', with 'Monitor' selected. The 'Metric Display Range' is set from 05/24/2010 08:28 AM to 05/26/2010 04:28 PM. The 'Metric Data' tab is active, showing metrics for 'Platform Services Health' and 'Deployed Servers Health'. Under 'Deployed Servers Health', two hosts are listed: 'Marie-McGarrys-MacBook-Pro-15.local HQ Agent 4.3.0-EE' and 'Marie-McGarrys-MacBook-Pro-15.local HQ JBoss 4.x'. The 'INDICATORS' section shows checkboxes for 'Availability', 'Free Memory', 'Load Average 5 Minutes', and 'Swap Used'. The 'METER DATA' section displays data for 'Availability', 'Free Memory', 'Load Average 5 Minutes', and 'Swap Used'. A large black arrow points to the 'Swap Used' row in the data table.

Metric Data						
				Last Updated: Wed Jun 9 13:28:26 2010 Metrics Refresh: 1 min   2 min   5 min   OFF		
Resources		Indicators		Alerts	OOB	LOW
Platform Services Health		Availability		0	0	-
CPU		<input checked="" type="checkbox"/> Availability		99.1%	-	<input checked="" type="checkbox"/>
FileServer File		<input checked="" type="checkbox"/> Free Memory		14.2 MB	89.0 MB	512.2 MB
FileServer Mount		<input checked="" type="checkbox"/> Load Average 5 Minutes		0.1	0.3	1.1
NetworkServer Interface		<input checked="" type="checkbox"/> Swap Used		238.1 MB	763.6 MB	1,005.0 MB
Deployed Servers Health		<input type="checkbox"/> Swap Used		789.1 MB	00:05:00	<input type="checkbox"/>
Marie-McGarrys-MacBook-Pro-15.local HQ Agent 4.3.0-EE						
Marie-McGarrys-MacBook-Pro-15.local HQ JBoss 4.x						

2. Checkmark each metric whose baseline values you want to set.

3. Click **Set Baselines**.

## Explicitly Define Baselines

To explicitly specify the acceptable low, acceptable high, and baseline values for a metric.

1. Chart the metric whose baseline you want to establish - click the chart icon next to it on the **Metric Data** minitab.
  - Refer the the screenshot in [Baselines in the Hyperic User Interface](#) above.
2. In the "Metric Baseline & Expected Range" section, click **Change Value** next to the Baseline, High Range, or Low Range.
3. Either leave the displayed calculated value or enter another value.
4. Enter the unit of measure appropriate for the selected metric. For example, % for the Availability metric or MB for the Free Memory metric
5. If specifying both high and low values, the low must be lower than the high
6. Click **Save Value**.
  - Hyperic automatically checks "Baseline," "High Range," or "Low Range" (depending on what was changed) in the chart legend and refreshes the chart with those values.

## 8.2. Set Up Log Tracking for a Resource

Topics marked with\* relate to features available only in vFabric Hyperic.

- [Section 8.2.1, “Log Tracking Overview”](#)
- [Section 8.2.2, “Configure Log Tracking”](#)
  - [HQ Resource Types that Support Log Tracking](#)
  - [Supported Log Message Types](#)
  - [Log Tracking Configuration Options](#)
    - [Log Tracking for Resources with Log4j Logs](#)
    - [Log Tracking for Network Services](#)
    - [Log Tracking for Windows Platforms](#)
      - [Content of Logged Windows Events](#)
      - [Tailoring the Content and Format of Logged Windows Events](#)
      - [platform.log\\_track.eventfmt Property](#)
- [Section 8.2.3, “View Log Events”](#)
- [Section 8.2.4, “Defining Alert Conditions Based on Log Events”](#)
- [Section 8.2.5, “Log Tracking Support Classes”](#)

## 8.2.1. Log Tracking Overview

IT problems can often be detected or diagnosed from messages generated by operating systems, application servers, network services, or middleware throughout the environment. Hyperic can monitor messages in log files and in memory, and record events in the Hyperic database based on criteria you specify.

### Learn About Log Tracking

See [Section 1.6, “Log and Configuration Event Tracking”](#).

## 8.2.2. Configure Log Tracking

### HQ Resource Types that Support Log Tracking

HQ supports log tracking for operating system platforms, network services, and most server types. If a resource supports log tracking, its **Configuration Properties** page contains log tracking configuration options.

### Supported Log Message Types

HQ can monitor and record events for:

- Log file messages that specify log levels using log4j log levels.
- Events written to Windows Event Logs.
- Network request results for a variety of network services.

### Log Tracking Configuration Options

You enable and configure log tracking for a resource on its **Configuration Properties** page. Navigate to the resource's **Inventory** page, and click **Edit** in the **Configuration Properties** section to display the **Configuration Properties** page.

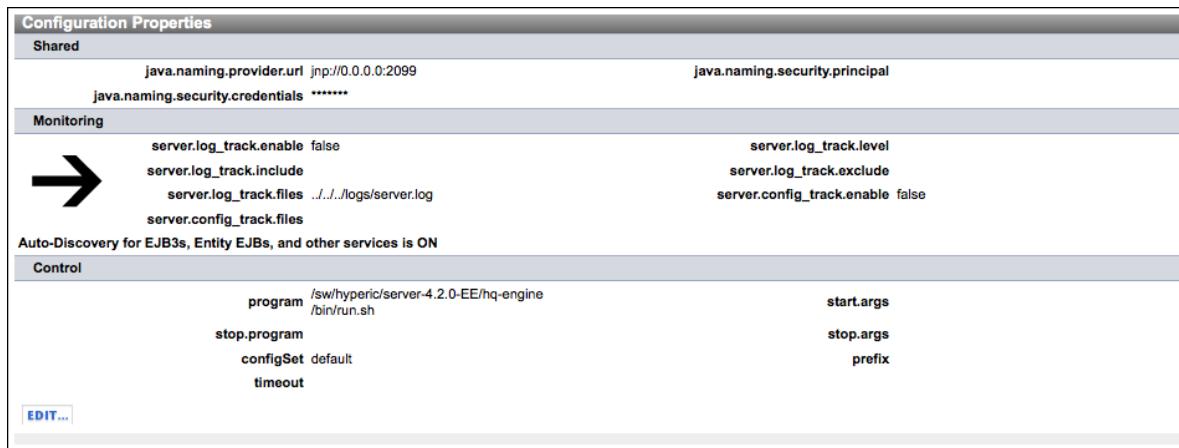
**Note:** Log and configuration tracking must be enabled for a resource if you wish to log events for log messages or configuration changes. Event logging is automatic for alerts and control actions. Log tracking configuration options vary somewhat by resource type.

Log tracking options vary by resource type. See the following sections for more detail:

- [Log Tracking for Resources with Log4j Logs](#)
- [Log Tracking for Network Services](#)
- [Log Tracking for Windows Platforms](#)

### Log Tracking for Resources with Log4j Logs

This section describes the log tracking configuration options for resources that whose log files use log4j levels.



An authorized user can set the values of these configuration options:

- Enable/disable log tracking.
- Specify one or more files to track, as a comma-separated list. The HQ Agent must be able to read these files, so make sure permissions are set appropriately.
- Specify the highest log level to track:
  - Error - Messages with log level "FATAL" or "ERROR"
  - Warn
  - Info
  - Debug
- Specify substrings or expressions to use as include/exclude filter criteria. Enter a substring or a regular expression that a log message must contain or match in **Log Pattern Match**. For more information, see [java.util.regex.Pattern](#).

## Log Tracking for Network Services

This section describes the log tracking configuration options for network services.

## Set Up Log Tracking for a Resource

**dns test**

Please verify that this resource has been enabled for monitoring by following the [directions below](#)

**Configuration Properties**

**Shared**

* <b>hostname</b> Hostname: localhost	* <b>port</b> Port: 53
* <b>sotimeout</b> Socket Timeout (in seconds): 10	* <b>lookupname</b> Lookup Name: www.twitter.com
<b>pattern</b> Answer Match:	* <b>type</b> Record type: A

**Monitoring**

<b>service.log_track.enable</b> Enable Log Tracking: <input checked="" type="checkbox"/>	<b>service.log_track.level</b> Track event log level: Error
<b>service.log_track.include</b> Log Pattern Match:	<b>service.log_track.exclude</b> Log Pattern Exclude:

**General Log and Config Track Properties**

- Enable Log Tracking - Check to enable log tracking.
- Track event log level - Only track events of level greater than or equal to this level. Order is: [Error, Warn, Info, Debug]
- Log Pattern Match - Include messages that match the given regular expression. The given pattern can be a substring to look for in log messages or a regular expression. See: [java.util.regex.Pattern](#).
- Log Pattern Exclude - Exclude messages that match the given regular expression.

An authorized user can set the values of these configuration options:

- Enable/disable log tracking.
- Specify the highest log level to track:
  - Error
  - Warn
  - Info
  - Debug
- Specify substrings or expressions to use as include/exclude filter criteria. Enter a substring or a regular expression that a log message must contain or match in **Log Pattern Match**. For more information, see [java.util.regex.Pattern.h3. Log Tracking for Windows Events](#)

## Log Tracking for Windows Platforms

This section describes the log tracking configuration options for platforms of type "win32".

**Configuration Properties**

**Shared**

This resource does not have any shared Configuration Properties.

**Monitoring**

platform.log_track.enable true platform.log_track.eventlogs System platform.config_track.files	platform.log_track.level Warn platform.config_track.enable true
--	--

**EDIT...**

An authorized user can set the values of these configuration options:

- Enable/disable log tracking.
- Specify one or more Event Log to track:
  - System - contains events logged by Windows system components. For example, if a driver fails to load during startup, an event is recorded in the system log. Windows predetermines the events that are logged by system components.
  - Application - contains events logged by programs. For example, a database program may record a file error in the application log. Events that are written to the application log are determined by the developers of the software program.
  - Security - contains events such as valid and invalid logon attempts, as well as events related to resource use, such as the creating, opening, or deleting of files. For example, when logon auditing is enabled, an event is recorded in the security log each time a user attempts to log on to the computer. A Windows administrator or member of the Windows Administrators group specify which events are recorded in the security log.
  - "\*" causes all event logs to be tracked
- Specify the highest log level to track:
  - Error - Windows Events with level "ERROR"
  - Warn - Windows Events with level "WARNING"
  - Info - Windows Events with level "INFORMATION" or "SUCCESS"
  - Debug - No Windows Event types map to this level

### Content of Logged Windows Events

When Windows log tracking is enabled, an entry of this form is logged for events that match the criteria you specified on the resource's **Configuration Properties** page:

[Timestamp] Log Message (EventLogName):EventLogName:EventAttributes

where:

- **Timestamp** - is when the event occurred
- **Log Message** - is an text string
- **EventLogName** - is the Windows event log type, "System", "Security", or "Application".
- **EventAttributes** - a colon delimited string made of the Windows event **Source** and **Message** attributes.

For example, this log entry:

04/19/2010 06:06 AM Log Message (SYSTEM): SYSTEM: Print: Printer HP LaserJet 6P was paused.

is for an Windows event written to the Windows System event log at 6:06 AM on 04/19/2010. The Windows event **Source** and **Message** attributes, are "Print" and "Printer HP LaserJet 6P was paused.", respectively.

### Tailoring the Content and Format of Logged Windows Events

You can configure the last portion of the log data that the agent writes for a Windows event - referred to above as **EventAttributes**. You can include additional event attributes, for example **User** and **Computer**. To do so,

you add the `platform.log_track.eventfmt` property to the `agent.properties` file for the Hyperic Agent monitoring the Windows platform.

Usage of `platform.log_track.eventfmt` property is described below.

## **platform.log\_track.eventfmt Property**

### **Description**

Specifies the content and format of the Windows event attributes that an HQ Agent includes when logging a Windows event as an event in HQ. `agent.properties` does not contain the `platform.log_track.eventfmt` property, you must explicitly add it if you want to tailor the data logged for Windows events.

### **Default Behavior**

When Windows log tracking is enabled, an entry of this form is logged for events that match the criteria you specified on the resource's **Configuration Properties** page:

[Timestamp] Log Message (EventLogName):EventLogName:EventAttributes

where:

- **Timestamp** - is when the event occurred
- **Log Message** - is an text string
- **EventLogName** - is the Windows event log type, "System", "Security", or "Application".
- **EventAttributes** - a colon delimited string made of the Windows event **Source** and **Message** attributes.

For example, this log entry:

04/19/2010 06:06 AM Log Message (SYSTEM): SYSTEM: Print: Printer HP LaserJet 6P was paused.

is for an Windows event written to the Windows System event log at 6:06 AM on 04/19/2010. The Windows event **Source** and **Message** attributes, are "Print" and "Printer HP LaserJet 6P was paused.", respectively.

### **Configuration**

You can use the parameters below to configure the Windows event attributes that the agent writes for a Windows event. Each parameter maps to Windows event attribute of the same name.

- `%user%` - The name of the user on whose behalf the event occurred.
- `%computer%` - The name of the computer on which the event occurred.
- `%source%` - The software that logged the Windows event.
- `%event%` - A number identifying the particular event type.
- `%message%` - The event message.
- `%category%` - An application-specific value used for grouping events.

For example, with this property setting:

```
platform.log_track.eventfmt=%user%@%computer% %source%: %event%: %message%
```

the HQ Agent will write the following data when logging Windows event:

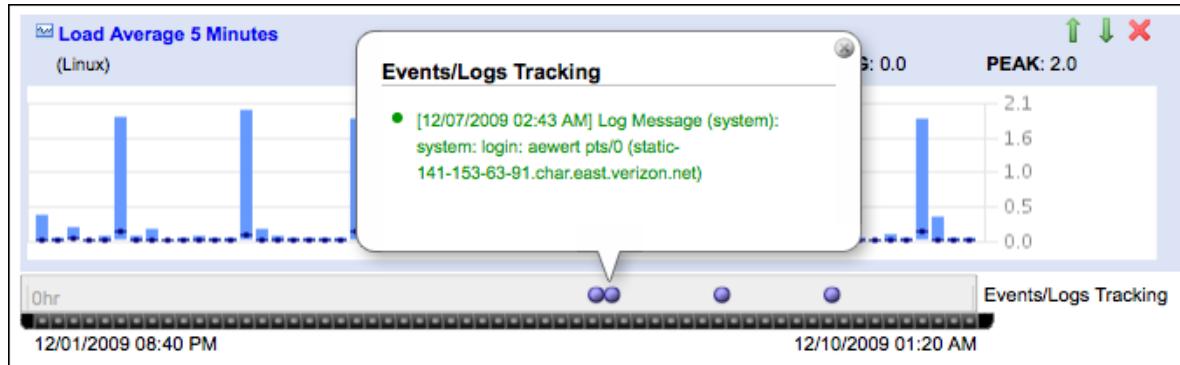
04/19/2010 06:06 AM Log Message (SYSTEM): SYSTEM: HP\_Admistrator@Office Print:7:Printer HP LaserJet 6P was paused.

This entry is for as for an Windows event written to the Windows System event log at 6:06 AM on 04/19/2010. The software associated with the event was running as "HP\_Administrator" on the host "Office". The Windows event's **Source**,**Event**, and **Message** attributes, are "Print", "7", and "Printer HP LaserJet 6P was paused.", respectively.

After you configure the content of the log entry written for a Windows event, when you configure an alert definition for a Windows resource, you can create an alert condition based on the message content, including the custom fields you have configured. For more information, see the "Define Alert Condition Set" section in *Configure Monitoring Options*.

### 8.2.3. View Log Events

Log events for a particular resource are indicated in the timeline at the bottom of the resource's **Indicators** page. A circular indicator over the timeline indicates a timeslice in which one or more events of any type - log events, configuration change events, or alerts - were logged. Click the event indicator to view the data collected at that time.



In vFabric Hyperic, you can use the **Event Center** to view events over time for all, or selected groups of resources, and filter by log event severity. For more information see [Event Center](#).

### 8.2.4. Defining Alert Conditions Based on Log Events

For information about defining alert conditions based on log events see [Step 3: Define Alert Condition Set](#) on the [Defining Alerts](#) page.

### 8.2.5. Log Tracking Support Classes

For information about the Hyperic support class for log events for log file messages that specify a log4j level, see [Log4JLogTrackPlugin](#).

## Set Up Log Tracking for a Resource

For information about the Hyperic support class for tracking Windows Event logs, see [Win32EventTrackPlugin](#).

Plugin classes monitor network services log events using the `plugin.getManager().reportEvent` method.

## 8.3. Set Up Configuration Tracking for a Resource

Topics marked with \* relate to features available only in vFabric Hyperic.

- [Section 8.3.1, “Hyperic Configuration Tracking Functionality”](#)
- [Section 8.3.2, “Set Up Configuration Tracking for a Resource”](#)
- [Section 8.3.3, “View Configuration Events for a Resource”](#)
- [Section 8.3.4, “Configure Alerts Based on Configuration Events”](#)

### 8.3.1. Hyperic Configuration Tracking Functionality

You can configure Hyperic to log an event when a specified file - usually a configuration artifact - associated with a managed resource is modified. The agent uses a cryptographic hash function to continuously compare a original version of the file with the current version to see if it has changed. You can view configuration event data on the **Monitor** page for a resource or the **Event Center**. You can base alert conditions on configuration events.

- Hyperic can track multiple files per resource.
- The Hyperic Agent must be able to read a file to track it - ensure that file permissions are such that the Hyperic Agent can read files you wish to track.
- Hyperic is supported for most platform and server types; typically not for services.

### 8.3.2. Set Up Configuration Tracking for a Resource

To enable and configure configuration tracking for a single resource:

1. Navigate to the resource's **Inventory** page
2. In the "Configuration Properties" section, click **Edit**.
3. On the **Edit Configuration Properties** page:
  - a. Click the **Enable Config Tracking** box to turn configuration tracking on and off for the resource.
  - b. Enter the path, relative to the resource's installation directory, to each file you wish to track. Separate files with a comma.
  - c. Click **OK**.

### 8.3.3. View Configuration Events for a Resource

You enable and configure log tracking for a resource on its **Configuration Properties** page. Navigate to the resource's **Inventory** page, and click **Edit** in the **Configuration Properties** section to display the **Configuration Properties** page.

### 8.3.4. Configure Alerts Based on Configuration Events

1. Enable and configure configuration tracking as described above.
2. For the instructions in [Section 8.4, “Define an Alert for a Resource”](#) and choose the "Config Changed" condition type.

## 8.4. Define an Alert for a Resource

Topics marked with \* relate to features available only in vFabric Hyperic.

- [Section 8.4.1, “Step 1: Select Target Resource”](#)
- [Section 8.4.2, “Step 2: Define Alert Properties”](#)
- [Section 8.4.3, “Step 3: Define Alert Condition Set”](#)
  - [Condition Set](#)
  - [Define Additional Conditions](#)
  - [Define Recovery Alert Behavior](#)
  - [Enable Actions](#)
  - [Enable Action Filters](#)
    - [Disable an Alert Definition upon Firing](#)
    - [Disregard Control Actions for Related Alerts.](#)
- [Section 8.4.4, “Step 4: Define Alert Actions”](#)
  - [Escalation](#)
  - [Control Action](#)
  - [Notify Roles](#)
  - [Notify HQ Users](#)
  - [Notify Other Recipients](#)
  - [Script](#)
  - [OpenNMS](#)
  - [SNMP Notification](#)

Follow these instructions to define an alert for an individual resource.

### 8.4.1. Step 1: Select Target Resource

1. Navigate to the resource to which the new alert definition will apply.
2. Click the **Alert** tab.
3. Click **Configure**.
4. Click **New** to display the **New Alert** page.

### 8.4.2. Step 2: Define Alert Properties

Supply property values in the "Alert Properties" section of the **New Alert Definition** page.

- **Name** - Name assigned by the user creating an alert definition. A fired alert is identified, in the HQ user interface and alert notifications, by the alert definition name and a timestamp. An alert definition name should clearly communicate the nature of the problem. For example, "Down" for an alert on availability, or "Low Memory" for an alert on free memory.
- **Description** - Description entered by the user creating the alert definition.
- **Priority** - The severity of the problem, as defined by the person creating the alert definition: "Low", "Medium", or "High". A consistent policy for defining an alert definition priority makes it easier to triage problems appropriately. An alert's priority is shown in HQ pages that present alert status and in alert notifications. You can sort alerts by priority in HQ Enterprise's **Alert Center** or **Operations Center**.
- **Active** - The current enabled/disabled status of the alert definition. Alerts only fire for enabled alert definitions. When an alert definition is disabled, HQ does not evaluate its condition or fire alerts for it.

### 8.4.3. Step 3: Define Alert Condition Set

Define the rules for triggering and firing the alert in the "Condition Set" section of the **New Alert Definition** page.

#### Condition Set

An alert condition specifies a resource metric value or event that will initiate the alert firing process.

The condition types you can choose when you define a alert vary by resource type and HQ version. If a condition type is not supported by your version of HQ or is not valid for the target resource, it will not appear as an option.

To define a condition, choose one of the following condition types, and supply required parameter values.

- **Metric condition** - To base the alert on the value of a metric that HQ collects for the resource:
  1. **Metric** - Select a metric from the selector list. Only currently enabled metrics are listed. (If the metric you're looking for is not listed, see the note below.)
  2. Define the rule for evaluating the metric value. You can:
    - Compare metric value to an absolute value. Select an operator: **>(greater than)**, **<(less than)**, **= (equal to)**, or **!= (not equal to)**, and enter a metric value. If the metric value is a percentage, specify it as a

float value. For example, enter `.99` for 99%, `1.0` for 100%. Use a period (.) as a decimal separator, rather than a comma (,).

- Compare metric value to its minimum, baseline, or maximum value\*, in HQ Enterprise only. Select an operator: `>(greater than)`, `<(less than)`, `= (equal to)`, or `!= (not equal to)`, and choose "Min Value", "Baseline Value" or "Max Value". Baselining must be enabled. For more information, see [Baselines](#).
- Fire upon change in metric value. Click **value changes**.

#### To Enable Collection of a Metric

If you want to base a metric condition on a metric that is not currently collected, you have to enable collection of that metric. To do so, update the metric collection settings for the resource type (choose **Monitoring Defaults** from the **Administration** tab), or for the specific resource (click **Metrics** on the **Monitor** tab for the resource).

- **Inventory Property Condition** - To define a condition that is triggered when the value of an inventory property for resource changes, select an inventory property. The pulldown contains only those inventory properties that are valid for the type of the resource to which the alert applies.
- **Control Action Condition** - When you define an alert for a resource that supports control actions, you can define a condition that is triggered when a particular control action is performed. If desired, you can base the condition on a control action with a particular result status: "in progress", "completed", or "failed". Pulldowns allow you to select a control action that the resource supports, and a result status if desired.
- **Events/Log Level Condition** - To define a condition that is triggered by a log event, select a message severity level ("error", "warn", "info", "debug", "all") and optionally a match string. The condition is satisfied each time a message of the selected severity that contains the match string (if one was specified) is written to a log file that HQ is tracking. Log tracking must be enabled for the resource. To determine the log files that HQ monitors for the resource, see the **Configuration Properties** section of the resource's **Inventory** tab. The log files that HQ monitors for a resource are defined using the **server.log\_track.files** property. For configuration instructions, see see [Log Tracking](#).
- **Config Changed... Condition** - This type of condition is triggered by a change to a configuration file that HQ is configured to monitor for the resource. To limit the condition to a single file, enter its filename in the "match filename" field. If you don't specify a filename, a change to any file monitored will trigger the alert. To determine the log files that HQ monitors for the resource, see the **Configuration Properties** section of the resource's **Inventory** tab. The files that HQ monitors for a resource are defined using the **server.config\_track.files** property. The maximum length for filename entered is 25 characters. For configuration instructions, see [Configuration Tracking](#).

## Define Additional Conditions

**Available only in vFabric Hyperic**

In HQ Enterprise, you can define up to three conditions for an alert. To add another condition, click **Add Another Condition** and specify whether both the new condition and the preceding one must be satisfied for the alert to be triggered ("AND") or only one must be satisfied ("OR").

## Define Recovery Alert Behavior

**Available only in vFabric Hyperic**

To designate the alert you're defining as a recovery alert, select the primary alert definition from the pulldown.

A recovery alert condition should detect when the condition that fired the primary alert is no longer true. When a recovery alert fires, it marks the primary alert "Fixed", and the primary alert definition is re-enabled. The primary alert definition should be configured to **Generate one alert and then disable alert definition until fixed**, as described below. For more information, see [Recovery Alerts](#).

## Enable Actions

You can make the condition absolute - (one strike you're out) or fire after the condition occurs repeatedly. Choose either:

- **Each time conditions are met.** The alert fires upon a single occurrence of the condition, or
- **Once every\_ times conditions are met within a time period of \_minutes.** This option configures an alert to fire when the condition(s) occur multiple times over a period of time. Enter the number of occurrences and period of time.

## Enable Action Filters

An action filter can be used to control alert firing and alert actions.

### Disable an Alert Definition upon Firing

Click **Generate one alert and then disable alert definition until fixed** to disable the alert definition after firing and reenable it when the alert that triggered it is marked "Fixed".

This option eliminates redundant firing for the same problem. If you do not choose this option, the alert will fire repeatedly as long as the triggering condition is still true.

In HQ Enterprise this configuration option - used in conjunction with recovery alerts - automates the process of disabling and re-enabling an alert definition. Result: (1) no redundant alerts for the same problem, and (2) you don't have manually "fix" an alert triggered by a transient problem. For more information, see [Recovery Alerts](#).

### Disregard Control Actions for Related Alerts.

The **Disregard control actions that are defined for related alerts** option appears on **New Alert Definition** pages for resources that support control actions. This option only applies when:

1. The current alert definition will include an alert action
2. The resource associated with the alert is a member of an application
3. There are other members of the same application with alerts that fire control actions (ideally the same control action)

Under these circumstances, this configuration option ensures that if multiple alerts are fired within a short period for resources that are members of the same application, only one control action will be executed. For example, this would prevent a server from being restarted several times in a short period of time for the same alert conditions. For instance, you might have an alert with an action to restart a Tomcat server if the JVM Free Memory got too low and another alert with an action to restart the same server if the JVM Active Thread count got too high. If both alerts fired at the same time and they were filtering control actions, only 1 restart control action would be executed and not two.

## 8.4.4. Step 4: Define Alert Actions

You assign actions to an alert definition on the **Alert Definition** page, which appears when you save a new alert definition or edit an existing alert definition.

The **Alert Definition** page is similar to the **New Alert** page, with the addition of **Edit** controls in the "Alert Properties" and "Condition Set" sections, and tabs at the bottom of the page for defining alert actions.

You can specify multiple actions to be performed automatically when an alert fires. The types of actions available in the **Alert Definition** page vary based on: (1) the type of resource the alert applies to, (2) your version of Hyperic, and (3) whether you've configured Hyperic for the types of actions that must be enabled before you can use them, such as escalations, OpenNMS trap actions, and in vFabric Hyperic, SNMP notifications.

To define an alert action, select one of the tabs and supply the required information:

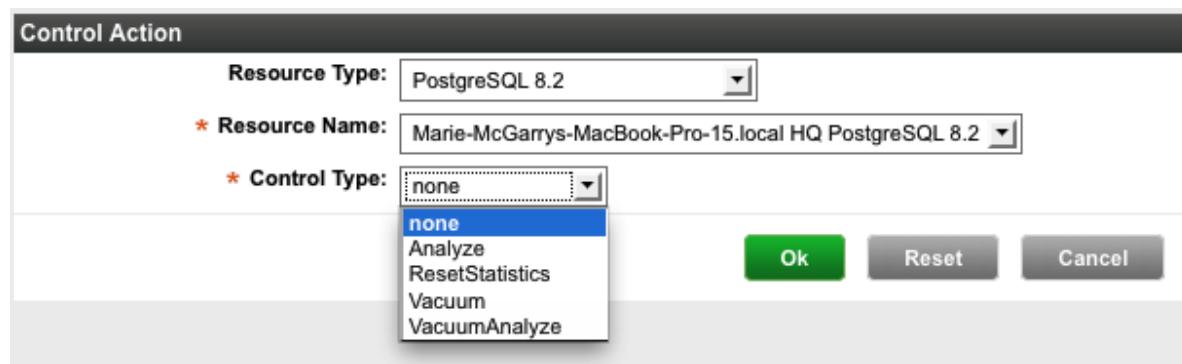
### Escalation

Select an escalation from the "Escalation Scheme" pulldown; the tab refreshes and shows the escalation steps. You must define an escalation before you can assign it to an alert definition. Using an escalation that is configured to repeat until the alert is fixed is a good way to prevent redundant alerts firing for the same problem. To create an escalation, click **Escalation Schemes Configuration** on the **Administration** tab. For more information about escalations, see [Understanding Escalations](#).

### Control Action

**Available only in vFabric Hyperic**

In vFabric Hyperic, you can define a resource control action for Hyperic to perform when the alert fires. The control action can target the current resource (the one to which the alert definition is assigned) or a different resource on the same platform, as long as the resource type has Hyperic-supported control actions. To configure a control action for the alert, select the **Control Action** tab and click **Edit**. \*The **\*Add Control Action** page appears; click the thumbnail below for a screenshot. Follow the instructions on the associated [help page](#). You can only assign a single control action to an alert definition. **Note:** You cannot assign a control action to a resource type alert.



### Notify Roles

**Available only in vFabric Hyperic**

In vFabric Hyperic you can specify one or more roles as notification recipients. Hyperic users with a role you specify will be notified when an alert is fired. Click **Add to List** on the **Notify Roles** tab. On the roles selection page, choose the role(s) to be notified when the alert fires. The [help page](#) has instructions.

For information about creating roles specifically for use in notification actions, see in [Role-Based Alert Notifications](#).

## Notify HQ Users

Click **Add to List** on this tab to specify one or more Hyperic users as notification recipients. On the user selection page, choose the users to be notified when the alert fires. The [help page](#) has instructions.

## Notify Other Recipients

Click **Add to List** on this tab to specify non-Hyperic user email recipients for alert notifications. The [help page](#) has instructions.

## Script

**Available only in vFabric Hyperic**

In vFabric Hyperic, to assign a script action to the alert definition, click the **Script** tab, enter the full path to the script, and click **Set**. Hyperic will run the script when the alert fires. Scripts can reference alert-related Hyperic environment variables to perform custom notification logic. For information, see [Define a Script Action for an Alert](#).

## OpenNMS

If Hyperic Server is configured for OpenNMS integration, you can use this tab to configure Hyperic to send an SNMP trap to OpenNMS when the alert fires. The notification will be generated by `opennms_notify.gsp` alert notification template.

To configure an OpenNMS trap action, enter:

- **Server** - Listen address for the OpenNMS server
- **Port** for the OpenNMS server.

For more information, see [Enabling OpenNMS Integration](#).

## SNMP Notification

**Available only in vFabric Hyperic**

If the Hyperic Server is configured to send SNMP notifications to your NMS, you can use this tab to configure a trap notification action. See [SNMP Server Configuration Properties](#) for more information.

The notification sent when the alert fires will contain three variable bindings:

- `sysUptimeOID.0` - No configuration is required for this binding.
- `snmpTrapOID.0` - This binding is configured on the **HQ Server** settings page.
- A variable binding for the alert data specified in the `snmp_trap.gsp` alert notification template - the alert definition name and the "short reason" for firing. Note that Alert templates may be customized, as described in [Tailoring Alert Notification Templates](#).

### Including more variable bindings in SNMP messages

For richer capability, you can configure a SNMP notification as a step in an escalation. An SNMP notification in an escalation can be configured with additional variable bindings. For more information, see [Understanding Escalations](#)

To configure an SNMP notification action enter:

- **IP Address** - the address and port of the target NMS.
- **OID** - The OID of the notification to send, which will contain the alert details specified in the `snmp_trap.gsp`, template.
- **Notification Mechanism** - The type of SNMP notification to send:
  - v1 Trap
  - v2c Trap
  - Inform

## 8.5. Define a Recovery Alert for a Resource Alert

**Available only in vFabric Hyperic**

- [Section 8.5.1, “Understanding Recovery Alerts”](#)
- [Section 8.5.2, “Define Primary Alert Definition to Disable Itself”](#)
- [Section 8.5.3, “Create a Recovery Alert Definition for a Resource Alert”](#)

### 8.5.1. Understanding Recovery Alerts

A recovery alert is special type of alert definition that you pair with a properly configured primary alert definition to streamline alert management. The purpose of a recovery alert is to fire when the condition that fired another alert - the "primary" alert - is no longer true, and then mark the primary alert "fixed" and re-enable the primary alert definition. This strategy prevents redundant alerts and automates the task of marking an alert "fixed".

You can define a recovery alert for a resource alert, and in vFabric Hyperic, a resource type alert. You cannot and do not need to define a recovery alert for a resource group alert in vFabric Hyperic - recovery alert behavior is automatic for resource group alerts.

To effectively leverage the benefits of recovery alert functionality you need to:

- Configure the primary alert definition to fire once when triggered and then disable itself until that fired alert is fixed. This prevents multiple alerts for a single incident.
- Configure a recovery alert definition and assign it to the primary alert definition. Make the recovery alert condition the opposite of the primary alert condition. The recovery alert fires when the primary alert condition is no longer true. Upon firing, the recovery alert marks the alert fired by the primary alert "fixed", and re-enables the primary alert definition, so that if the problem occurs again, the primary alert is again triggered.

Properly configured primary and recovery alert definitions keep users notified of problems without deluging them with alert notifications.

## 8.5.2. Define Primary Alert Definition to Disable Itself

You can only define a recovery alert for a primary alert definition that already exists. Before setting up a recovery alert, create the primary alert definition, and choose the "Disable alert until re-enabled manually or by recovery alert" option.

## 8.5.3. Create a Recovery Alert Definition for a Resource Alert

To create a recovery alert definition:

1. Browse to the resource to which the primary alert is assigned.
2. Click **New** and follow the directions in [Create a Resource Alert Definition](#), making sure, when defining the "Condition Set" to
  - a. specify the condition that is the opposite of the primary alert definition's condition. For example if the primary alert condition is "1 Minute Load Avg > 2.0.", define the recovery alert condition as "1 Minute Load Avg < 2.0."
  - b. Use the **Recovery Alert** pulldown to select the primary alert.

## 8.6. Define Host Dependencies for Hierarchical Alerting

Available only in vFabric Hyperic

- [Define Network Host Relationships](#)
- [Manage a Top Level Platform's Dependents](#)

### 8.6.1. Define Network Host Relationships

The **Network and Host Dependency Manager**, available from the "Plugins" section of the **Administration** tab, allows you to define relationships between a top level platform (a network device or virtual host) and lower level (operating system) platforms that depend on it.

**Note:** For information about platforms in Hyperic, see [Platforms \[10\]](#).

Defining dependency relationships extends the benefits of Hyperic hierarchical alerting to top level platforms.

For more information see [Hierarchical Alerting Prevents a Cascade of Alerts in Resource Hierarchies \[216\]](#).

#### vSphere Resource Relationships

If you manage vSphere resources using the vSphere plugin, do not use the **Network Host Dependency Manager** to configure dependencies for vSphere resources. vSphere resource types will be removed from the **Network Host Dependency Manager** pulldown menus in a future release. For information about the vSphere virtual resource hierarchy, see [Monitoring vSphere Components](#).

#### Step 1: Select a Top Level Platform to Update

To define or change the dependent platforms for a top level platform, you first select the top level platform. For ease of navigation, the **Network and Host Dependency Manager** provides two ways to find a top level

platform. Depending on how many top level platforms you have in inventory, and what you know about your target, one of the following options may be preferable.

### Option A: Browse a Filtered List of Top Level Platforms

You can peruse a complete or filtered list of top level platforms in inventory to find the one you want to update.

1. Select the **By Top Level Platform** tab to list all top level platforms in inventory.
2. Filter the list, as desired:
  - Enter the leading characters of the top level platform name in the "Name" field.
  - Select a type of device or host from the **Type** pull-down.
  - Use the **Show** pull-down to limit the display to: all top level platforms, those with existing dependent platforms, or those with none.
3. Select a top level platform from the filtered list.
  - Any dependent platforms already assigned to the top level platform are listed.
4. To add or remove dependent platforms, follow the instructions in **Step 2**.

### Option B: Navigate from a Dependent Platform

If the top level platform you want to update already has a dependent platform, you can start from there.

1. Select the **By Dependent Platform** tab to list all operating system platforms that have a top level platform defined.
2. Filter the list, as desired:
  - Enter the leading characters of the platform name in the "Name" field.
  - Select an operating system platform type from the "Type" pull-down.
3. The dependent platforms that match the filter settings are listed in this format:
  - *dependent platform name > top level platform name*
4. Click *top level platform name* to select it.
  - The dependent platforms already assigned to the top level platform are listed.
5. To add or remove dependent platforms, follow the instructions in **Step 2**.

### Step 2: Manage a Top Level Platform's Dependents

1. Navigate to the desired top level platform and select it, using one of the methods described in **Step 1**.
2. To remove dependencies:
  - Use the **Select** and **Remove** controls on the page.
1. To add dependencies:

- Click **Add. #\*** The **Available Platforms** popup lists operating system platforms in inventory that are not currently assigned to a top level platform.
- Filter the list, as desired:
  - Enter the leading characters of the operating system platform name in the "Name" field.
  - Select a operating system platform type from the "Type" pull-down.
- Select one or more operating system platforms from the list.
- Click **Add Dependency** to save the association immediately.
- Click **Done** to close the window when you are done updating dependencies for the top level platform.

## 9. Configure Monitoring and Alerting for a Resource Type

- [Section 9.1, “Tailor Metric Collection for a Resource Type”](#)
- [Section 9.2, “Define an Alert for a Resource Type”](#)
- [Section 9.3, “Define a Recovery Alert for a Resource Type Alert”](#)

## 9.1. Tailor Metric Collection for a Resource Type

Topics marked with\*relate to features available only in vFabric Hyperic.

- [Section 9.1.1, “Navigate to the Monitoring Defaults Page for a Resource Type”](#)
- [Section 9.1.2, “Enable Collection of a Metric”](#)
- [Section 9.1.3, “Disable Collection of a Metric”](#)
- [Section 9.1.4, “Change a Metric Collection Interval”](#)
- [Section 9.1.5, “Set Indicator Metrics”](#)
- [Section 9.1.6, “APIs for Metric Collection Settings”](#)

Metric collection settings for a resource type are configured on the **Monitoring Defaults** page for the resource type.

### Template Changes Vs. Custom Configurations

Note that an authorized user can tailor metric collection settings on a per resource basis (on the resource's **Metric Data** minitab in the Resource Hub.) When you save changes to the metric collection settings for a resource type on the **Monitoring Defaults** page, the settings you configure will apply to *all* resources of that type in inventory. So, any custom metric collection configuration for resources of that type will be overwritten.

Note however, that if a user has chosen a different set of indicator metrics for a resource instance (on the resource's **Indicators** minitab in the Resource Hub) changing the indicator metrics for a resource type on the **Monitoring Defaults** page will *not* override the user's selections.

### 9.1.1. Navigate to the Monitoring Defaults Page for a Resource Type

1. Click the **Administration** tab.
2. Click **Monitoring Defaults** in the "HQ Server Settings" section of the **Administration** tab.
3. Scroll to the desired resource type on the **Monitoring Defaults** page, and click **Edit Metric Template** in that row.

The screenshot below is the **Monitoring Defaults** page for the vSphere Host resource type.

**Monitoring Defaults > VMware vSphere Host platforms**

**Monitor**

**Note:** Modifying the Collection Interval will overwrite the current collection intervals of existing metrics. Modifying the Indicator field affects the default view of VMware vSphere Host platforms.

	Collection Interval	Default On	Indicator
<input type="checkbox"/> Availability ▲	00:01:00	Yes	Yes
<input type="checkbox"/> Availability	00:01:00	No	No
<input type="checkbox"/> Uptime			
<input type="checkbox"/> Throughput ▲			
<i>No metrics of this type have been added to this resource.</i>			
<input type="checkbox"/> Performance ▲			
<i>No metrics of this type have been added to this resource.</i>			
<input type="checkbox"/> Utilization ▲			
<input type="checkbox"/> CPU Active (1 min. Average)	00:05:00	No	No
<input type="checkbox"/> CPU Active (15 min. Average)	00:05:00	No	No
<input type="checkbox"/> CPU Active (5 min. Average)	00:05:00	No	No
<input type="checkbox"/> CPU Reserved Capacity	00:05:00	No	No
<input type="checkbox"/> CPU Running (1 min. Average)	00:05:00	No	No
<input type="checkbox"/> CPU Running (15 min. Average)	00:05:00	No	No
<input type="checkbox"/> CPU Running (5 min. Average)	00:05:00	No	No
<input type="checkbox"/> CPU Throttled (1 min. Average)	00:05:00	No	No
<input type="checkbox"/> CPU Throttled (15 min. Average)	00:05:00	No	No
<input type="checkbox"/> CPU Throttled (5 min. Average)	00:05:00	No	No
<input type="checkbox"/> CPU Usage (Average)	00:05:00	Yes	Yes
<input type="checkbox"/> Disk Usage (Average)	00:05:00	Yes	Yes
<input type="checkbox"/> Highest Disk Latency	00:05:00	Yes	Yes
<input type="checkbox"/> Memory Active	00:05:00	Yes	No
<input type="checkbox"/> Memory Balloon	00:05:00	Yes	No
<input type="checkbox"/> Memory Consumed	00:05:00	No	No
<input type="checkbox"/> Memory Granted	00:05:00	No	No
<input type="checkbox"/> Memory Heap	00:05:00	No	No
<input type="checkbox"/> Memory Heap Free	00:05:00	No	No
<input type="checkbox"/> Memory Overhead	00:05:00	No	No
<input type="checkbox"/> Memory Reserved Capacity	00:05:00	No	No
<input type="checkbox"/> Memory Shared	00:05:00	Yes	No
<input type="checkbox"/> Memory Shared Common	00:05:00	No	No
<input type="checkbox"/> Memory State	00:05:00	No	No
<input type="checkbox"/> Memory Swap In	00:05:00	No	No
<input type="checkbox"/> Memory Swap Out	00:05:00	No	No
<input type="checkbox"/> Memory Swap Used	00:05:00	No	No
<input type="checkbox"/> Memory Unreserved	00:05:00	No	No
<input type="checkbox"/> Memory Usage (Average)	00:05:00	Yes	Yes
<input type="checkbox"/> Memory Used by vmkernel	00:05:00	No	No
<input type="checkbox"/> Memory Zero	00:05:00	No	No
<input type="checkbox"/> Network Usage (Average)	00:05:00	Yes	No

**DISABLE COLLECTION** Collection Interval for Selected:    Set Selected Metrics as Indicators:

### 9.1.2. Enable Collection of a Metric

To enable the collection of a metric, follow the directions in [Change a Metric Collection Interval](#). Collection of the metric is now enabled by default with the specified collection interval on every resource of this type.

### 9.1.3. Disable Collection of a Metric

To disable the collection of a metric, check the metric name at the left and click **Disable Collection** at the bottom of the page.

### 9.1.4. Change a Metric Collection Interval

1. Check the metric name at the left.

2. In **Collection Interval for Selected** at the bottom of the page, enter a time value and select a unit of time measure for the collection interval.
3. Click the **Collection Interval for Selected** control at the bottom of the **Monitoring Defaults** page.

### 9.1.5. Set Indicator Metrics

To select the indicator metrics for a resource type (indicator metrics are the metrics that are charted on a resource's **Indicators** minitab in the Resource Hub) check the metric name at the left for each metric you wish to be an indicator, and click the **Set Selected Metrics as Indicators** control at the bottom of the **Monitoring Defaults** page.

The metrics you configure will be the default indicators for the resource type.

Changes to indicator metrics apply to existing resources but only for users that have not explicitly changed the default indicator page on the resources (of the specified type). If a user has changed the default indicator page for a resource, that will not be overwritten with changes made here.

### 9.1.6. APIs for Metric Collection Settings

As an alternative to the updating metric collection settings from the Hyperic user interface, you can use Hyperic APIs to perform updates from the command line or from scripts to perform bulk updates:

- [HQApi metric command](#) - for listing and updating metric collection settings for an individual resource.
- [HQApi metrictemplate command](#) - for listing and updating metric collection settings for all instances of a resource type.

For general information, see [vFabric Hyperic Web Services API](#).

## 9.2. Define an Alert for a Resource Type

Available only in vFabric Hyperic

- [Section 9.2.1, “Define a Resource Type Alert”](#)
  - [Step 1: Select Target Resource Type](#)
  - [Step 2: Define Alert Properties](#)
  - [Step 3: Define Alert Condition Set](#)
    - [Condition Set](#)
    - [Define Additional Conditions](#)
    - [Define Recovery Alert Behavior](#)
    - [Enable Actions](#)
    - [Enable Action Filters](#)
      - [Disable an Alert Definition upon Firing](#)
      - [Disregard Control Actions for Related Alerts.](#)
  - [Step 4: Define Alert Actions](#)
    - [Escalation](#)
    - [Control Action](#)
    - [Notify Roles](#)
    - [Notify HQ Users](#)
    - [Notify Other Recipients](#)
    - [Script](#)
    - [OpenNMS](#)
    - [SNMP Notification](#)

## 9.2.1. Define a Resource Type Alert

This page explains how to define an resource type alert. A resource type alert is applied to all resources of the specific type that currently exist and new resources of the type that get created in the future. Only HQ Administrators can create resource type alerts.

### Step 1: Select Target Resource Type

1. Click **Administration** in the masthead.
2. Click **Monitoring Defaults** in "HQ Server Settings" section of the page.
3. On the **HQ Monitoring Defaults Configuration** page, click **Edit Alerts** for the resource type for which you want to define an alert. The **Monitoring Defaults** page will display any alert definitions already assigned to the alert.
4. Click **New** to create a new alert definition.

### Step 2: Define Alert Properties

On the **New Alert** page, define each property in the "Alert Properties" section.

- **Name** - Name assigned by the user creating an alert definition. A fired alert is identified, in the HQ user interface and alert notifications, by the alert definition name and a timestamp. An alert definition name should clearly communicate the nature of the problem. For example, "Down" for an alert on availability, or "Low Memory" for an alert on free memory.
- **Description** - Description entered by the user creating the alert definition.
- **Priority** - The severity of the problem, as defined by the person creating the alert definition: "Low", "Medium", or "High". A consistent policy for defining an alert definition priority makes it easier to triage problems appropriately. An alert's priority is shown in HQ pages that present alert status and in alert notifications. You can sort alerts by priority in HQ Enterprise's **Alert Center** or **Operations Center**.
- **Active** - The current enabled/disabled status of the alert definition. Alerts only fire for enabled alert definitions. When an alert definition is disabled, HQ does not evaluate its condition or fire alerts for it.

### Step 3: Define Alert Condition Set

On the **New Alert** page, define the Condition Set, and click **OK** when you are done.

#### Condition Set

An alert condition specifies a resource metric value or event that will initiate the alert firing process.

The condition types you can choose when you define a alert vary by resource type and HQ version. If a condition type is not supported by your version of HQ or is not valid for the target resource, it will not appear as an option.

To define a condition, choose one of the following condition types, and supply required parameter values.

- **Metric condition** - To base the alert on the value of a metric that HQ collects for the resource:
  1. **Metric** - Select a metric from the selector list. Only currently enabled metrics are listed. (If the metric you're looking for is not listed, see the note below.)
  2. Define the rule for evaluating the metric value. You can:

- Compare metric value to an absolute value. Select an operator: **>(greater than)**, **<(less than)**, **= (equal to)**, or **!= (not equal to)**, and enter a metric value. If the metric value is a percentage, specify it as a float value. For example, enter .99 for 99%, 1.0 for 100%. Use a period (.) as a decimal separator, rather than a comma (,).
- Compare metric value to its minimum, baseline, or maximum value\*, in HQ Enterprise only. Select an operator: **>(greater than)**, **<(less than)**, **= (equal to)**, or **!= (not equal to)**, and choose "Min Value", "Baseline Value" or "Max Value". Baselining must be enabled. For more information, see [Baselines](#).
- Fire upon change in metric value. Click **value changes**.

#### To Enable Collection of a Metric

If you want to base a metric condition on a metric that is not currently collected, you have to enable collection of that metric. To do so, update the metric collection settings for the resource type (choose **Monitoring Defaults** from the **Administration** tab), or for the specific resource (click **Metrics** on the **Monitor** tab for the resource).

- **Inventory Property Condition** - To define a condition that is triggered when the value of an inventory property for resource changes, select an inventory property. The pulldown contains only those inventory properties that are valid for the type of the resource to which the alert applies.
- **Control Action Condition** - When you define an alert for a resource that supports control actions, you can define a condition that is triggered when a particular control action is performed. If desired, you can base the condition on a control action with a particular result status: "in progress", "completed", or "failed". Pulldowns allow you to select a control action that the resource supports, and a result status if desired.
- **Events/Log Level Condition** - To define a condition that is triggered by a log event, select a message severity level ("error", "warn", "info", "debug", "all") and optionally a match string. The condition is satisfied each time a message of the selected severity that contains the match string (if one was specified) is written to a log file that HQ is tracking. Log tracking must be enabled for the resource. To determine the log files that HQ monitors for the resource, see the **Configuration Properties** section of the resource's **Inventory** tab. The log files that HQ monitors for a resource are defined using the **server.log\_track.files** property. For configuration instructions, see see [Log Tracking](#).
- **Config Changed... Condition** - This type of condition is triggered by a change to a configuration file that HQ is configured to monitor for the resource. To limit the condition to a single file, enter its filename in the "match filename" field. If you don't specify a filename, a change to any file monitored will trigger the alert. To determine the log files that HQ monitors for the resource, see the **Configuration Properties** section of the resource's **Inventory** tab. The files that HQ monitors for a resource are defined using the **server.config\_track.files** property. The maximum length for filename entered is 25 characters. For configuration instructions, see [Configuration Tracking](#).

#### Define Additional Conditions

**Available only in vFabric Hyperic**

In HQ Enterprise, you can define up to three conditions for an alert. To add another condition, click **Add Another Condition** and specify whether both the new condition and the preceding one must be satisfied for the alert to be triggered ("AND") or only one must be satisfied ("OR").

#### Define Recovery Alert Behavior

**Available only in vFabric Hyperic**

To designate the alert you're defining as a recovery alert, select the primary alert definition from the pulldown.

A recovery alert condition should detect when the condition that fired the primary alert is no longer true. When a recovery alert fires, it marks the primary alert "Fixed", and the primary alert definition is re-enabled. The primary alert definition should be configured to **Generate one alert and then disable alert definition until fixed**, as described below. For more information, see [Recovery Alerts](#).

### Enable Actions

You can make the condition absolute - (one strike you're out) or fire after the condition occurs repeatedly. Choose either:

- **Each time conditions are met.** The alert fires upon a single occurrence of the condition, or
- **Once every\_ times conditions are met within a time period of \_minutes.** This option configures an alert to fire when the condition(s) occur multiple times over a period of time. Enter the number of occurrences and period of time.

### Enable Action Filters

An action filter can be used to control alert firing and alert actions.

### Disable an Alert Definition upon Firing

Click **Generate one alert and then disable alert definition until fixed** to disable the alert definition after firing and reenable it when the alert that triggered it is marked "Fixed".

This option eliminates redundant firing for the same problem. If you do not choose this option, the alert will fire repeatedly as long as the triggering condition is still true.

In HQ Enterprise this configuration option - used in conjunction with recovery alerts - automates the process of disabling and re-enabling an alert definition. Result: (1) no redundant alerts for the same problem, and (2) you don't have manually "fix" an alert triggered by a transient problem. For more information, see [Recovery Alerts](#).

### Disregard Control Actions for Related Alerts.

The **Disregard control actions that are defined for related alerts** option appears on **New Alert Definition** pages for resources that support control actions. This option only applies when:

1. The current alert definition will include an alert action
2. The resource associated with the alert is a member of an application
3. There are other members of the same application with alerts that fire control actions (ideally the same control action)

Under these circumstances, this configuration option ensures that if multiple alerts are fired within a short period for resources that are members of the same application, only one control action will be executed. For example, this would prevent a server from being restarted several times in a short period of time for the same alert conditions. For instance, you might have an alert with an action to restart a Tomcat server if the JVM Free Memory got too low and another alert with an action to restart the same server if the JVM Active Thread count got too

high. If both alerts fired at the same time and they were filtering control actions, only 1 restart control action would be executed and not two.

## Step 4: Define Alert Actions

You assign actions to an alert definition on the **Alert Definition** page, which appears when you save a new alert definition or edit an existing alert definition.

The **Alert Definition** page is similar to the **New Alert** page, with the addition of **Edit** controls in the "Alert Properties" and "Condition Set" sections, and tabs at the bottom of the page for defining alert actions.

You can specify multiple actions to be performed automatically when an alert fires. The types of actions available in the **Alert Definition** page vary based on: (1) the type of resource the alert applies to, (2) your version of Hyperic, and (3) whether you've configured Hyperic for the types of actions that must be enabled before you can use them, such as escalations, OpenNMS trap actions, and in vFabric Hyperic, SNMP notifications.

To define an alert action, select one of the tabs and supply the required information:

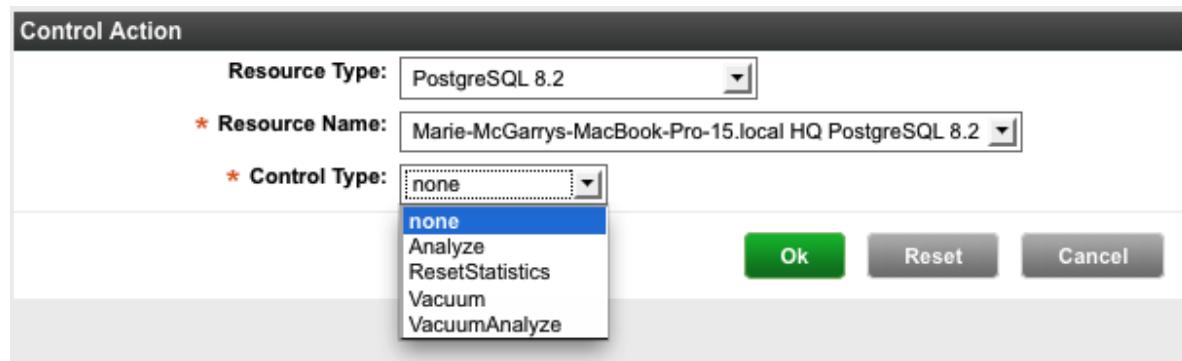
### Escalation

Select an escalation from the "Escalation Scheme" pulldown; the tab refreshes and shows the escalation steps. You must define an escalation before you can assign it to an alert definition. Using an escalation that is configured to repeat until the alert is fixed is a good way to prevent redundant alerts firing for the same problem. To create an escalation, click **Escalation Schemes Configuration** on the **Administration** tab. For more information about escalations, see [Understanding Escalations](#).

### Control Action

**Available only in vFabric Hyperic**

In vFabric Hyperic, you can define a resource control action for Hyperic to perform when the alert fires. The control action can target the current resource (the one to which the alert definition is assigned) or a different resource on the same platform, as long as the resource type has Hyperic-supported control actions. To configure a control action for the alert, select the **Control Action** tab and click **Edit**. \*The \*Add Control Action page appears; click the thumbnail below for a screenshot. Follow the instructions on the associated [help page](#). You can only assign a single control action to an alert definition. **Note:** You cannot assign a control action to a resource type alert.



### Notify Roles

**Available only in vFabric Hyperic**

## Define an Alert for a Resource Type

In vFabric Hyperic you can specify one or more roles as notification recipients. Hyperic users with a role you specify will be notified when an alert is fired. Click **Add to List** on the **Notify Roles** tab. On the roles selection page, choose the role(s) to be notified when the alert fires. The [help page](#) has instructions.

For information about creating roles specifically for use in notification actions, see in [Role-Based Alert Notifications](#).

### Notify HQ Users

Click **Add to List** on this tab to specify one or more Hyperic users as notification recipients. On the user selection page, choose the users to be notified when the alert fires. The [help page](#) has instructions.

### Notify Other Recipients

Click **Add to List** on this tab to specify non-Hyperic user email recipients for alert notifications. The [help page](#) has instructions.

### Script

#### Available only in vFabric Hyperic

In vFabric Hyperic, to assign a script action to the alert definition, click the **Script** tab, enter the full path to the script, and click **Set**. Hyperic will run the script when the alert fires. Scripts can reference alert-related Hyperic environment variables to perform custom notification logic. For information, see [Define a Script Action for an Alert](#).

### OpenNMS

If Hyperic Server is configured for OpenNMS integration, you can use this tab to configure Hyperic to send an SNMP trap to OpenNMS when the alert fires. The notification will be generated by `opennms_notify.gsp` alert notification template.

To configure an OpenNMS trap action, enter:

- **Server** - Listen address for the OpenNMS server
- **Port** for the OpenNMS server.

For more information, see [Enabling OpenNMS Integration](#).

### SNMP Notification

#### Available only in vFabric Hyperic

If the Hyperic Server is configured to send SNMP notifications to your NMS, you can use this tab to configure a trap notification action. See [SNMP Server Configuration Properties](#) for more information.

The notification sent when the alert fires will contain three variable bindings:

- `sysUptimeOID.0` - No configuration is required for this binding.
- `snmpTrapOID.0` - This binding is configured on the **HQ Server** settings page.
- A variable binding for the alert data specified in the `snmp_trap.gsp` alert notification template - the alert definition name and the "short reason" for firing. Note that Alert templates may be customized, as described in [Tailoring Alert Notification Templates](#).

### Including more variable bindings in SNMP messages

For richer capability, you can configure a SNMP notification as a step in an escalation. An SNMP notification in an escalation can be configured with additional variable bindings. For more information, see [Understanding Escalations](#)

To configure an SNMP notification action enter:

- **IP Address** - the address and port of the target NMS.
- **OID** - The OID of the notification to send, which will contain the alert details specified in the `snmp_trap.gsp`, template.
- **Notification Mechanism** - The type of SNMP notification to send:
  - v1 Trap
  - v2c Trap
  - Inform

## 9.3. Define a Recovery Alert for a Resource Type Alert

Available only in vFabric Hyperic

- [Section 9.3.1, "Understanding Recovery Alerts"](#)
- [Section 9.3.2, "Define Primary Alert Definition to Disable Itself"](#)
- [Section 9.3.3, "Create a Recovery Alert Definition for a Resource Type Alert"](#)

### 9.3.1. Understanding Recovery Alerts

A recovery alert is special type of alert definition that you pair with a properly configured primary alert definition to streamline alert management. The purpose of a recovery alert is to fire when the condition that fired another alert - the "primary" alert - is no longer true, and then mark the primary alert "fixed" and re-enable the primary alert definition. This strategy prevents redundant alerts and automates the task of marking an alert "fixed".

You can define a recovery alert for a resource alert, and in HQ Enterprise, a resource type alert. You cannot and don't need to define a recovery alert for a resource group alert in HQ Enterprise - recovery alert behavior is automatic for resource group alerts.

To effectively leverage the benefits of recovery alert functionality you need to:

- Configure the primary alert definition to fire once when triggered and then disable itself until that fired alert is fixed. This prevents multiple alerts for a single incident.
- Configure a recovery alert definition and assign it to the primary alert definition. Make the recovery alert condition the opposite of the primary alert condition. The recovery alert fires when the primary alert condition is no longer true. Upon firing, the recovery alert marks the alert fired by the primary alert "fixed", and re-enables the primarily alert definition, so that if the problem occurs again, the primary alert is again triggered.

Properly configured primary and recovery alert definitions keep users notified of problems without deluging them with alert notifications.

### 9.3.2. Define Primary Alert Definition to Disable Itself

You can only define a recovery alert for a primary alert definition that already exists. Before setting up a recovery alert, create the primary alert definition, and choose the "Disable alert until re-enabled manually or by recovery alert" option.

### 9.3.3. Create a Recovery Alert Definition for a Resource Type Alert

To create a recovery alert definition for a resource type alert:

1. Click **Administration** in the masthead.
2. Click **Monitoring Defaults** in "HQ Server Settings" section of the page.
3. On the **HQ Monitoring Defaults Configuration** page, click **Edit Alerts** for the resource type to which the primary alert is defined. The **Monitoring Defaults** page will display any alert definitions already assigned to the alert.
4. Click **New** and follow the directions in [Create a Resource Type Alert Definition](#), making sure, when defining the "Condition Set" to

- a. specify the condition that is the opposite of the primary alert definition's condition. For example if the primary alert condition is "1 Minute Load Avg > 2.0.", define the recovery alert condition as "1 Minute Load Avg < 2.0.
- b. Use the **Recovery Alert** pulldown to select the primary alert.

## 10. Manage Alert Definitions

- [Section 10.1, “Enable Alert Definition Change Logging”](#)
- [Section 10.2, “View and Edit Alert Definitions”](#)
- [Section 10.3, “Enable and Disable Alert Definitions”](#)

## 10.1. Enable Alert Definition Change Logging

The HQ audit subsystem logs changes made to alert definitions. When an alert definition is enabled, disabled, or deleted, the event is written to the database. The information includes the username of the person who made the change.

You can configure HQ Server to also write the audit events to the `server.log` file in the server's `logs` directory. To do so, add the following section to `ServerHome/conf/server-log4j.xml`, near the end of the file, before the `root` stanza.

```
<![CDATA[&lt;!-- Use this category to log every instance of a group alert firing.
      Comment out if the log messages become unwieldy. --&gt;
    &lt;category name="org.hyperic.hq.galerts.processor.MemGalertDef.Fired"&gt;
      &lt;priority value="DEBUG" /&gt;
    &lt;/category&gt;

    &lt;category
name="org.hyperic.hq.common.server.session.AuditManagerEJBImpl"&gt; &lt;!--SEE
HERE --&gt;
      &lt;priority value="DEBUG"/&gt;
    &lt;/category&gt;]]>
```

The entries are written to `logs/server.log`, similar to the following:

```
2009-03-18          15:56:20,088           INFO          [main]
[org.hyperic.hq.common.server.session.AuditManagerEJBImpl@259] Audit Manager starting up
2009-03-18          15:58:28,223           DEBUG         [main]
[org.hyperic.hq.common.server.session.AuditManagerEJBImpl@87]
Audit:Audit[user=admin,purpose=12288,time=1237409692209,resource=,msg=HQ Started]
2009-03-18          16:01:12,114           DEBUG         [UserLoginListener][org.hyperic.hq.common.server.session.AuditManagerEJBImpl@87]
Audit:Audit[user=hqadmin,purpose=16384,time=1237410072113,resource=,msg=HQ Administrator logged in]
2009-03-18          16:05:18,485           DEBUG         [http-0.0.0.0-7080-4]
[org.hyperic.hq.common.server.session.AuditManagerEJBImpl@87]Audit:Audit[user=hqadmin, definition deleted (High Load)]
```

## 10.2. View and Edit Alert Definitions

Topics marked with \* relate to features available only in vFabric Hyperic.

- [Section 10.2.1, “List Alert Definitions for a Resource”](#)
- [Section 10.2.2, “List Alert Definitions for a Resource Type”](#)
- [Section 10.2.3, “List Alert Definitions for a Resource Group”](#)
- [Section 10.2.4, “View All Alert Definitions for all Resources”](#)
- [Section 10.2.5, “View and Edit an Alert Definition”](#)

There are a variety of ways to navigate to pages that list and provide detailed information about alert definitions.

### 10.2.1. List Alert Definitions for a Resource

1. Browse the the resource.
2. Click the **Alert** tab.
3. Click the **Configure** tab to see a list of alert definitions for the resource.

For information about alert definition list for a resource, see the [help page](#).

### 10.2.2. List Alert Definitions for a Resource Type

**Available only in vFabric Hyperic**

1. Click **Administration** in the masthead.
2. Click **Monitoring Defaults** in "HQ Server Settings" section.
3. On the **HQ Monitoring Defaults Configuration** page, click **Edit Alerts** for the resource type
4. The **Monitoring Defaults** page displays alert definitions for the resource type.

For information about alert definition list for a resource type, see the [help page](#).

### 10.2.3. List Alert Definitions for a Resource Group

**Available only in vFabric Hyperic**

1. Browse the the resource group.
2. Click the **Alert** tab.
3. Click the **Configure** tab to see a list of alert definitions for the resource group.

For information about alert definition list for a resource, see the [help page](#).

### 10.2.4. View All Alert Definitions for all Resources

To view all alert definitions:

1. Click the **Analyze** tab in the Masthead.
2. Click **Alert Center**.
3. Click **Definitions**.

For information about the information and options on the **Resource Alert Definitions** page, see the [help page](#).

### 10.2.5. View and Edit an Alert Definition

To view the details of an alert definition click the alert definition name in an alert definition list for the resource it is assigned to, or, in vFabric Hyperic, in the **Definitions** tab in the **Alert Center**.

For information about the information and options available on the **Alert Definition** page, see the [help page](#).

## 10.3. Enable and Disable Alert Definitions

Topics marked with \* relate to features available only in vFabric Hyperic.

- [Section 10.3.1, “Enable or Disable a Resource Alert Definition”](#)
- [Section 10.3.2, “Enable or Disable Multiple Alert Definitions for a Resource”](#)
- [Section 10.3.3, “Enable or Disable a Resource Type Alert Definition”](#)
- [Section 10.3.4, “Enable or Disable an Group Alert Definition”](#)
- [Section 10.3.5, “Enable or Disable all Alert Definitions for Multiple Resources”](#)
- [Section 10.3.6, “Enable or Disable all Alert Definitions”](#)

### 10.3.1. Enable or Disable a Resource Alert Definition

There are multiple ways you can enable or disable a resource alert definition in the HQ user interface:

- On the **Alerts** tab for a resource:
  1. Browse the the resource to which the alert definition is assigned.
  2. Click the **Alerts** tab.
  3. Click **Configure** to display a list of alert definitions for the resource.  
The page will include any alert definitions that the resource inherits from a resource type alert definition, marked with an asterisk. if you enable or disable the alert definition at this level, the change will be overridden by subsequent updates to the alert definition at the resource type level.
  4. Checkmark the alert definition you wish to enable or disable and toggle the **Set Active** control.
- On the **Alert Definition** page:
  1. Navigate to the **Alert Definition** page, by clicking the alert definition name on the **Alert Center** page or the **Alert Detail** page for a alert that has fired.
  2. Click **Edit** the in the "Alert Properties" section of the **Alert Definition** page.
  3. Toggle the **Set Active** button.

### 10.3.2. Enable or Disable Multiple Alert Definitions for a Resource

1. Browse the the resource to which the alert definition is assigned.
2. Click the **Alert** tab.
3. Click **Configure** to display a list of alert definitions for the resource.
4. Checkmark the alert definitions you wish to enable or disable and toggle the **Set Active** control.

### 10.3.3. Enable or Disable a Resource Type Alert Definition

Available only in vFabric Hyperic

When you enable or disable a resource type alert, the change applies to all resources of that type.

1. Click **Administration** in the masthead.
2. Click **Monitoring Defaults** in "HQ Server Settings" section.
3. On the **HQ Monitoring Defaults Configuration** page, click **Edit Alerts** for the resource type.
4. The **Monitoring Defaults** page displays alert definitions for the resource type.
5. Click one or more alert definitions, and toggle the **Set Active** button.

#### 10.3.4. Enable or Disable an Group Alert Definition

Available only in vFabric Hyperic

1. Browse the the group to which the alert definition is assigned.
2. Click the **Alert** tab.
3. Click **Configure** to display a list of alert definitions for the group.
4. Checkmark the alert definition you wish to enable or disable and toggle the **Set Active** control.

#### 10.3.5. Enable or Disable all Alert Definitions for Multiple Resources

You can disable or enable all of the alert definitions for selected resources on the **Browse Resource** page.

1. Click the **Resources** tab.
2. Use the filter options at the top of the page to list the resources of interest.
3. Place a checkmark next to one or more resources.
4. Click **Enable all Alerts** or **Disable all Alerts**.

#### 10.3.6. Enable or Disable all Alert Definitions

You can disable or enable alert definitions globally, if you want to turn alerting on or off for all resources in inventory.

1. Click the **Administration** tab.
2. Click **HQ Server Settings**.
3. In the "Global Alert Properties" section, click the **Alerts ON** or **OFF** control.

The change takes effect immediately. No alerts will be fired for any resource when OFF is selected. Escalations currently in progress will be completed.

# 11. Manage Alert and Notification Volume

Topics marked with \* relate to features available only in vFabric Hyperic.

- [Section 11.1, “Manage Alerting for Optimal Visibility into Problems”](#)
- [Section 11.2, “Prevent Multiple Alerts for the Same Problem”](#)
- [Section 11.3, “Disable all Alert Notifications”](#)
- [Section 11.4, “Hierarchical Alerting Prevents a Cascade of Alerts in Resource Hierarchies”](#)
- [Section 11.5, “Configure Network Host Dependencies for Hierarchical Alerting”](#)
- [Section 11.6, “Set a Notification Throttle”](#)
- [Section 11.7, “Enable or Disable all Alert Definitions”](#)

## 11.1. Manage Alerting for Optimal Visibility into Problems

The purpose of alerting is to speed the process of detecting and resolving problems. Rapid detection and response can be compromised when multiple alerts fire as a result of the same problem, or if responders are inundated by repetitive alert notifications. Excessive alert and notification are less likely when:

- A given problem or root cause results in one, rather than many, alerts.
- An alert status of "unfixed" indicates a problem that still exists and needs attention, rather than a transient issue that occurred, and then went away.
- A single problem doesn't result in a firestorm of redundant notifications.

The following sections describe options for controlling the volume of alerts and notifications.

## 11.2. Prevent Multiple Alerts for the Same Problem

When the volume of fired alerts is high, prioritizing and resolving problems is harder. You can reduce the overall volume of fired alerts without sacrificing visibility if you limit the number of times a given alert definition fires an alert for the same incident.

- **Use repeating escalations** - Assign an escalation that repeats until the alert is fixed. An alert in escalation cannot re-fire. The use of repeating escalations for all alerts is highly recommended and the best way to control alert volume in Hyperic.
- **Fire one alert then disable the definition** - You can configure a alert definition to fire once and disable itself until that alert is marked fixed. When the alert is marked "fixed" the alert definition is re-enabled. Note that if you have vFabric Hyperic, you can define an associated recovery alert to automatically fix the alert when the triggering condition is no longer true.

## 11.3. Disable all Alert Notifications

If the volume of notifications exceeds manageable levels you can disable alert notifications globally. This option stops all alert notifications immediately including those resulting from escalations in progress.

1. Click the **Administration** tab.
2. Click **HQ Server Settings**.
3. In the "Global Alert Properties" section, click the **Alert Notifications** OFF or ON control.

The change takes effect immediately. No alert notifications will be issued when OFF is selected. Escalations currently in progress will be terminated.

## 11.4. Hierarchical Alerting Prevents a Cascade of Alerts in Resource Hierarchies

Available only in **vFabric Hyperic**

Hierarchical alerting prevents a single root cause in the same resource hierarchy from causing a cascade of alerts to fire.

When hierarchical alerting is enabled, the alert evaluation process takes into account the availability and alert status of a resource's parent. Specifically, when an agent reports that a resource with an active alert definition is unavailable, HQ checks the availability of the resource's parent in the resource hierarchy. Hyperic will fire an alert for the child resource only if:

- the parent is available, or
- the parent is unavailable, and there is not an enabled, single-condition alert definition on its Availability metric.

Hierarchical alerting takes advantage of Hyperic's knowledge of the platform-server-service resource hierarchy, obtained via the auto-discovery process. For example, before firing an alert for a service, Hyperic checks the availability and alert status of its parent server. Similarly, before firing an alert for a server, Hyperic checks the availability and alert status of its parent platform.

Hierarchical alerting is a global behavior that applies to all resources in inventory; it is enabled by default. You enable or disable hierarchical alerting in the "Global Alert Settings" section of the **HQ Server Settings** page, accessible from the **Administration** tab in the vFabric Hyperic user interface. The change takes effect immediately.

#### **Hierarchical Alerting and vSphere Resources**

This version of Hyperic does not fully support hierarchical alerting for the vSphere virtual resources hierarchy (VMware vCenter - vSphere Host - vSphere VM). For more information see [Known Issues in Hyperic Enterprise 4.4](#), in the Hyperic 4.4.0 Release Notes.

## **11.5. Configure Network Host Dependencies for Hierarchical Alerting**

**Available only in vFabric Hyperic**

You can extend the reach of hierarchical alerting beyond the basic platform-server-service hierarchy to top level platforms - network devices or virtual hosts upon which operating system platforms depend.

To enable Hyperic to consider a top-level platform's availability and alert status before firing an alert for a dependent resources, you must define the relationship between a top-level platform and the operating system platforms that depend on it. To do so, you use the **Network Host Dependency Manager**, available in the "Plugins" section on the **Administration** tab of the vFabric Hyperic user interface. The [help page](#) for the **Network Host Dependency Manager** provides instructions.

#### **vSphere Resource Relationships in Hyperic Enterprise**

If you manage vSphere resources using the new vSphere plugin, do not use the **Network Host Dependency Manager** to configure dependencies for vSphere resources. vSphere resource types will be removed from the **Network Host Dependency Manager** pulldown menus in a future release. For information about the vSphere virtual resource hierarchy, see Monitoring vSphere Components.

## **11.6. Set a Notification Throttle**

**Available only in vFabric Hyperic**

You can configure the Hyperic Server to throttle back alert notifications in the event of an alert storm. You configure the maximum number of notifications that Hyperic will issue within a fifteen second interval. When the threshold is reached, Hyperic stops sending individual alert notifications, and instead, sends a summary of alert

activity to designated recipients every ten minutes. When the volume of notifications falls below the specified threshold, Hyperic resumes sending individual notifications.

Notification throttling is disabled by default. You configure it on the **HQ Server Settings** page, available from the **Administration** tab.

## 11.7. Enable or Disable all Alert Definitions

You can disable or enable alert definitions globally, if you want to turn alerting on or off for all resources in inventory.

1. Click the **Administration** tab.
2. Click **HQ Server Settings**.
3. In the "Global Alert Properties" section, click the **Alerts ON** or **OFF** control.

The change takes effect immediately. No alerts will be fired for any resource when OFF is selected. Escalations currently in progress will be completed.

# 12. About Global Monitoring and Alerting Settings

Topics marked with\*relate to features available only in vFabric Hyperic.

- [Section 12.1, “Configure Global Alert Properties”](#)
- [Section 12.2, “Configure Alert Notification Throttling”](#)
- [Section 12.3, “Configure Alert Notification Email Properties”](#)
- [Section 12.4, “Configure Metric Baselingining Properties”](#)
- [Section 12.5, “Configure Hyperic Server Help and Announcement Behavior”](#)
- [Section 12.6, “Configure User Interface Help Location”](#)
- [Section 12.7, “Configure Hyperic Version and Security Announcements”](#)

These sections describe options and settings that are defined globally for a Hyperic deployment.

## 12.1. Configure Global Alert Properties

The settings in the **Global Alert Properties** section of the **Administration > HQ Server Settings** page enable immediate and global control of alert processing.

- **Alerts** - Disable or enable all alert definitions for all resources immediately. Disabling stops any alerts from firing; notifications defined in escalations that are currently in progress will be completed.
- **Alert Notifications** - Disable or enable alert notifications for all resources immediately. Disabling stops all notifications, include those for alerts with escalations currently in progress.
- **Hierarchical Alerting\*** - This setting controls whether alerts are evaluated using the hierarchical alerting method. When hierarchical alerting is enabled, before firing an alert for a resource, HQ considers the availability and alert status of the resource's parent. The purpose of hierarchical alerting is to avoid firing alerts for every resource affected by a single root cause.

**Note:** You can extend the effect of hierarchical alerting by configuring the relationship between a network device or virtual host and the platforms that depend on it using the **Network and Host Dependency Manager** available in the "Plugins" section of the **Administration** tab. For more information see [Configure Network Host Dependencies for Hierarchical Alerting](#).

## 12.2. Configure Alert Notification Throttling

**Available only in vFabric Hyperic**

You can use notification throttling to limit the number of alert email actions (notifications sent by email for a fired alert) that HQ will issue in a 15 second interval. When the threshold you specify is reached, HQ stops sending email alert notifications and instead sends a summary of alert activity every ten minutes to the recipients you specify.

After starting to throttle, HQ re-evaluates notification volume for fired alerts every 10 minutes; when it determines that the per interval volume of individual notifications that fired alerts would generate is less than the configured threshold, HQ resumes sending individual notifications.

In the **Notification Throttling Configuration Properties** section of the **Administration > HQ Server Settings** page:

1. Click the **Notification Throttling** ON control.
2. In the "Threshold" field, enter the maximum number of notifications you want sent in a 15 second interval.
3. Enter one or more email addresses in the "Notification Email(s)" field.

For related information, see [Controlling Alert and Notification Volume](#).

## 12.3. Configure Alert Notification Email Properties

The settings in the **Email Configuration Properties** section of the **Administration > HQ Server Settings** are used to form notifications that Hyperic sends for a fired alert.

Property	Description
Base URL	<p>The address:port where the Hyperic Server listens for web application requests. The initial value of <b>Base URL</b> is the web application listen port configured when the Hyperic Server was installed, for example:</p> <p><code>http://Ms-MacBook-Pro-15.local:7080</code></p> <p><b>Base URL</b> forms the prefix of the URL to which Hyperic appends the remainder of the URL, which points to the <b>Alert Detail</b> page for the fired alert. For example:</p> <p><code>http://Ms-MacBook-Pro-15.local:7080/alerts/Alerts.do?mode=viewAlert&amp;eid=5:10611&amp;a=16431</code></p>
From Email Address	<p>The email address listed as the sender of the alert emails. For example:</p> <p><code>hq@demo2.vmware.com</code></p>

## 12.4. Configure Metric Baselining Properties

Available only in vFabric Hyperic

In vFabric Hyperic, the properties in the **Automatic Baseline Configuration Properties** section of the **Administration > HQ Server Settings** page control the Hyperic baselining process and the accuracy of the baseline.

Server Setting	Description	Default
Baseline Frequency	The frequency with which HQ calculates a baseline for each metric.	3 days
Baseline Dataset	The time range of metric data used in calculating the baseline.	7 days
Baseline Minimum Data Points	The minimum number of data points used in calculating a baseline.	40

Server Setting	Description	Default
Track Out-of-Bounds Metrics	Controls whether or not HQ tracks <a href="#">OOB metrics</a> .	off

## 12.5. Configure Hyperic Server Help and Announcement Behavior

Topics marked with\* relate to features available only in vFabric Hyperic.

- [Section 12.1, “Configure Global Alert Properties”](#)
- [Section 12.2, “Configure Alert Notification Throttling”](#)
- [Section 12.3, “Configure Alert Notification Email Properties”](#)
- [Section 12.4, “Configure Metric Baselining Properties”](#)
- [Section 12.5, “Configure Hyperic Server Help and Announcement Behavior”](#)
- [Section 12.6, “Configure User Interface Help Location”](#)
- [Section 12.7, “Configure Hyperic Version and Security Announcements”](#)

## 12.6. Configure User Interface Help Location

By default, the online help for Hyperic user interface is served remotely from the Hyperic support site. Help is also built-in to the Hyperic Server. To configure the server to present local help, toggle the value of the **Context-Sensitive Help** property in the **Announcement Properties** section of the **Administration > HQ Server Settings** page, from "Remote" to "Internal".

## 12.7. Configure Hyperic Version and Security Announcements

Hyperic sends email announcements to Hyperic administrators when a key release is upcoming, or to distribute important product information. You can configure the level of messages you wish to receive or disable receipt of Hyperic notifications with the **HQ Version and Security Announcements** property, in the **Announcement Properties** section of the **Administration > HQ Server Settings** page. You can choose:

- **All**
- **Major** — default value
- **None**

## 13. Manage Inventory with HQApi

Topics marked with \* relate to features available only in vFabric Hyperic.

For information about managing HQ inventory with HQApi, see these topics in *Web Services API*.

- [HQApi resource command](#)
- [HQApi group command](#)
- [HQApi application command](#)