

Hyperic Operations IQ V1.2

Functional Overview



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Table of Contents

Introduction.....1
 Other Documentation.....1
Hyperic IQ Overview.....1
Hyperic IQ Authorization and Access Control2
IQ User Interface.....3
Ready-to-Run Reports.....4
 Administrative Reports4
 Inventory Reports4
 Problem Analysis Reports.....4
 SLA Reports.....5
 Trend Analysis and Capacity Planning Reports.....5
Ad Hoc Editor: Drag-and-Drop Report Design.....6
Advanced Report Development with iReport and Hyperic RDL.....7

Introduction

This document is a functional overview of HQ Operations IQ , a reporting platform for Hyperic HQ Enterprise 4.0.

- *Hyperic IQ Overview* on page 1
- *Hyperic IQ and the Rest of Your HQ Environment* on page 2
- *Hyperic IQ Authorization and Access Control* on page 2
- *IQ User Interface* on page 3
- *Ready-to-Run Reports* on page 4
- *Ad Hoc Editor: Drag-and-Drop Report Design* on page 6
- *Advanced Report Development with iReport and Hyperic RDL* on page 7

Other Documentation

- *Hyperic Operations IQ Installation and Administration Guide* has instructions for installation and setup.
- *Hyperic Operations IQ Getting Started Guide* has information for new users, including an instructions for common IQ tasks, and examples of IQ reports.
- *Hyperic Operations IQ Ad Hoc Editor* describes features and usage of Hyperic IQ's Ad Hoc Editor.
- *Hyperic Operations IQ Reference Guide* has information for developers and administrators responsible for supporting, customizing, or extending ARC.

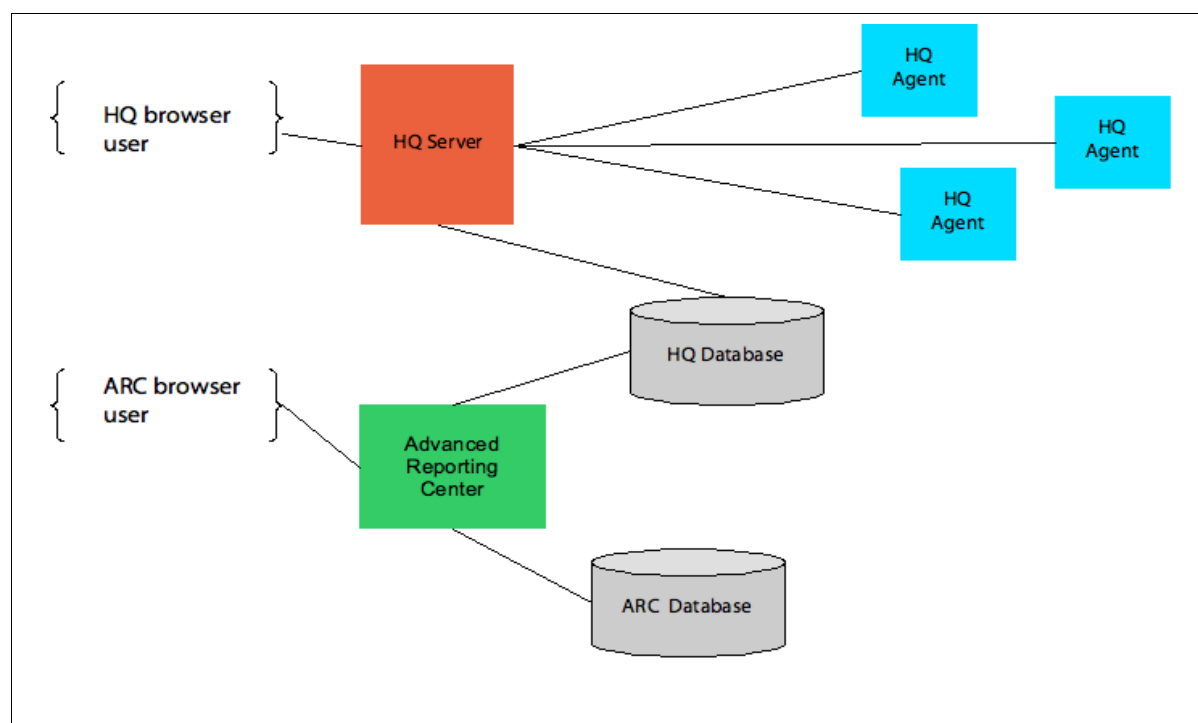
Hyperic IQ Overview

Hyperic Operations IQ is an advanced reporting platform for Hyperic HQ Enterprise, built on top of JasperSoft's JasperServer Pro product. You can use IQ to access and build reports based on the resource and metrics information in the HQ database.

- **Built-In Reports.** Out-of-the-box, Hyperic IQ has reports you can run to view:
 - Gauges and other charts that illustrate availability or other service level indicators for resources over a selected interval.
 - Inventory facts about your managed resources, including platform-server-service and group hierarchies.
 - Supported and configured metric data collection for all resources.
 - Charts and tabular reports that present and compare performance and availability metrics broadly, or at the application or group level.
- **Hot Links to Operations Metrics.** Hyperic IQ's metric reports link directly to detailed monitoring views you can use to dig deeper and take action--adjust monitoring settings, modify resource group membership, or perform other authorized actions that your HQ permissions allow.
- **Ad Hoc Query Editor for Simple Report Building.** Hyperic IQ's Ad Hoc Editor allows drag-and-drop creation of simple reports. Build tabular, crosstab, and chart reports--including stacked charts, line charts and bar charts--by picking from available data fields. Ad hoc reports are easy to create; no HQ database knowledge is required.
- **Scheduled Reporting.** Hyperic IQ can automatically run and distribute reports on schedules you define.
- **Complex Report Building.** Build complex reports with iReport, the open source WYSIWIG report designer for JasperServer-based reporting environments. iReport supports advanced formatting and eases report-building with query and expression builders.
- **Logical access to HQ data.** Use simple HQ-specific queries in iReport designs to fetch HQ availability and metrics without knowledge of the HQ database structure.

- **Rich Visualization.** Hyperic IQ supports a broad array of chart types to visualize and communicate service level and performance results, including meters, thermometers, and pie, bar, line, and area charts.
- **Multiple output formats.** Hyperic IQ reports can be output in multiple formats: HTML, PDF, Excel, Rich Text Format, comma-separated values, and Flash.
- **User, Resource, and Report Security.** Hyperic IQ has seamless access to the user access and resource authorization rules defined in Hyperic HQ. HQ users log on to IQ using HQ credentials, and may report only on resources to which they are authorized in HQ. You control access to IQ reports within IQ, at the folder or report level. Hyperic IQ and the Rest of Your HQ Environment

Hyperic IQ runs in its own Apache Tomcat container, and uses its own database for scheduling reports and storing data. It can run on the same system as the HQ Server or the HQ database, on another machine, or on a virtual machine that meets the system requirements.



Hyperic IQ Authorization and Access Control

Hyperic IQ uses HQ Enterprise authorization. Any user with an HQ user account for the HQ Server instance that Hyperic IQ accesses can log into IQ using his or her HQ username and password. Upon first successful login by an HQ user to IQ, the user's account is created in IQ. HQ Roles assigned to HQ users that log in to IQ are imported to IQ.

The HQ resources that will appear in the IQ reports that a given user runs depend on what HQ Roles that user has. In HQ, access to resources is granted to roles, which are associated with users. So, an HQ user that does not have any HQ Roles with access to resource groups will not see any data in IQ reports.

IQ users that are created explicitly within IQ, rather than being imported from HQ, will have no access to HQ resources - reports such users run in IQ will be empty of data.

By default, all IQ users can run all of the IQ predefined reports described in on page . Access to specific report folders or reports can be controlled within IQ using IQ Roles. An IQ administrator assigns permissions to folders or reports to an IQ role, and IQ roles to IQ users. An IQ user has the permissions granted to his or her role(s) for each report or report folder.

IQ users with the ROLE_USER role have "read-only" access to all reports in the Reports folder, allowing the user to run, but not modify or remove the report. Access to subfolders of the Reports folder by selecting the folder and clicking the Assign Folder Permissions icon. The role permissions for a folder are inherited by each report in the folder. You can set permissions at the report level by selecting a report and choosing Assign Permissions from the Resource context menu. Permission assignments at report level override the permissions set at the owning folder level.

IQ User Interface

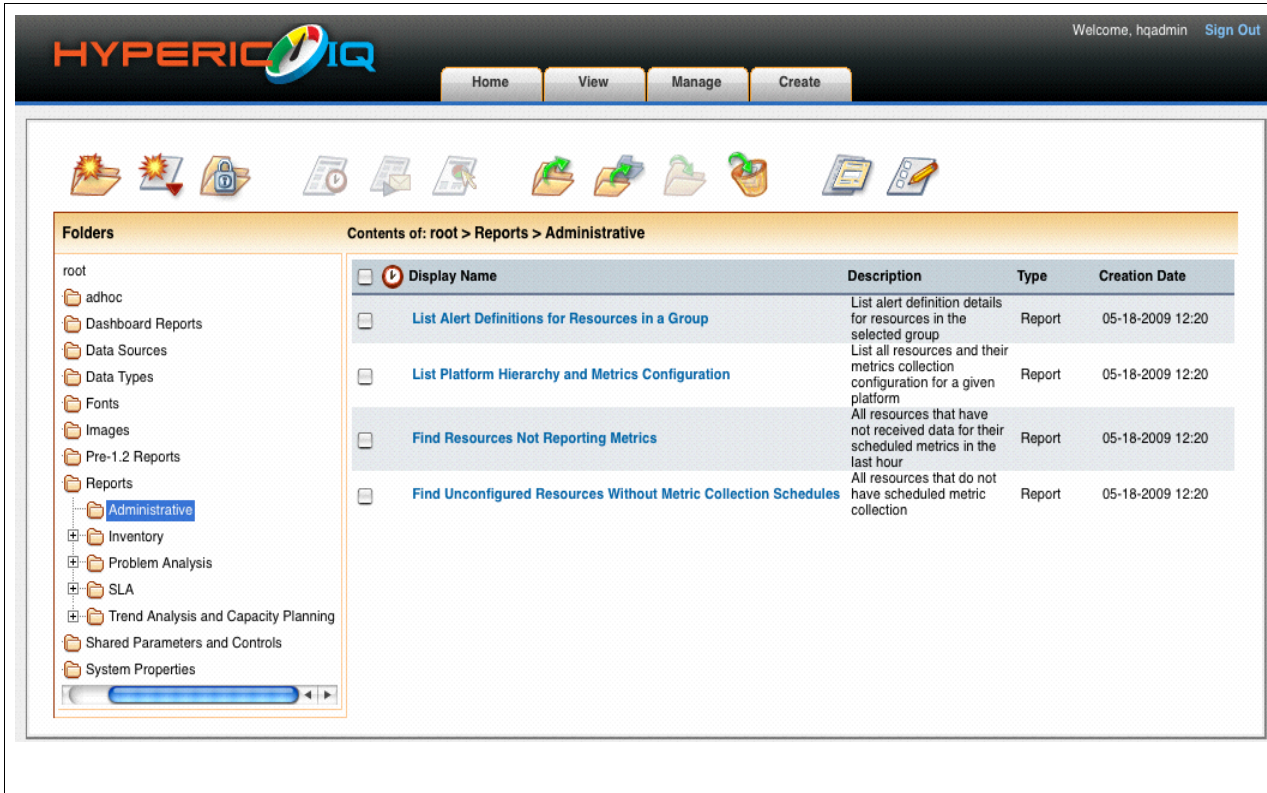
IQ has a browser-based user interface, which you access by pointing your browser to the IQ URL. You supply your HQ Enterprise login credentials.

End users run reports from the IQ Home page. End users can also see the **View** tab, which provides access to IQ messages, and the **Create** tab, which opens the Ad Hoc Query editor. The **Manage** tab appears only to IQ administrators; it is used for managing IQ users and roles.

The icons below the tabs provide these functions: Add Folder, Add Resource, Assign Folder Permissions, Schedule, Run in Background, Open in Designer, Move, Copy, Properties, and Edit. Specific icons are enabled based on the permissions of the user and the item currently selected in the folder tree.

The only folder a typical end user will access is the **Reports** folder, shown expanded below; its subfolders contains ready-to-run reports, which are described in on page .

Note: The other folders in the folder tree are not intended for end user access. They contain resources created and used by iReport developers and IQ Administrators.



The screenshot displays the Hyperic IQ web interface. At the top, there is a navigation bar with the Hyperic IQ logo, a welcome message for 'hqadmin', and a 'Sign Out' link. Below the navigation bar are four tabs: 'Home', 'View', 'Manage', and 'Create'. A row of icons for various actions (Add Folder, Add Resource, Assign Folder Permissions, Schedule, Run in Background, Open in Designer, Move, Copy, Properties, Edit) is located below the tabs.

The main content area shows a folder tree on the left and a list of reports on the right. The folder tree is expanded to show the 'Reports' folder, which contains subfolders like 'Administrative', 'Inventory', 'Problem Analysis', 'SLA', 'Trend Analysis and Capacity Planning', 'Shared Parameters and Controls', and 'System Properties'. The 'Administrative' folder is selected, and its contents are displayed in a table.

Display Name	Description	Type	Creation Date
List Alert Definitions for Resources in a Group	List alert definition details for resources in the selected group	Report	05-18-2009 12:20
List Platform Hierarchy and Metrics Configuration	List all resources and their metrics collection configuration for a given platform	Report	05-18-2009 12:20
Find Resources Not Reporting Metrics	All resources that have not received data for their scheduled metrics in the last hour	Report	05-18-2009 12:20
Find Unconfigured Resources Without Metric Collection Schedules	All resources that do not have scheduled metric collection	Report	05-18-2009 12:20

Ready-to-Run Reports

Hyperic IQ ships with a variety of predefined reports, found in the **Reports** folder of the folder tree. Predefined reports are organized into four subfolders. The type of reports in each subfolder are described below.

Administrative Reports

Report	Description
List Alert Definitions for Resources in a Group	Lists the alert definitions for all of the resources in an HQ group.
List Platform Hierarchy and Metrics Configuration	Shows name and type information for a Platform, all Servers on that Platform, and all Services on those Servers. For each resource it contains a sub-table showing all measurements defined for that resource type and indicates which ones are currently enabled on that resource.
Find Resources Not Reporting Metrics	Resources that have stopped publishing metrics, plus the last time a metric was recorded for the resource
Find Unconfigured Resources Without Metric Collection Schedules	Resources that don't have metric collection enabled in HQ.

Inventory Reports

Report	Description
List Group Resources	Lists the the resources defined in a resource group defined in HQ. If a group contains a group, it recursively descends into the nested groups.
Review New Inventory	Lists the new resources added to HQ inventory within a specified interval.
View Platforms Running Selected Technology	Lists the hierarchy of Platforms, Servers and Services where a specified technology is installed.

Problem Analysis Reports

Report	Description
List Alert Responses for Resources in a Group	Lists actions performed for alerts generated by resources in the selected group, and the elapsed time for each action or alert, over an specified interval.
List Alerts for a Selected Resource	List alerts generated by a selected resource over an specified interval..

Report	Description
List Alert Response Times for Resources in a Group	
Summarize Alerts for Resources in a Group	Summarizes alerts for a resources in a group over a specified interval.
Summarize Alerts for Resource Type	Summarize alerts by resource type over a specified interval.
Chart Selected Platform Metrics	Charts selected metrics for selected platforms over a specified interval, one chart per metric.
Stack Platform Metric Values in Chart	Presents a stacked view of selected metric data for a specific platform type over a specified interval.

SLA Reports

Report	Description
Calculate Downtime for Resources in a Group	Availability percentage and minutes of downtime, over a specified interval, for resources in a user-specified group. This report cannot be run against the entire environment.
View Group Resources Availability Gauges	Displays a grid of gauges, one gauge per system in the group. For each system the gauge shows the availability as a percentage of the total time. Each gauge can be clicked on for a detailed report showing all the up and down periods for the specified resource.
View Detailed Availability of Resource	Shows a detailed tabular listing of all up and down periods for a specified resource. This is the detail report linked from the Availability Of Resources In Group report, made available on its own. For each up/down period the duration is calculated, and down periods are displayed on a red background.

Trend Analysis and Capacity Planning Reports

Report	Description
Compare Two Aggregated Metrics Values for All Resources	Overlay average, minimum, or maximum metric values for two metrics for all resources over a specified interval.
Compare Two Aggregated Metrics Values for All Resources in a Group	Overlay average, minimum, or maximum metric values for two metrics for all resources with a group over a specified interval.

Report	Description
Compare Two Metric Values for All Resources	Overlay metric values for two metrics for all resources over a specified interval.
Chart Selected Metrics for Resources in an Application	Shows graphs of measurements for selected metrics over a specified time period. For each selected metric you get a line chart, showing the collected measurements for application resources with at least one measured value for that metric over the time period. The legend of the chart allows you to drill down to a resource inside of HQ.
Chart Selected Metrics for Resources in a Group	Identical to Chart Selected Metrics for Resources in an Application but allows the user to filter by Resource Group.
Stacked Chart of a Metric for All Resources	Shows a stacked area chart showing the comparative measured values of a single measurement for all resources collecting that metric. The chart and the legend link to the resource page in HQ.
Stacked Chart of a Metric for Resources in an Application	Identical to Stacked Chart of a Metric for All Resources but allows the user to filter by Application.
Stacked Chart of a Metric for Resources in an Application	Identical to Stacked Chart of a Metric for All Resources but allows the user to filter by Resource Group.
Rank Resources in a Group by Selected Metric Value	Chart and list the resources in a group that have the highest or lowest value of a selected metric over a selected interval.
Rank Resources by Selected Metric Value	Chart and list resources that have the highest or lowest value of a selected metric over a selected interval.

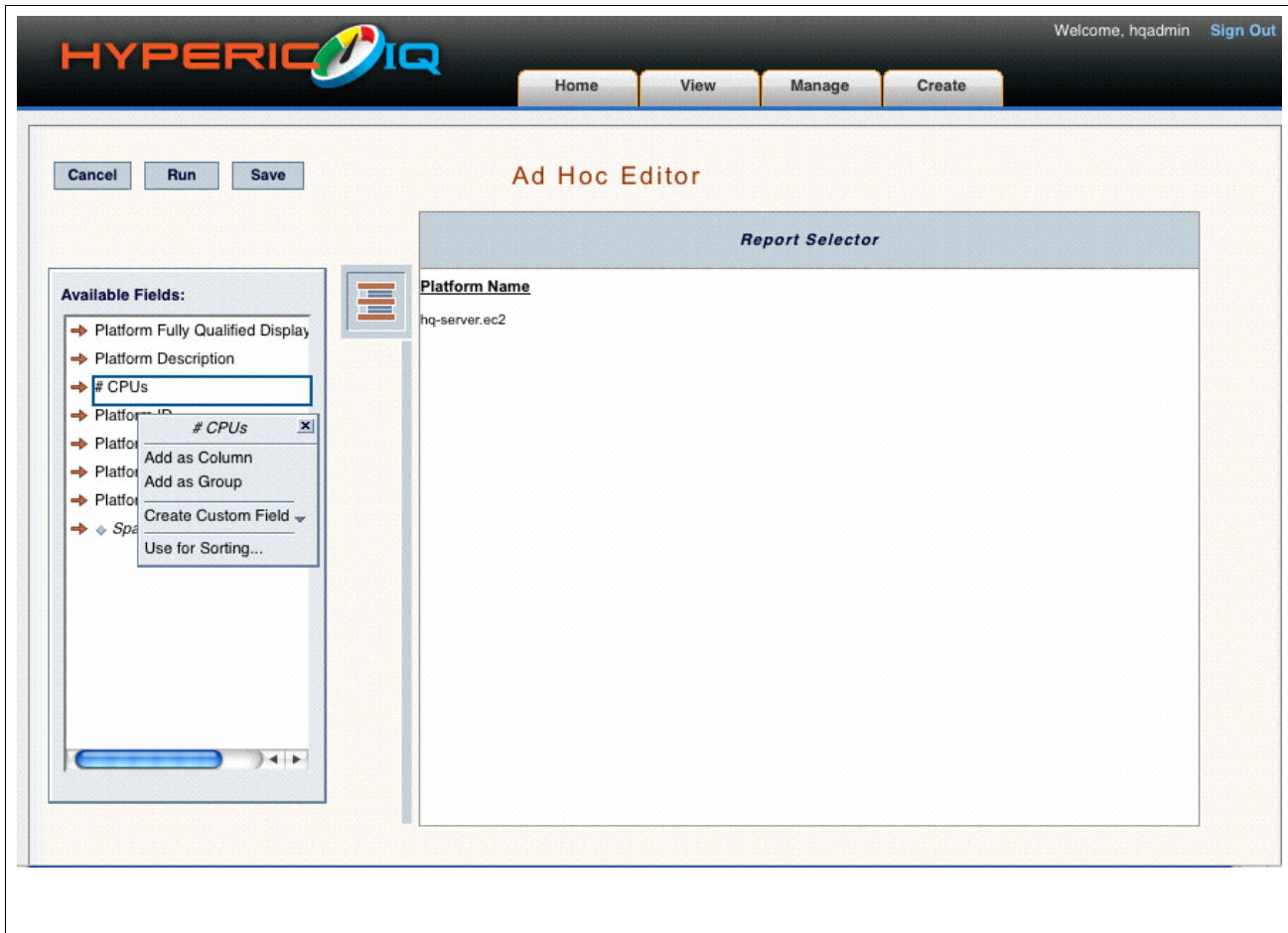
Ad Hoc Editor: Drag-and-Drop Report Design

Hyperic IQ's Ad Hoc Query Editor provides a drag and drop method for building your own tabular, cross-tab, bar chart, pie chart, line chart, and area chart reports. You can create reports using the Ad Hoc Query Editor without knowledge of the table structure of the HQ database.

You build a report by dragging data types from predefined *Topics* into your report. Topics are objects that can return one or more of a set of related data items from the HQ database. There are topics that return the following types of information:

- Inventory - Data about the platforms, servers, and services under HQ management
- Measurements - Actual values of the metrics collected for each resource under management
- Alerts - Alerts that have been triggered, actions taken for triggered alerts, and related performance indicators, for example, elapsed time to respond to and resolve triggered alerts.

In the screen shot below, the Available Fields panel shows the data items in the "Platform" Topic. The report author has dragged the Platform Name field into the body of the report. Platform Name appears as a heading, and the names of all platforms in inventory automatically appear in the report.



Advanced Report Development with iReport and Hyperic RDL

Hyperic IQ's predefined reports, described in the previous section, were created using JasperSoft iReport. iReport is a graphical report tool for report designers, developers, and power-users. With iReport, a developer can build reports that leverage all of the capabilities of JasperServer, including complex reports, and a broad selection of chart types. iReport provides tools such as query builders, expression builders, and support for advanced formatting.

You can use iReport v3.0.0 to develop complex reports. Hyperic Reporting Definition Language (RDL) provides an easy, secure way to access the contents of the HQ database in reports you design yourself using JasperSoft's iReport tool. You do not have to have a deep understanding of the HQ database schema to use Hyperic RDL for building queries and reports.

For more information on iReport, see <http://www.jaspersoft.com>.

For more information on Hyperic Reporting Definition Language (RDL), see *Hyperic Operations IQ Reference Guide*.