



Build Your Own CIO Dashboard

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Quest™

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Course Objectives

- During this course we will cover:
 - Drag and drop analytics views step by step
 - Build CIO Dashboard step by step



What is WCF

- WCF stands for Web Console Framework
- Can be very easy (Drag and Drop)
- Can be very powerful and flexible
 - Many Components to choose
 - Kinds of Renderers for rendering
 - Support Java/Groovy to do anything
 - Easy to bind Monitoring Data Model
 - ...

Environment Setup

Quest



Get Resources

- Get Foglight installed and running
- Get and install cartridges
 - Topology-Helper-Tools-5_6_2.car
 - CIO-Dashboard-Get-Started-1_0_0.car
 - The cartridges can be found at Github:
https://github.com/Foglight/DevCamp2018/tree/master/CIO_Dashboard/Tools

Assign Cartridge Developer Role

The image shows a two-step process for assigning a role in the Quest User Management interface.

Step 1: Users & Security Management Dashboard

- The **Navigation** sidebar on the left has **Users & Security** highlighted with a red box.
- The main content area shows the **Users & Security Management** dashboard.
- The **Manage Users, Groups, Roles** section is highlighted with a red box. It displays summary statistics: 1 user (0 managed by Admin), 4 groups (0 managed by Admin), and 14 roles.
- An orange arrow points from this section to the next screenshot.

Step 2: User Management - Roles Tab

- The **Roles** tab is selected at the top.
- A table lists existing roles. The entry **Take on 9 roles** is highlighted with a red box.
- An orange arrow points from this entry to a modal window.
- The modal window, titled **Role Names**, shows a list of available roles. The **Cartridge Developer** role is highlighted with a red box.
- Buttons for **Save** and **Cancel** are at the bottom of the modal.

Data Preparation

Quest



Simulate Hosts

- Generally, hosts are monitored by IC agents. In this case, we simulate some for simplicity.
- Run function Simulate Hosts under module CIO Dashboard.

Host Location Setup

- Host location setup through Administration -> Tooling -> Location dashboard.
- Location data is used in Hosts Map Topology view in later section.

The screenshot displays the Quest Security console's 'Location' dashboard. On the left, a navigation pane shows the path: Administration > Tooling > Location. The main area features a table of hosts with columns for Name, Longitude, Latitude, and Current Location. The table lists various hosts such as app-1, app-2, web-5, app-5, app-6, db-4, db-4, web-7, app-3, db-2, db-3, web-2, web-3, app-7, app-8, db-1, web-1, and web-4. The 'Current Location' column shows locations like Aliso Viejo, United States; Amphoe Sikhiu, Thailand; Beijing, China; New Badah, Pakistan; New York City, United States; and Zhuhai, China. On the right, there is a 'Move In' button, a 'Move Out' button, and a 'Reset' button. Below these buttons, there is a form for 'Location Name', 'Longitude', and 'Latitude', with 'Clear' and 'Set Location' buttons.

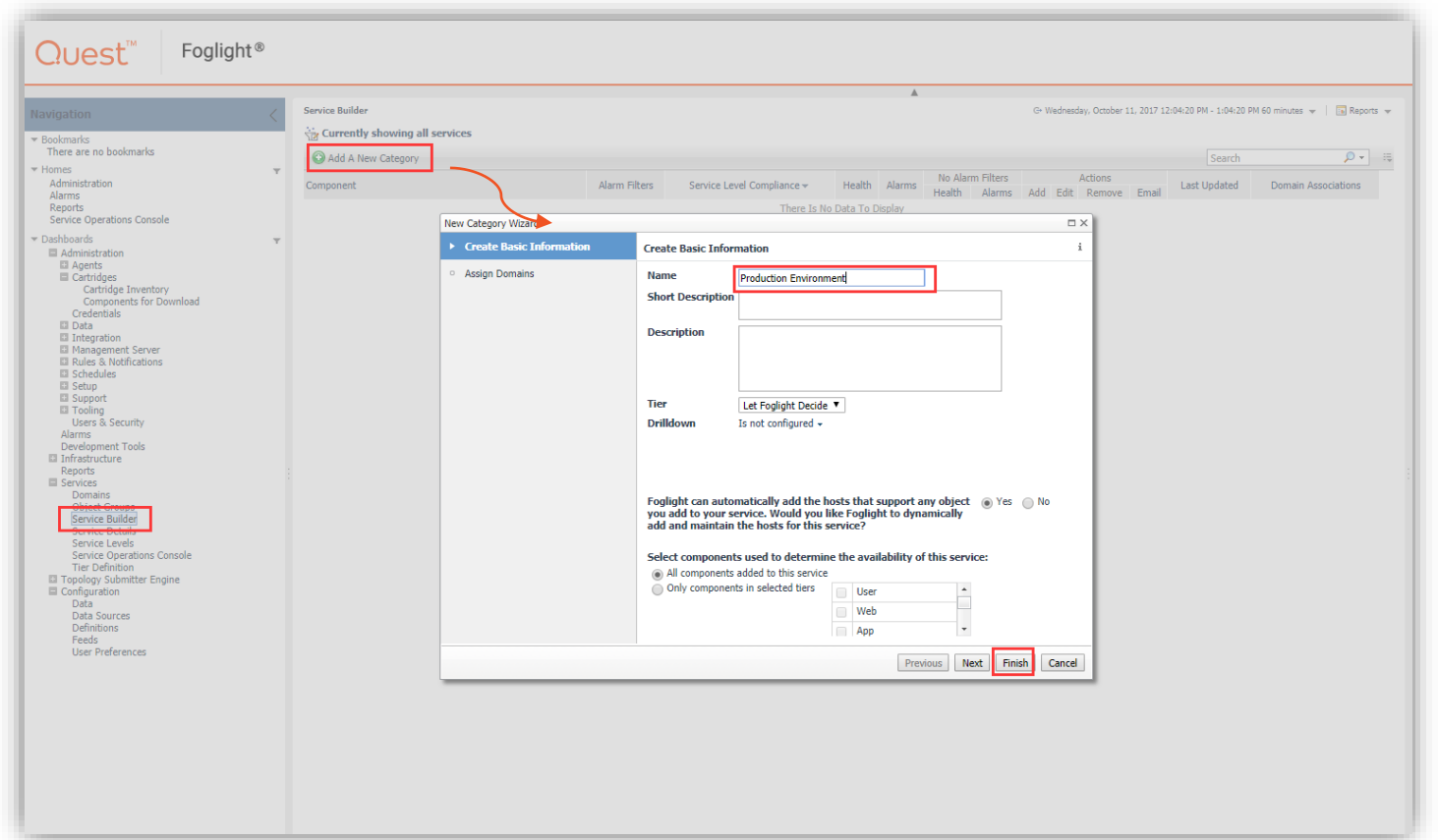
| Name | Longitude | Latitude | Current Location |
|-------|-----------|----------|------------------------------|
| app-1 | -117.7 | 34 | Aliso Viejo, United States |
| app-2 | -117.7 | 34 | Aliso Viejo, United States |
| web-5 | -117.7 | 34 | Aliso Viejo, United States |
| app-5 | 102 | 15 | Amphoe Sikhiu, Thailand |
| app-6 | 102 | 15 | Amphoe Sikhiu, Thailand |
| db-4 | 102 | 15 | Amphoe Sikhiu, Thailand |
| db-4 | 102 | 15 | Amphoe Sikhiu, Thailand |
| web-7 | 102 | 15 | Amphoe Sikhiu, Thailand |
| app-3 | 116 | 40 | Beijing, China |
| db-2 | 116 | 40 | Beijing, China |
| db-3 | 116 | 40 | Beijing, China |
| web-2 | 116 | 40 | Beijing, China |
| web-3 | 116 | 40 | Beijing, China |
| app-7 | 68 | 27 | New Badah, Pakistan |
| app-8 | 68 | 27 | New Badah, Pakistan |
| db-1 | 68 | 27 | New Badah, Pakistan |
| app-4 | -74.0 | 41 | New York City, United States |
| db-3 | -74.0 | 41 | New York City, United States |
| web-6 | -74.0 | 41 | New York City, United States |
| db-1 | 114 | 22 | Zhuhai, China |
| web-1 | 114 | 22 | Zhuhai, China |
| web-4 | 114 | 22 | Zhuhai, China |

Build Services

- Services can be added manually through dashboard Services -> Service Builder.
- Alternatively for this case, we can run script to build the services to save time.
 - Function Create Service Category Automatically under CIO Dashboard.

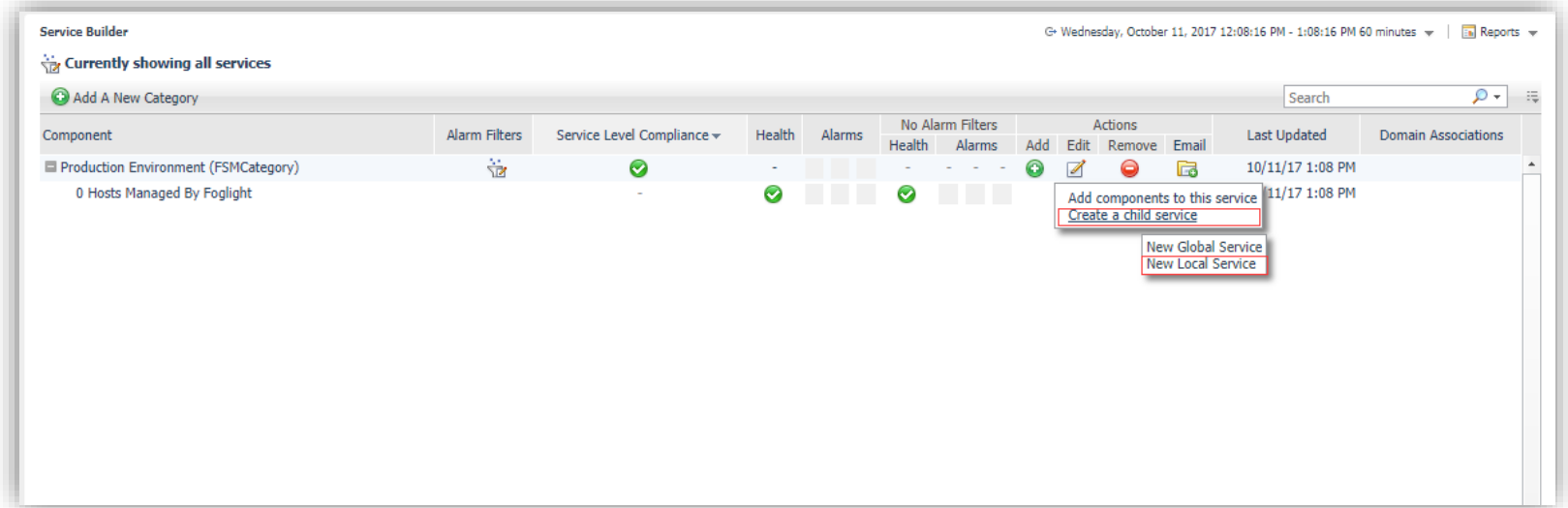
Add a Category

- Add a Service Category named “*Production Environment*”



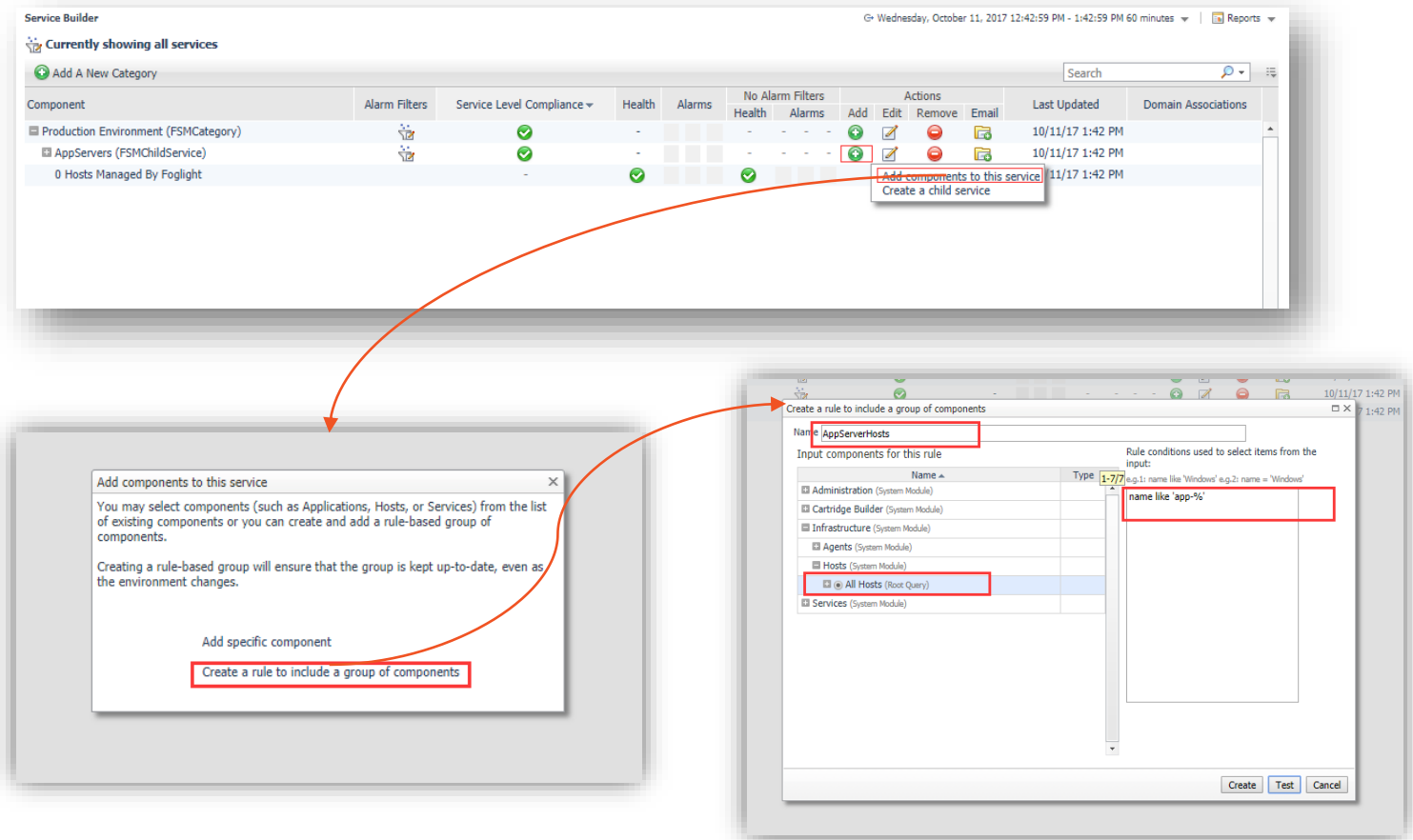
Add Child Services

- WebServers
- LoadBalancerServers
- AppServers
- DatabaseServers



Add Child Service Components

- WebServers
 - name like 'web-%'
- LoadBalancerServers
 - name like 'lb-%'
- AppServers
 - name like 'app-%'
- DatabaseServers
 - name like 'db-%'



The Category Overview

Service Builder

Currently showing all services

+ Add A New Category

Search

| Component | Alarm Filters | Service Level Compliance | Health | Alarms | No Alarm Filters | | Actions | | | | Last Updated | Domain Associations |
|--|---------------|--------------------------|--------|--------|------------------|--------|---------|------|--------|-------|------------------|---------------------|
| | | | | | Health | Alarms | Add | Edit | Remove | Email | | |
| Production Environment (FSMCategory) | | | - | 23 | - | - | | | | | 10/11/17 2:03 PM | |
| LoadBalancerServers (FSMChildService) | | | - | 4 | - | - | | | | | 10/11/17 2:03 PM | |
| LoadBalancerServerHosts (FSMDynamicManagedComponent) | | - | | 4 | | 4 | | | | | 10/11/17 2:03 PM | |
| 4 Hosts Managed By Foglight | | - | | 4 | | 4 | | | | | 10/11/17 2:03 PM | |
| WebServers (FSMChildService) | | | - | 7 | - | - | | | | | 10/11/17 1:59 PM | |
| WebServerHosts (FSMDynamicManagedComponent) | | - | | 7 | | 7 | | | | | 10/11/17 1:59 PM | |
| 7 Hosts Managed By Foglight | | - | | 7 | | 7 | | | | | 10/11/17 1:59 PM | |
| AppServers (FSMChildService) | | | - | 8 | - | - | | | | | 10/11/17 1:57 PM | |
| AppServerHosts (FSMDynamicManagedComponent) | | - | | 8 | | 8 | | | | | 10/11/17 1:57 PM | |
| 8 Hosts Managed By Foglight | | - | | 8 | | 8 | | | | | 10/11/17 1:57 PM | |
| DatabaseServers (FSMChildService) | | | - | 4 | - | - | | | | | 10/11/17 2:04 PM | |
| DatabaseServerHosts (FSMDynamicManagedComponent) | | - | | 4 | | 4 | | | | | 10/11/17 2:04 PM | |
| 4 Hosts Managed By Foglight | | - | | 4 | | | | | | | 10/11/17 2:04 PM | |
| 0 Hosts Managed By Foglight | | - | | | | | | | | | 10/11/17 2:03 PM | |

Drag and Drop Analytics Views

Quest



Drag and Drop Analytics Views

- Demonstration
- Step by step blog
 - [Foglight 5.9.3 What is New! - Analytics View in Custom Dashboards](#)

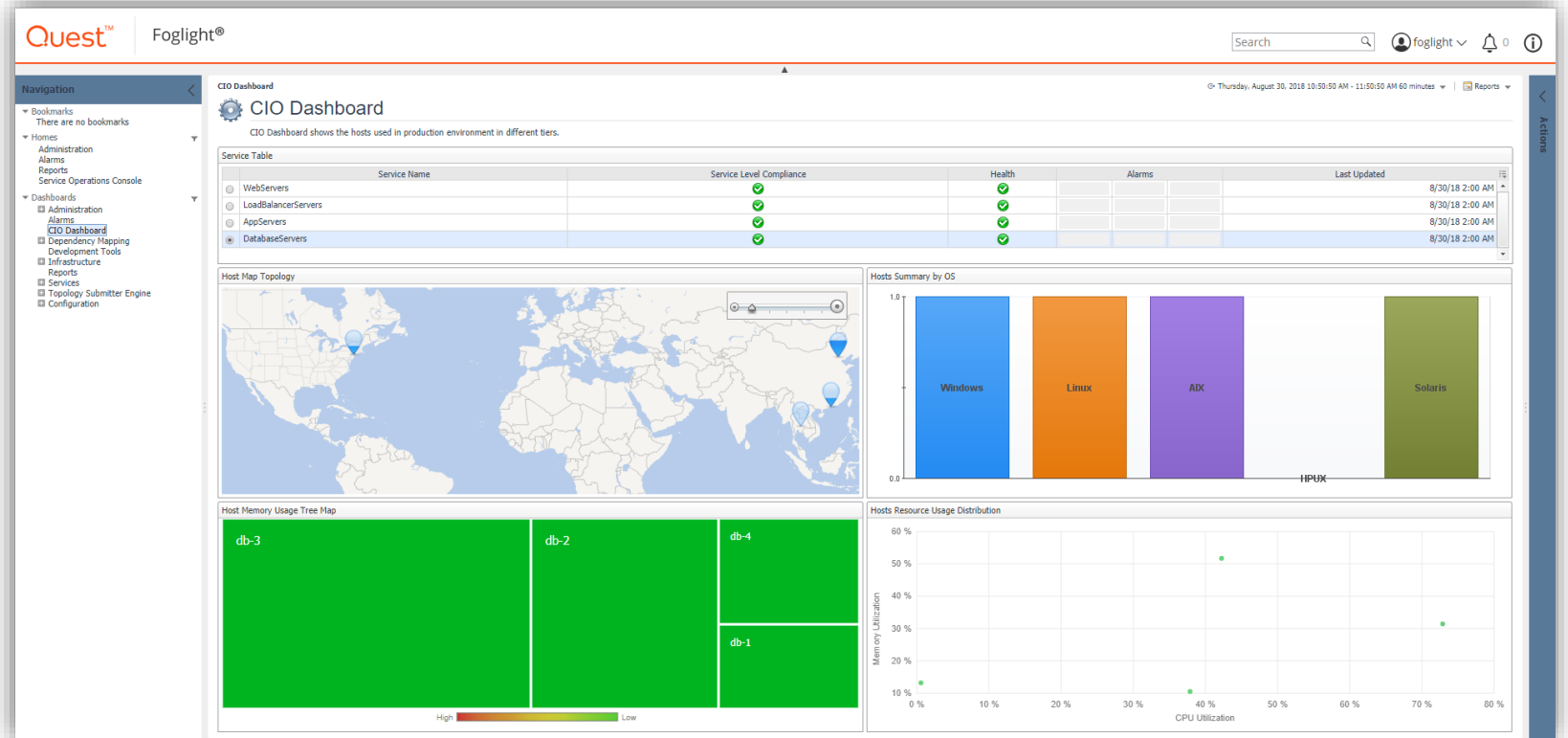
Build CIO Dashboard

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Use Case

- Assume we have many hosts that have different applications running on.
- The applications belong to different tiers, Web, Database, App, etc.
- We want to know the health for each tier.
- Each tier is a service contains the hosts.

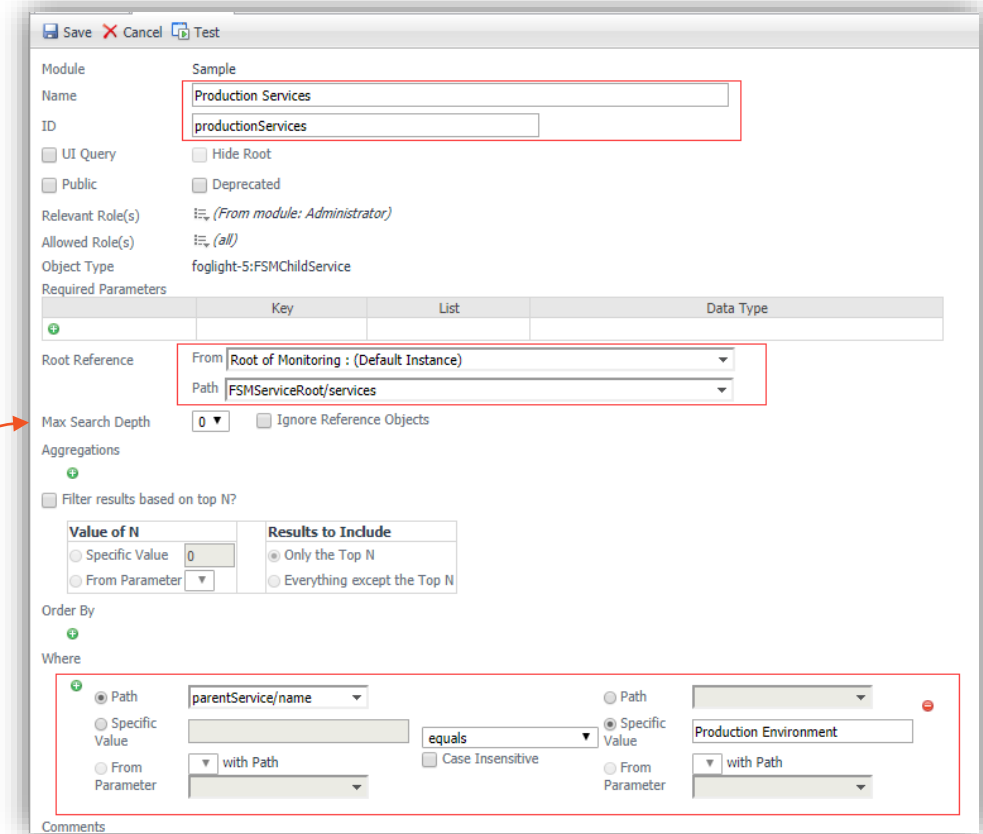
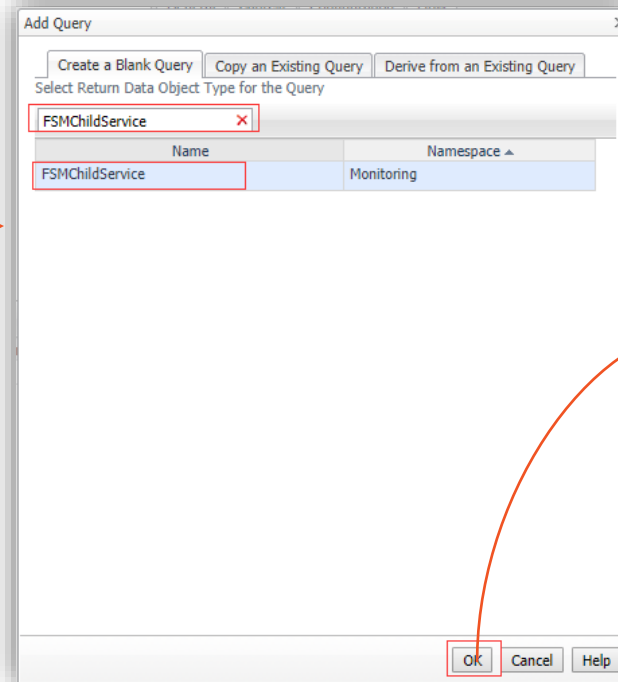
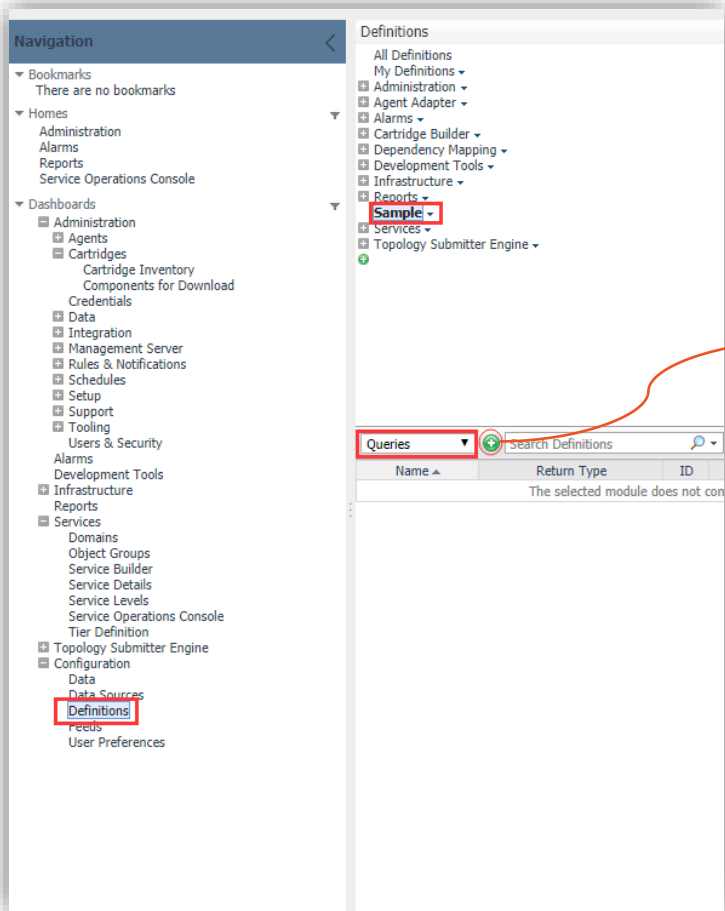


Create Service Table

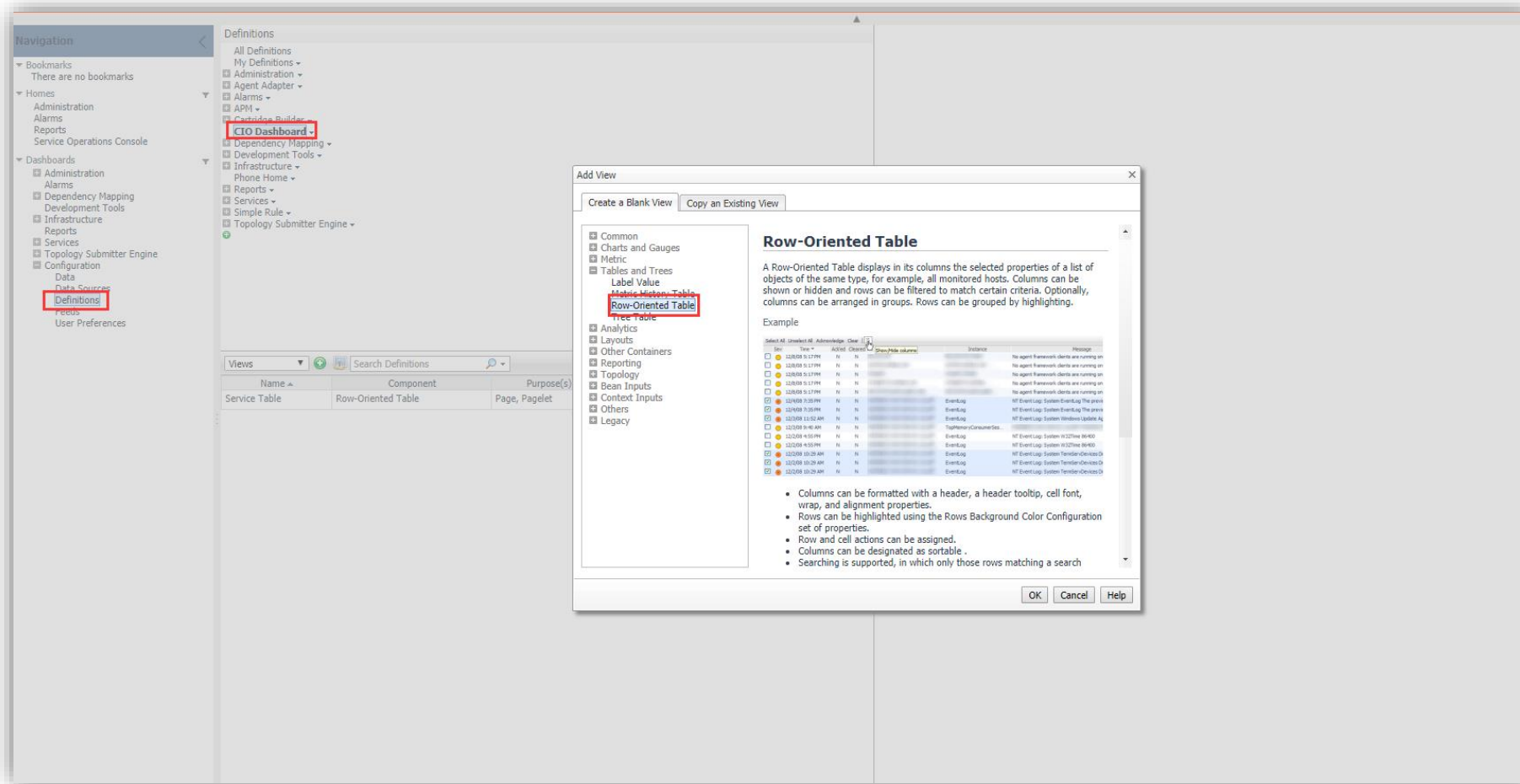
Service Table Preview

| Service Table | | | | | | |
|---|--------------------------|--------|--------|--|--------------|------------------|
| G+ Wednesday, October 11, 2017 3:43:37 PM - 4:43:37 PM 60 minutes Reports | | | | | | |
| Service Name | Service Level Compliance | Health | Alarms | | Last Updated | |
| AppServers | ✖ | ✖ | 8 | | | 10/11/17 1:57 PM |
| WebServers | ✖ | ✖ | 7 | | | 10/11/17 1:59 PM |
| LoadBalancerServers | ✖ | ✖ | 4 | | | 10/11/17 2:03 PM |
| DatabaseServers | ✖ | ✖ | 4 | | | 10/11/17 2:04 PM |

Add a Query



Add a Row-Oriented Table



General Setup for Table

The screenshot shows a 'New View' configuration window with tabs for 'General', 'Context', 'Configuration', and 'Flow'. The 'General' tab is active. The 'Module' is 'Sample' and the 'Component' is 'Row-Oriented Table'. The 'Name' is 'Service Table' and the 'ID' is 'serviceTable'. The 'Public' checkbox is unchecked, 'Deprecated' is unchecked, 'Refresh Interval' is empty, and 'Priority' is 'None'. The 'Purpose(s)' field is set to 'Page, Pagelet'. A modal dialog is open over the 'Purpose(s)' field, showing a list of custom purposes with checkboxes. In this dialog, 'Page' and 'Pagelet' are checked, while all other options are unchecked. The dialog has 'Apply' and 'Cancel' buttons at the bottom right. Below the modal, there are fields for 'Relevant Role(s)', 'Allowed Role(s)', 'Comments', and 'Context Help'.

Production Category X New View X

Save X Cancel Test Config Wizard

General Context Configuration Flow

Module Sample

Component Row-Oriented Table

Name Service Table

ID serviceTable

Public ☐

Deprecated ☐

Refresh Interval second(s)

Priority None ▼

Purpose(s) Page, Pagelet

Custom Purpose(s)

| | | | | |
|--|---|----------------------------------|----------------------------------|--|
| <input type="checkbox"/> Dashboard | <input checked="" type="checkbox"/> Page | <input type="checkbox"/> Summary | <input type="checkbox"/> Portal | <input type="checkbox"/> Report |
| <input type="checkbox"/> Home Page | <input checked="" type="checkbox"/> Pagelet | <input type="checkbox"/> Menu | <input type="checkbox"/> Portlet | <input type="checkbox"/> Reportlet |
| <input type="checkbox"/> Monitor | <input type="checkbox"/> Diagnostic | <input type="checkbox"/> Dialog | <input type="checkbox"/> Feed | <input type="checkbox"/> Global Action |
| <input type="checkbox"/> Standard View | | | | <input type="checkbox"/> Data View |

Apply Cancel

Relevant Role(s)

Allowed Role(s)

Comments

Context Help

Context Setup for Table

Production Category X New View X

Save Cancel Test Config Wizard

General Context Configuration Flow

Inputs

| Key | Name | Usage | List | Data Type | Fallback Value |
|-----------|-----------|----------|-------|-------------------|----------------|
| timeRange | (not set) | Required | False | Common:Time Range | |

Primary Input Unspecified

Additional

| Key | Name | Evaluate Once | Value |
|----------|-----------|--------------------------|-------|
| services | (not set) | <input type="checkbox"/> | |

Set to Binding
Set to Value

- Context
- Query
- Localized String
- Function
- Icon
- Theme
- List
- Writable Data Object
- String Template
- Rich Text Template
- Data

Edit - Context Entry "services"

Query Binding

Query

Path

Time Range to Use

Return First Object in List

On Null

| Name | Return Type |
|---------------------|------------------------|
| Administration | |
| Alarms | |
| Cartridge Builder | |
| Development Tools | |
| Infrastructure | |
| Reports | |
| Sample | |
| Production Category | Monitoring:FSMCategory |
| Services | |
| Legacy Custom | |

Set Cancel

Configurations for Table

- Configure Rows
- Configure Columns
 - ID
 - Value
 - Header
 - Localized String is recommended

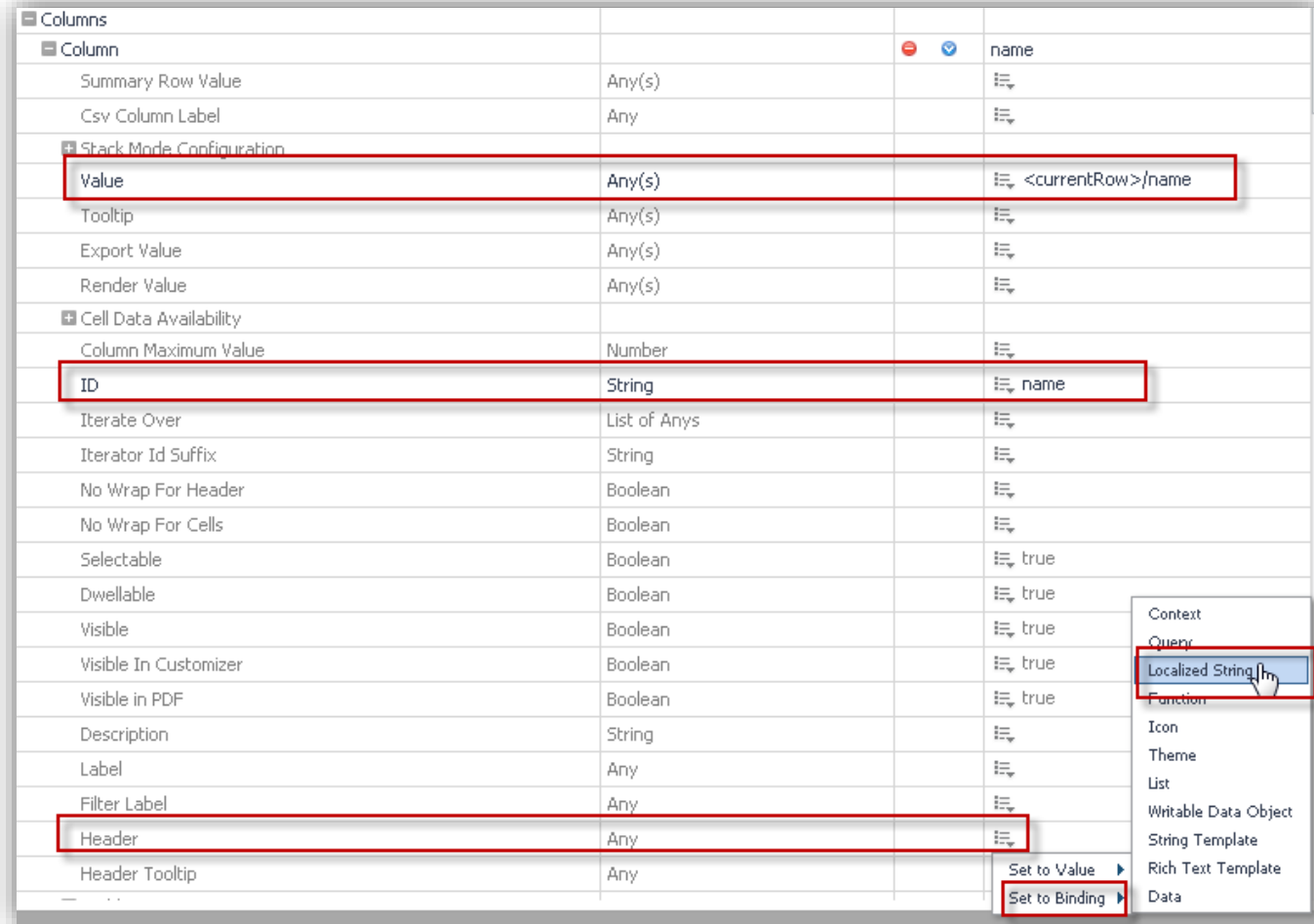


Table Column Configurations

- Name
 - Value: name
 - Id: name
 - Header: Service Name
- Service Level Compliance
 - Value: aggregateStateSeverity
 - Id: SLAState
 - Header: Service Level Compliance
- FatalCount
 - Value: alarmAggregateFatalCount
 - Id: fatalCount
- CriticalCount
 - Value: alarmAggregateCriticalCount
 - Id: criticalCount
- WarningCount
 - Value: alarmAggregateWarningCount
 - Id: warningCount
- Health
 - Value: aggregateState
 - Id: health
 - Header: Health
- Last Updated
 - Value: lastUpdated
 - Id: lastUpdated
 - Header: Last Updated

Test Service Table

Production Services x | New View x

Save x Cancel Test Config Wizard

General Context Configuration Flow

☒ Show Advanced Properties Legend: Set | Unset | Required

| Property | Type | Value |
|---|----------------------|------------|
| Rows | List of Anys | <services> |
| <input checked="" type="checkbox"/> Stack Mode Configuration | | |
| Is Row Selectable | Boolean | true |
| <input checked="" type="checkbox"/> Selector Column Configuration | | |
| <input checked="" type="checkbox"/> Tagging Column Configuration | | |
| <input checked="" type="checkbox"/> Sorted Cells Grouping | | |
| Summary Row Position | Summary Row Position | Bottom |
| Include Only Selected Elements In All Time Computation | Boolean | false |
| is Drag Source | Boolean | false |
| Is Row Draggable | Boolean | true |

Input Values

Time Range: Last hour

Results Cancel

| | |
|---------------|--|
| name | |
| SLAState | |
| alarmCount | |
| criticalCount | |
| warningCount | |
| health | |
| lastUpdated | |

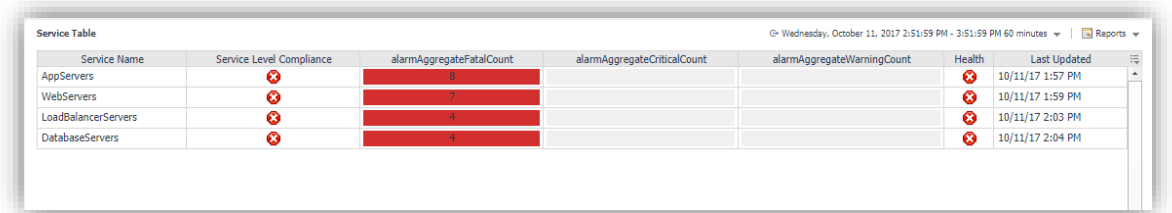
Service Table

Wednesday, October 11, 2017 2:51:59 PM - 3:51:59 PM 60 minutes Reports

| Service Name | Service Level Compliance | alarmAggregateFatalCount | alarmAggregateCriticalCount | alarmAggregateWarningCount | Health | Last Updated |
|---------------------|--------------------------|--------------------------|-----------------------------|----------------------------|--------|------------------|
| AppServers | | | | | | 10/11/17 1:57 PM |
| WebServers | | | | | | 10/11/17 1:59 PM |
| LoadBalancerServers | | | | | | 10/11/17 2:03 PM |
| DatabaseServers | | | | | | 10/11/17 2:04 PM |

Improve Service Table

- Add alignment for some column
- Group fataCount, criticalCount and warningCount as “Alarm”
- Change column order
- Add single row action(name: selectedService)



Service Table

Wednesday, October 11, 2017 2:51:59 PM - 3:51:59 PM 60 minutes | Reports

| Service Name | Service Level Compliance | alarmAggregateFatalCount | alarmAggregateCriticalCount | alarmAggregateWarningCount | Health | Last Updated |
|---------------------|--------------------------|--------------------------|-----------------------------|----------------------------|--------|------------------|
| AppServers | ✖ | 8 | | | ✖ | 10/11/17 1:57 PM |
| WebServers | ✖ | 7 | | | ✖ | 10/11/17 1:59 PM |
| LoadBalancerServers | ✖ | 4 | | | ✖ | 10/11/17 2:03 PM |
| DatabaseServers | ✖ | 4 | | | ✖ | 10/11/17 2:04 PM |

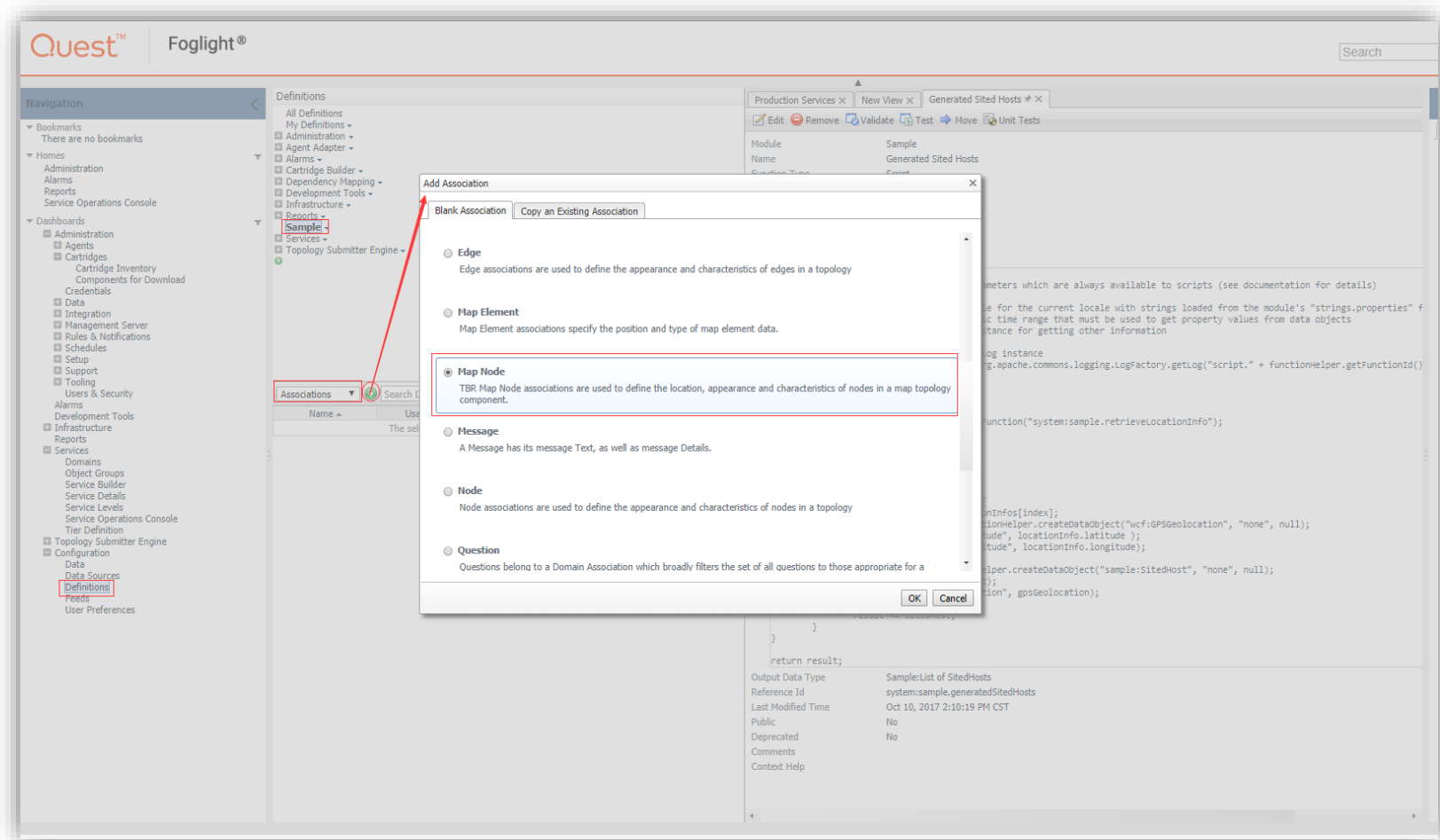
Add Hosts Map

Hosts Map Preview



Add a Map Node Association

- Map Node Association
 - Used to provide latitude, longitude and value for each Host associated with Map Topology Component.



Configure Map Node Association

- Add a context with name “*currentNode*”, this is a convention.
- Bind the function to generate location by Host.
 - Function Generate Location Object is available in CIO-Dashboard-Get-Started-1_0_0.car
- Specify the tag. Tag is used to build the relationship with Map Topology.

Host Map Node ✱ ✕

Edit Remove Validate Move

Module CIO Dashboard
Name Host Map Node
Usage Map Node
Reference Id system:sample.65
Last Modified Time Aug 31, 2018 3:27:20 PM CST
Public No
Deprecated No
Comments
Context Help

Context Inputs

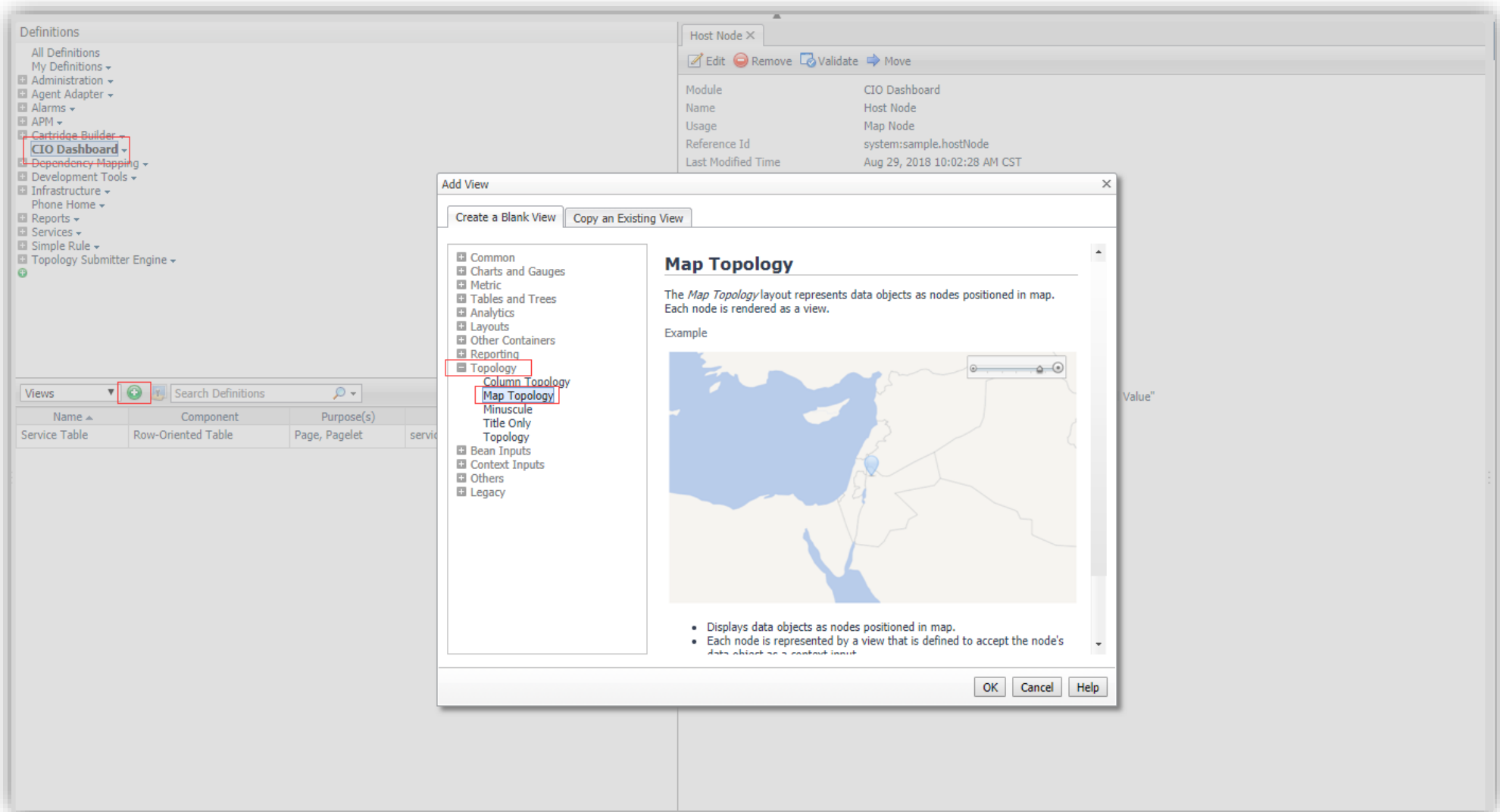
| Key | Name | Usage | Data Type | Fallback Value |
|-------------|------|----------|-------------------|----------------|
| timeRange | | Required | Common:Time Range | |
| currentNode | | Required | Monitoring:Host | |

Primary Input currentNode

Configuration

- Location Function (Generate Location Object)
 - {host} Context <currentNode> returning "Localized Value"
- Tags
 - hosts

Add a Map Topology



Configure the Map Topology

- Add context “*hosts*” as Input
- Bind context “*hosts*” as Node List
- Specify the tag which is the same with *Map Node Association*.

The screenshot shows the configuration window for the 'Host Map Topology' module. The window has a toolbar with 'Edit', 'Remove', 'Validate', 'Test', 'Move', and 'Copy' buttons. The configuration details are as follows:

| Key | Name | Usage | Data Type | Fallback Value |
|-----------|------|----------|--------------------------|----------------|
| timeRange | | Required | Common:Time Range | |
| hosts | | Required | Monitoring:List of Hosts | |

Primary Input: hosts

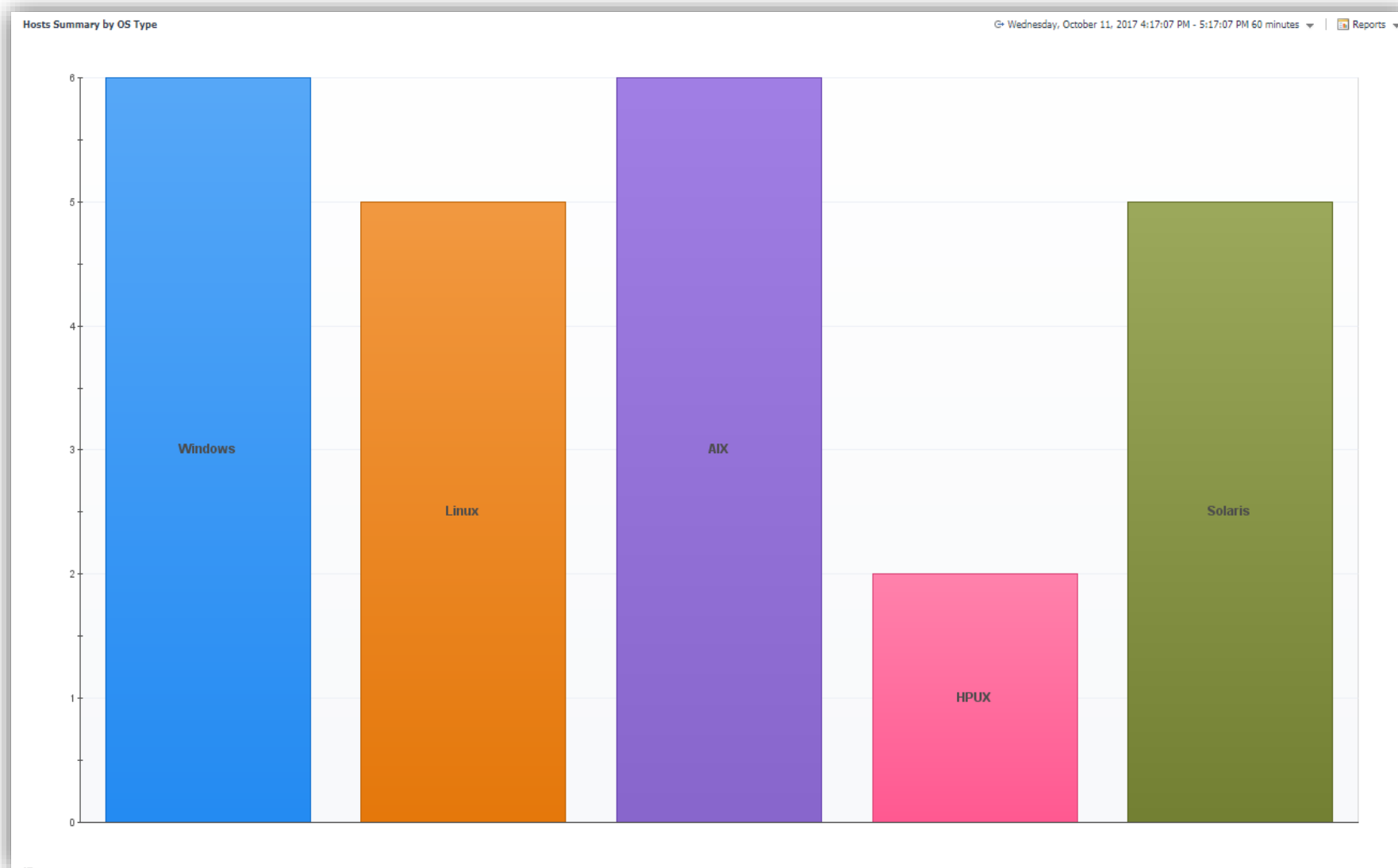
Configuration:

- All Nodes
 - Node List
 - Nodes Context <hosts> returning "Localized Value"
- Tags [hosts]

Reference Id: system:sample.hostMapTopology
Last Modified Time: Aug 29, 2018 2:13:42 PM CST
Public: No
Deprecated: No
Priority: None
Relevant Role(s): (From module: Administrator)
Allowed Role(s): (all)

Add Hosts by OS Type Bar Chart

Hosts by OS Type Bar Chart Preview



Add a Bar or Pie Chart

Definitions

- All Definitions
- My Definitions
- Administration
- Agent Adapter
- Alarms
- APM
- Cartridge Builder
- CIO Dashboard**
- Dependency Mapping
- Development Tools
- Infrastructure
- Phone Home
- Reports
- Services
- Simple Rule
- Topology Submitter Engine

Views

| Name | Component | Purpose(s) | hostM |
|-------------------|--------------------|---------------|---------|
| Host Map Topology | Map Topology | Page, Pagelet | hostM |
| Service Table | Row-Oriented Table | Page, Pagelet | service |

Host Node X Host Map Topology X Generate Location Object X Group Host By OS Type X

Edit Remove Validate Test Move Unit Tests

Module CIO Dashboard

Name Group Host By OS Type

Function Type Script

Converter No

Cache Results Yes

Add View

Create a Blank View Copy an Existing View

Common

- Charts and Gauges
 - Bar Gauge
 - Bar or Pie Chart**
 - Circular Gauge
 - Cluster Bar Chart
 - High/Low Bar Chart
 - Time Bar Chart
 - Time Plot Chart
- Metric
- Tables and Trees
- Analytics
- Layouts
- Other Containers
- Reporting
- Topology
- Bean Inputs
- Context Inputs
- Others
- Legacy

Bar or Pie Chart

The Bar or Pie Chart component graphs data items as a bar chart (with each bar representing one item), a stacking bar, or a pie chart.

Example

All Alarms Breakdown by Agents Oct 7, 2008 11:45:20 AM EDT

| Agent | Percentage relative to Total Alarms |
|-------------------------|-------------------------------------|
| TerminalServer_1@tor... | ~15% |
| AppMonitor_1@tor... | ~25% |
| Windows_System_1@tor... | ~60% |

Percentage of Alarms by Alar...

- Windows_System_1@tor...
- AppMonitor_1@tor...
- TerminalServer_1@tor...

- Use the Bar or Pie chart to show a visual representation of numeric values.
- A wide variety of forms can be configured.

OK Cancel Help

Configure the Bar or Pie Chart

- Add context “*hosts*” as Input.
- Add additional context “*groupedHosts*” to transform context “*hosts*”.
 - Function Group Host by OS Type is available in CIO-Dashboard-Get-Started-1_0_0.car
- Configure “*Chart Type*” to “*Bar*”.
- Configure “*Parent Items*” with additional context “*groupedHosts*”.

The screenshot shows the configuration window for a 'Bar or Pie Chart' component. The window has a toolbar with 'Edit', 'Remove', 'Validate', 'Test', 'Move', and 'Copy' buttons. The configuration is organized into several sections:

- Module:** CIO Dashboard
- Name:** Hosts Summary by OS
- Component:** Bar or Pie Chart
- Purpose(s):** Page, Pagelet
- Comments:**
- Context Inputs:** A table with columns 'Key', 'Name', 'Usage', 'Data Type', and 'Fallback Value'. It contains two rows: 'timeRange' (Required, Common:Time Range) and 'hosts' (Required, Monitoring:List of Hosts).
- Primary Input:** hosts
- Additional Context:** A table with columns 'Key', 'Name', 'Evaluate Once', and 'Value'. It contains one row: 'groupedHosts' (False, Function (Group Host By OS Type) with a sub-item '{hosts} Context <hosts> returning "Localized Value"').
- Configuration:**
 - General:** Chart Type Bar
 - Data:**
 - Parented Items:**
 - Parented Items Binding:**
 - Item Parents Context <groupedHosts> returning "Localized Value"
 - For Each Item Parent
 - Value Context <currentItemParent>/hosts returning "Count All"
 - Label Context <currentItemParent>/osType returning "Localized Value"
- Reference Id:** system:sample.hostsSummaryByOS
- Last Modified Time:** Aug 29, 2018 2:38:07 PM CST
- Public:** No
- Deprecated:** No
- Priority:** None
- Relevant Role(s):** (From module: Administrator)
- Allowed Role(s):** (all)

Add Host Memory Usage Tree Map

Host Memory Usage Tree Map Preview



Add a Tree Map Chart

The screenshot shows the Quest dashboard interface. On the left, the 'Definitions' pane lists various categories like 'All Definitions', 'My Definitions', 'Administration', 'Agent Adapter', 'Alarms', 'APM', 'Cartridge Builder', 'CIO Dashboard', 'Dependency Mapping', 'Development Tools', 'Infrastructure', 'Phone Home', 'Reports', 'Services', 'Simple Rule', and 'Topology Submitter Engine'. The 'CIO Dashboard' is highlighted. Below this, the 'Views' pane shows a table of existing views:

| Name | Component | Purpose(s) | hostMa |
|---------------------|--------------------|---------------|---------|
| Host Map Topology | Map Topology | Page, Pagelet | hostMa |
| Hosts Summary by OS | Bar or Pie Chart | Page, Pagelet | hostsS |
| Service Table | Row-Oriented Table | Page, Pagelet | service |

The 'Add View' dialog box is open, showing the 'Tree Map Chart' option selected under the 'Analytics' category. The dialog also displays a description of the chart and an example visualization.

Tree Map Chart

The *Tree Map* chart provides an overview of your data using nested rectangles with an area proportional to the dimension of the respective data.

Example

The example visualization shows a tree map chart with nested rectangles. The top row contains 'System10' (teal), 'biggus.richa...' (grey), and 'okle.do.ki' (purple). The bottom row contains 'system11' (teal), 'ncc1708.urt...' (purple), 'pizann...' (red), and 'system...' (red). The 'pizann...' rectangle is further subdivided into 'piccolo.f...' (orange) and 'quelzot' (orange).

Configure the Tree Map Chart

- Add context “*hosts*” as Input.
- Bind context “*hosts*” to *Object Root*.
- Configure following properties for each Host
 - Label: bind to host name
 - Size: bind to host total alarms count
 - Color: bind to public function Severity to Color
- Configure the visibility of Color Legend.

The screenshot shows the configuration window for a 'Tree Map Chart' within the 'CIO Dashboard' module. The chart is named 'Host Memory Usage Tree Map' and is intended for use on a 'Page, Pagelet'. The 'Context Inputs' table lists 'timeRange' and 'hosts', both as 'Required' inputs. The 'Primary Input' is set to 'hosts'. The 'Configuration' section includes several settings: 'Object Root Context' is set to '<hosts> returning "Localized Value"', 'Parent Data Type' is 'Monitoring:Host', 'Label Context' is '<currentNode>/name returning "Localized Value"', 'Size Context' is '<currentNode>/memory/utilization/current/average returning "Localized Value"', 'Color Function' is 'Severity to Color' (with a note about its location in the system module), and 'Color Legend' is set to 'Visible true'. The 'Reference Id' is 'system:sample.hostMemoryUsageTreeMap', and it was last modified on 'Aug 30, 2018 11:36:12 AM CST'. It is not public, deprecated, or a priority, and is relevant to the 'Administrator' role.

| Key | Name | Usage | Data Type | Fallback Value |
|-----------|------|----------|--------------------------|----------------|
| timeRange | | Required | Common:Time Range | |
| hosts | | Required | Monitoring:List of Hosts | |

Primary Input: hosts

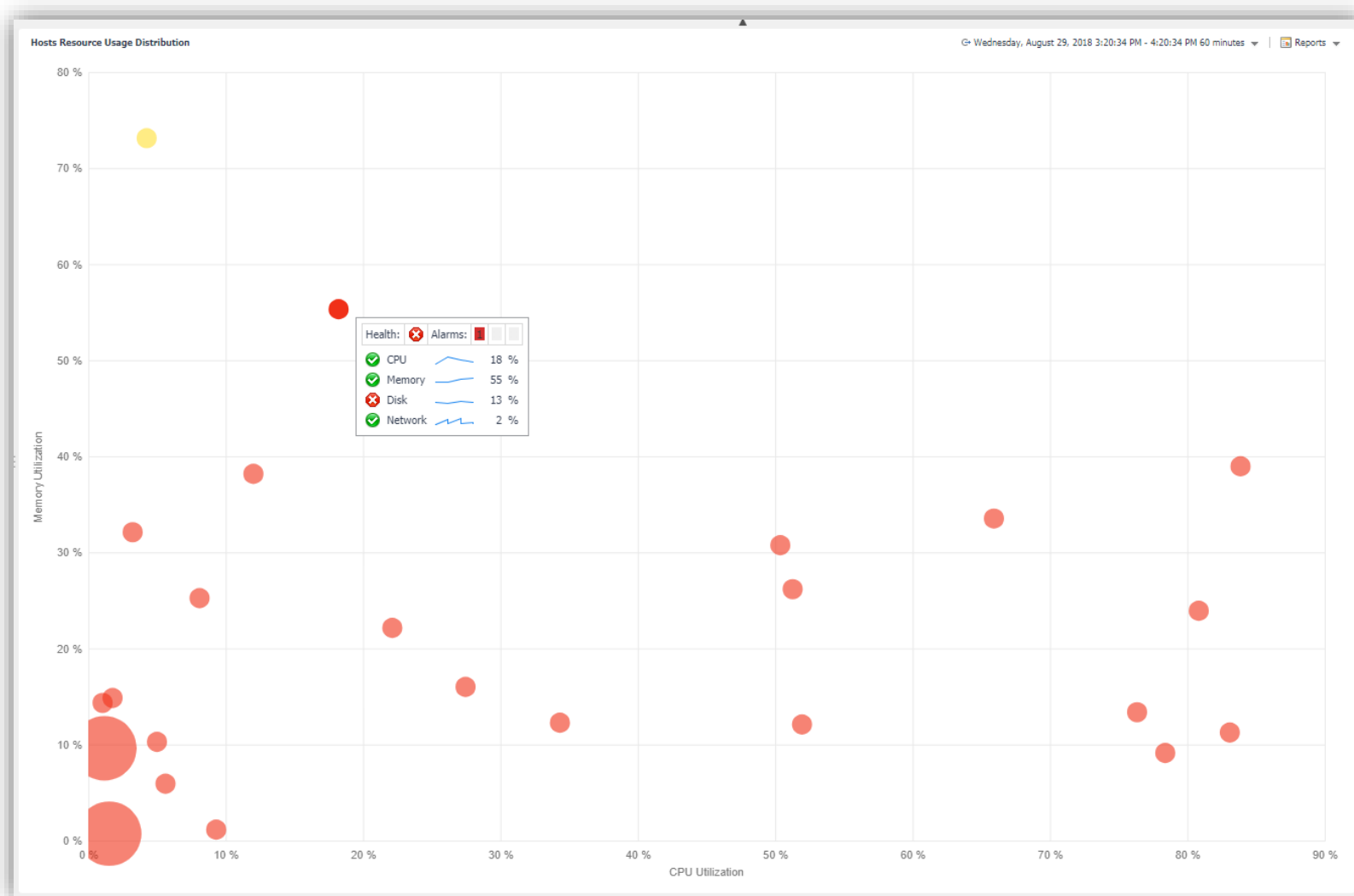
Configuration

- Object Root Context <hosts> returning "Localized Value"
- Parent Data Type
 - Data Type Monitoring:Host
 - Label Context <currentNode>/name returning "Localized Value"
 - Size Context <currentNode>/memory/utilization/current/average returning "Localized Value"
 - Color Function (Severity to Color from the System module Development Tools/Support/Monitoring)
 - {mapInput} Context <currentNode>/aggregateStateSeverity returning "Localized Value"
- Color Legend
 - Visible true

Reference Id: system:sample.hostMemoryUsageTreeMap
Last Modified Time: Aug 30, 2018 11:36:12 AM CST
Public: No
Deprecated: No
Priority: None
Relevant Role(s): (From module: Administrator)
Allowed Role(s): (all)

Add Hosts Resource Usage Bubble Chart

Hosts Resource Usage Distribution Preview



Add a Bubble Chart

The screenshot shows the Quest dashboard interface. In the background, the 'Definitions' pane on the left has 'CIO Dashboard' selected. The 'Views' table at the bottom lists various views, including 'Host Map Topology', 'Hosts Memory Usage Tree Map Chart', 'Hosts Summary by OS', and 'Service Table'. The 'Add View' dialog box is open in the foreground, showing the 'Create a Blank View' tab. The 'Analytics' category is selected, and 'Bubble Chart' is highlighted. The dialog provides a description of a bubble chart and an example titled 'Host CPU vs Memory vs Processes'.

Add View

Create a Blank View | Copy an Existing View

Bubble Chart

A Bubble chart is the variation of a Scatter Chart where data points are plotted with bubbles. Bubble charts would be a good choice if you have series of data where each of them have 3 related dimensions. You will need the following to present your data using a Bubble chart:

- a category with values for X axis,
- a category with values for Y axis,
- a category with values for sizing bubbles (Z).

Example

Bubble Chart with Header

Monday, June 4, 2018 1:32:33 PM - 2:32:33 PM 60 minutes | Reports

Host CPU vs Memory vs Processes

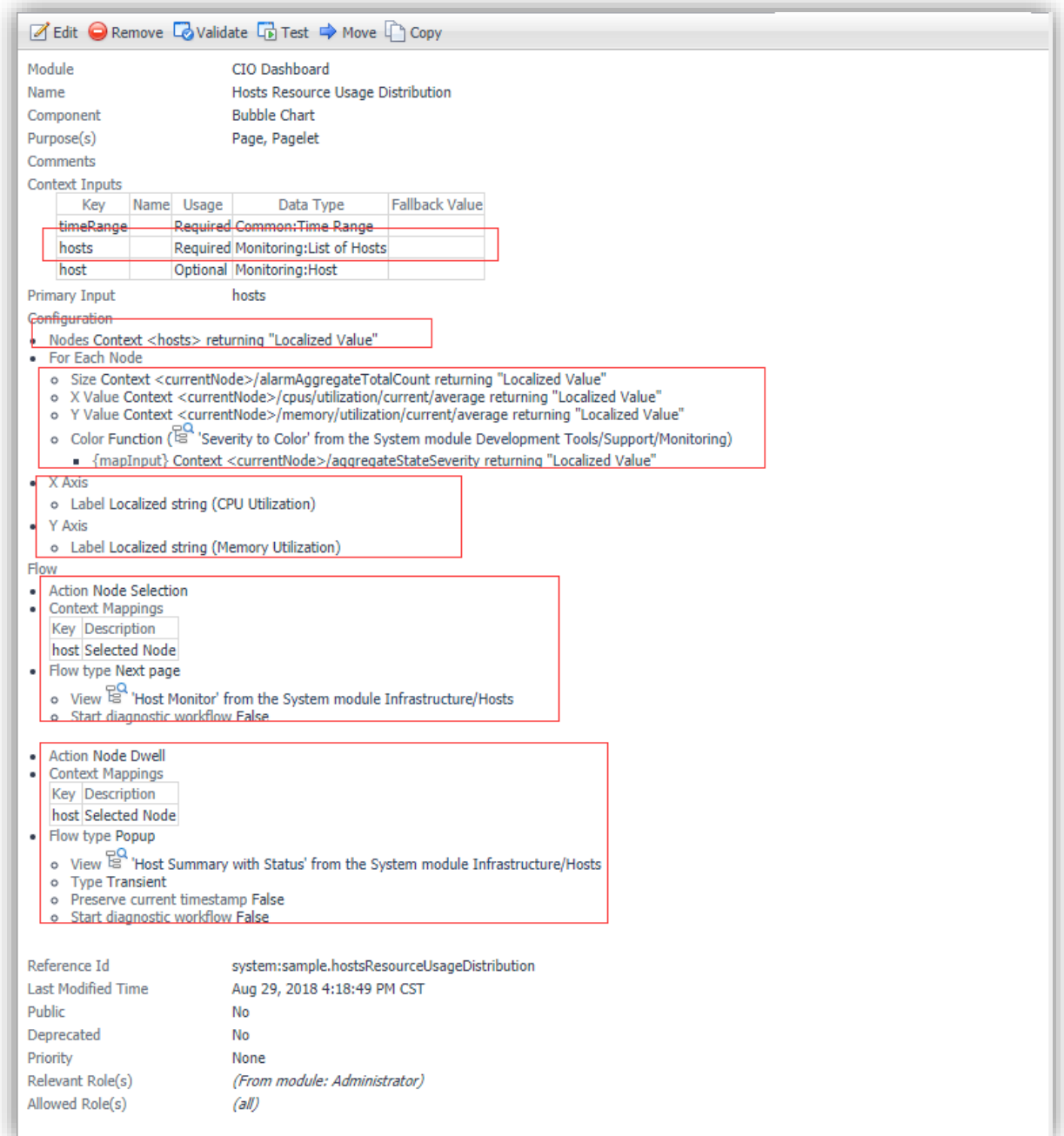
Memory Utilization

80 %
70 %
60 %
50 %
40 %
30 %
20 %

OK Cancel Help

Configure the Bubble Chart

- Add context “*hosts*” as Input.
- Bind context “*hosts*” to *Nodes*.
- Configure following properties for each Host.
 - Size: bind to host total alarms count
 - X Value: bind to host CPU utilization
 - Y Value: bind to host Memory utilization
 - Color: bind to public function *Severity to Color*
- Configure the *Node Selection* action
- Configure the *Node Dwell* action



Module: CIO Dashboard
Name: Hosts Resource Usage Distribution
Component: Bubble Chart
Purpose(s): Page, Pagelet
Comments:

Context Inputs

| Key | Name | Usage | Data Type | Fallback Value |
|-----------|------|----------|--------------------------|----------------|
| timeRange | | Required | Common:Time Range | |
| hosts | | Required | Monitoring:List of Hosts | |
| host | | Optional | Monitoring:Host | |

Primary Input: hosts

Configuration

- Nodes Context <hosts> returning "Localized Value"
- For Each Node
 - Size Context <currentNode>/alarmAggregateTotalCount returning "Localized Value"
 - X Value Context <currentNode>/cpus/utilization/current/average returning "Localized Value"
 - Y Value Context <currentNode>/memory/utilization/current/average returning "Localized Value"
 - Color Function (Severity to Color) from the System module Development Tools/Support/Monitoring
 - {mapInput} Context <currentNode>/aggregateStateSeverity returning "Localized Value"
- X Axis
 - Label Localized string (CPU Utilization)
- Y Axis
 - Label Localized string (Memory Utilization)

Flow

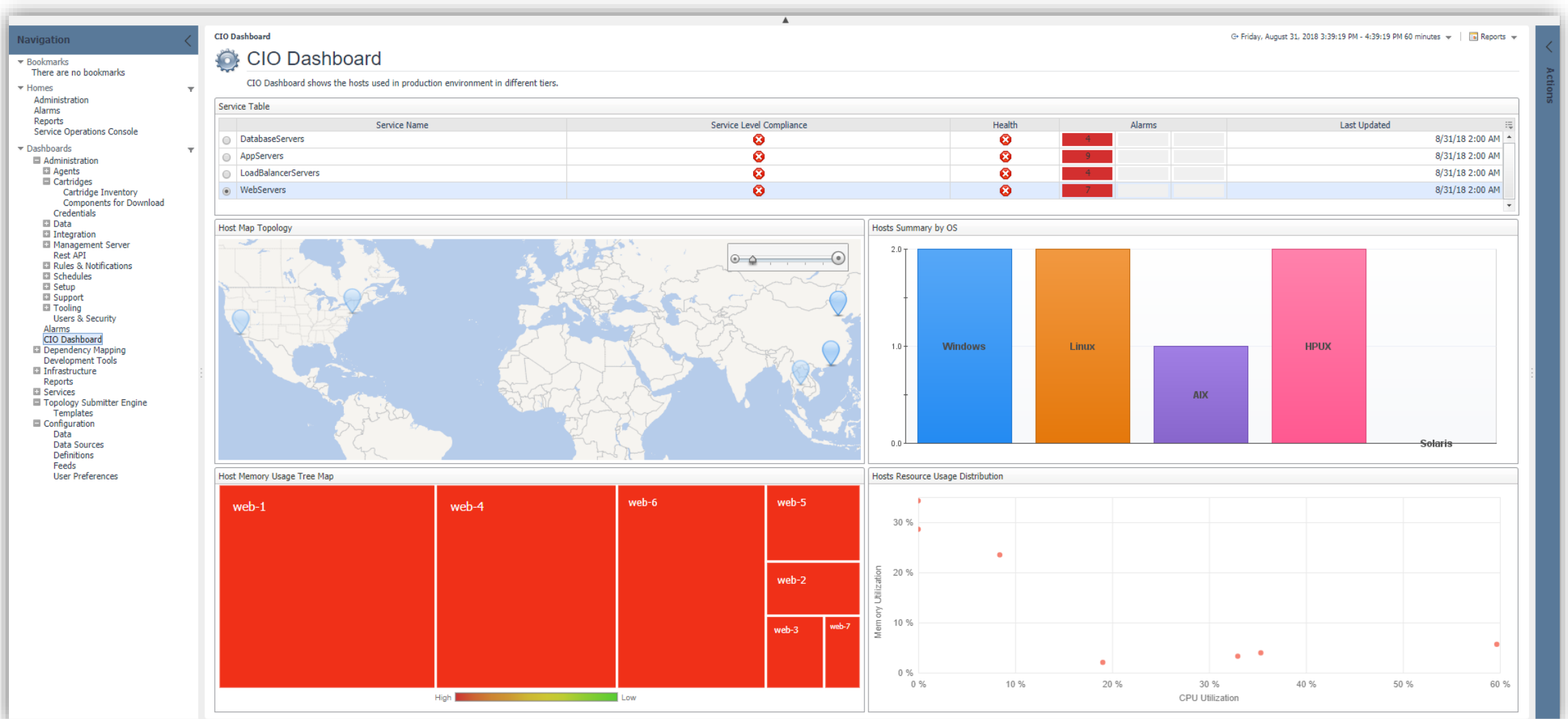
- Action Node Selection
- Context Mappings
 - Key Description
 - host Selected Node
- Flow type Next page
 - View 'Host Monitor' from the System module Infrastructure/Hosts
 - Start diagnostic workflow False

- Action Node Dwell
- Context Mappings
 - Key Description
 - host Selected Node
- Flow type Popup
 - View 'Host Summary with Status' from the System module Infrastructure/Hosts
 - Type Transient
 - Preserve current timestamp False
 - Start diagnostic workflow False

Reference Id: system:sample.hostsResourceUsageDistribution
Last Modified Time: Aug 29, 2018 4:18:49 PM CST
Public: No
Deprecated: No
Priority: None
Relevant Role(s): (From module: Administrator)
Allowed Role(s): (all)

Construct CIO Dashboard

CIO Dashboard Preview



Add a Rows Layout

Definitions

- All Definitions
- My Definitions
- Administration
- Agent Adapter
- Alarms
- APM
- Cartridge Builder
- CIO Dashboard**
- Dependency Mapping
- Development Tools
- Infrastructure
- Phone Home
- Reports
- Services
- Simple Rule
- Topology Submitter Engine

Views

| Name | Component | Purpose(s) | hostMa |
|-----------------------------------|--------------------|---------------|---------|
| Host Map Topology | Map Topology | Page, Pagelet | hostMa |
| Hosts Memory Usage Tree Map Chart | Tree Map Chart | Page, Pagelet | hostsM |
| Hosts Resource Usage Distribution | Bubble Chart | Page, Pagelet | hostsR |
| Hosts Summary by OS | Bar or Pie Chart | Page, Pagelet | hostsS |
| Service Table | Row-Oriented Table | Page, Pagelet | service |

Add View

Create a Blank View | Copy an Existing View

Common

- Columns Layout
- Grid Layout
- Label
- Row-Oriented Table
- Rows Layout**
- Time Plot Chart

Charts and Gauges

- Metric
- Tables and Trees
- Analytics
- Layouts
- Other Containers
- Reporting
- Topology
- Bean Inputs
- Context Inputs
- Others
- Legacy

Rows Layout

The Rows Layout view component displays a set of views organized in rows. Within each row, the views are positioned horizontally in the same way as the views in a Grid Layout, except that each row is laid out independently. The natural width of the layout is based on the longest row, and natural height is the sum of the row heights. (Each row's natural height is based on the largest view in that row.)

Example

component

| Name | Category | State | Value |
|-----------------------------------|----------|-------|-----------------------------------|
| Host Map Topology | System 0 | OK | Host Map Topology |
| Hosts Memory Usage Tree Map Chart | System 1 | OK | Hosts Memory Usage Tree Map Chart |
| Hosts Resource Usage Distribution | System 2 | OK | Hosts Resource Usage Distribution |
| Hosts Summary by OS | System 3 | OK | Hosts Summary by OS |
| Service Table | System 4 | OK | Service Table |

Properties

- View ID: Host Summary with Status from the System module Infrastructure/Hosts
- Type: Transient
- Preserve current timestamp: False
- Start diagnostic workflow: False

Metadata

| Property | Value |
|--------------------|--|
| Reference Id | system:sample.hostsResourceUsageDistribution |
| Last Modified Time | Aug 29, 2018 4:18:49 PM CST |
| Public | No |
| Deprecated | No |
| Priority | None |
| Relevant Role(s) | (From module: Administrator) |
| Allowed Role(s) | (all) |

General Setup for Layout

- Name: CIO Dashboard
- Purpose: Page

Save X Cancel Test

General Context Configuration Layout

Module Sample

Component Rows Layout

Name CIO Dashboard

ID CIODashboard

Public ☐

Deprecated ☐

Refresh Interval second(s)

Priority None ▼

Purpose(s) Page

Custom Purpose(s)

Relevant Role(s) (From module: Administrator)

Allowed Role(s) (all)

Comments

Context Help

Context Setup for Layout

- *selectedService*: this context is used to pass the value of selected service in *Service Table*.
- *hosts*: values are from the *selectedService*, and it is required by contained views.

The screenshot shows a configuration window with tabs: General, Context, Configuration, and Layout. The 'Context' tab is active. It contains two tables: 'Inputs' and 'Additional'.

Inputs Table:

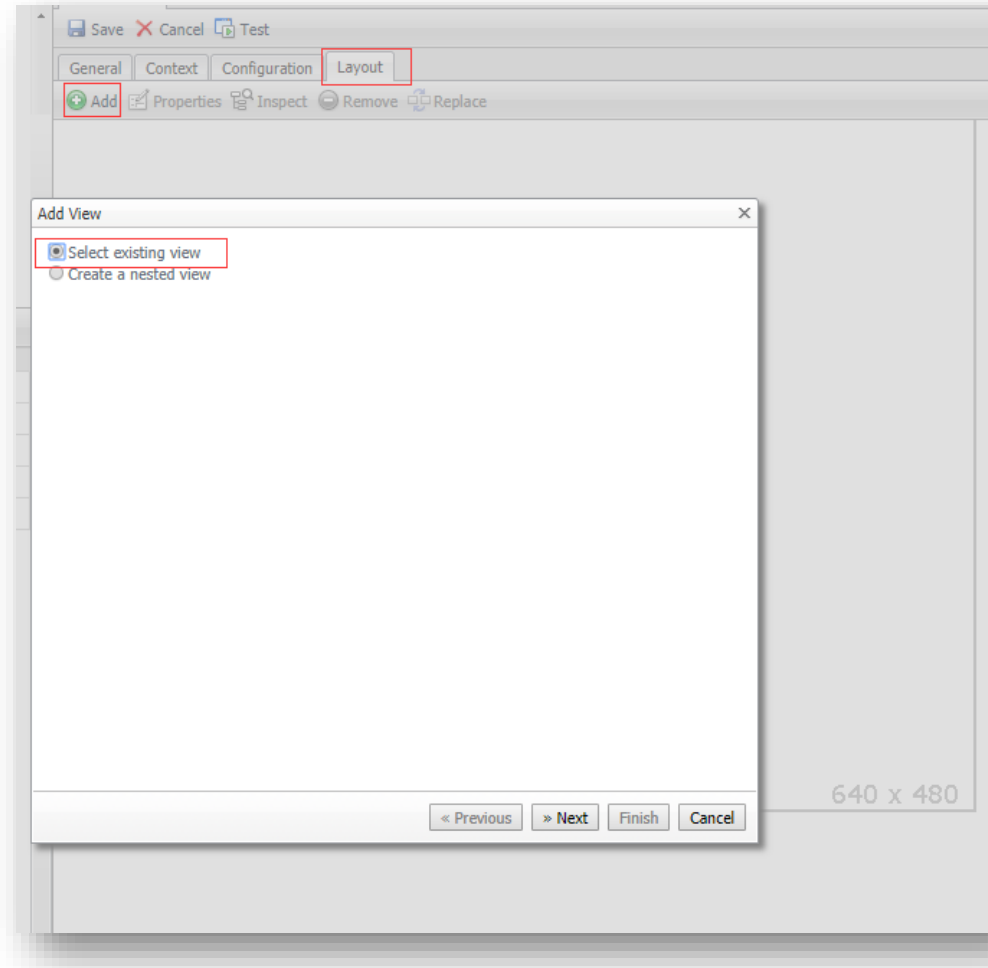
| | Key | Name | Usage | List | Data Type | Fallback Value |
|---------|-----------------|-----------|------------|---------|-----------------------|----------------|
| [-] [v] | timeRange | (not set) | Required ▼ | False ▼ | Common:Time Range | |
| [-] [u] | selectedService | (not set) | Internal ▼ | False ▼ | Monitoring:FSMService | Null |
| [+] | | | | | | |

Primary Input: Unspecified

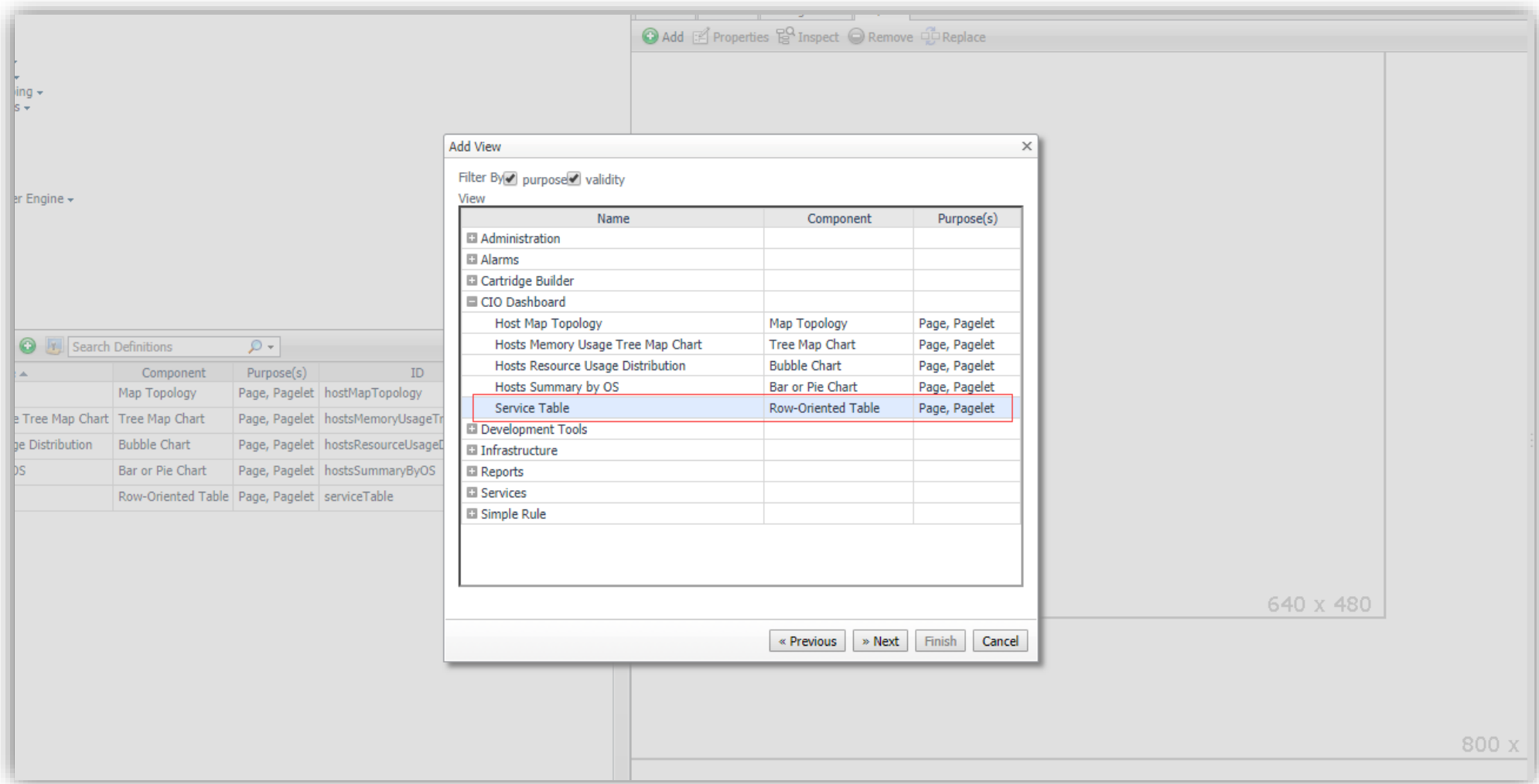
Additional Table:

| | Key | Name | Evaluate Once | Value |
|-----|-------|-----------|--------------------------|-------------------------|
| [-] | hosts | (not set) | <input type="checkbox"/> | <selectedService>/hosts |
| [+] | | | | |

Add Views to Layout – Step 1

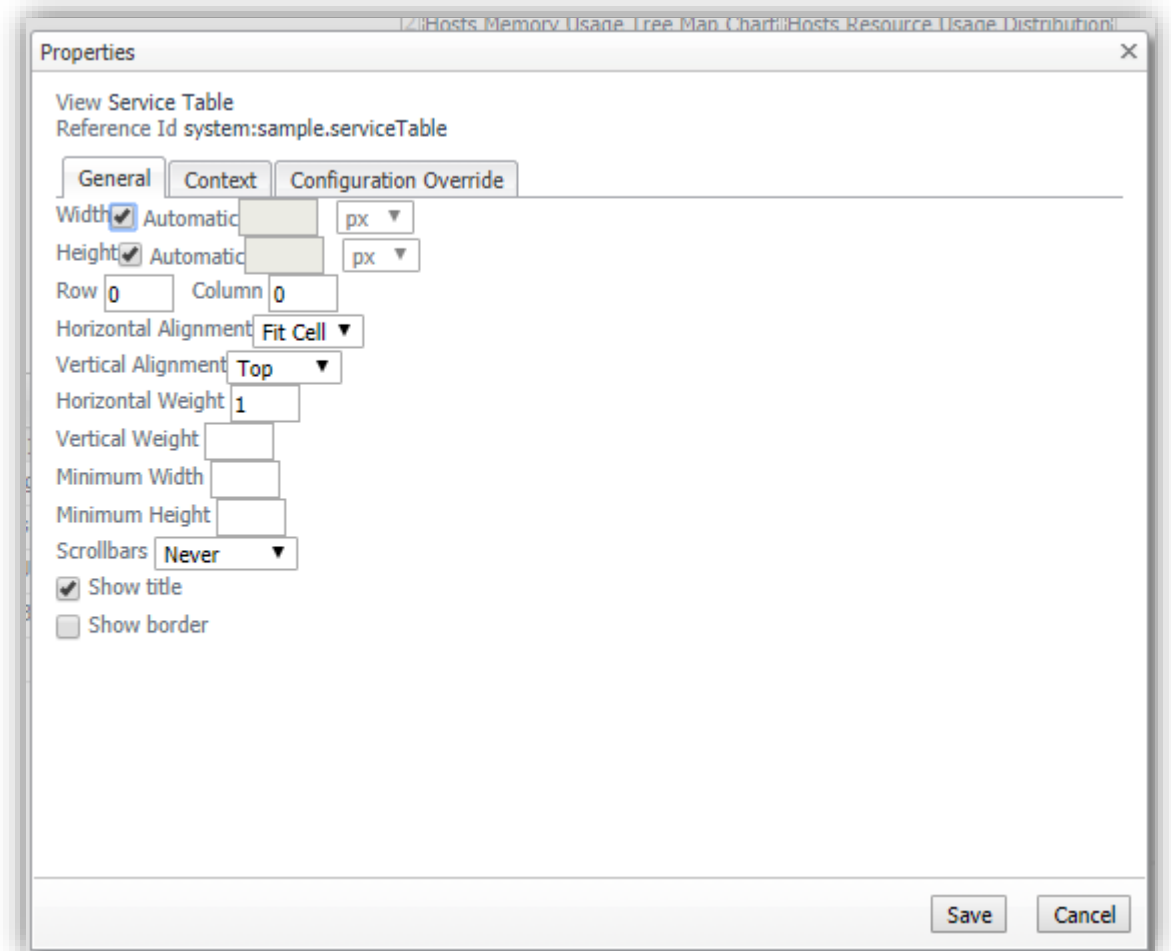


Add Views to Layout – Step 2



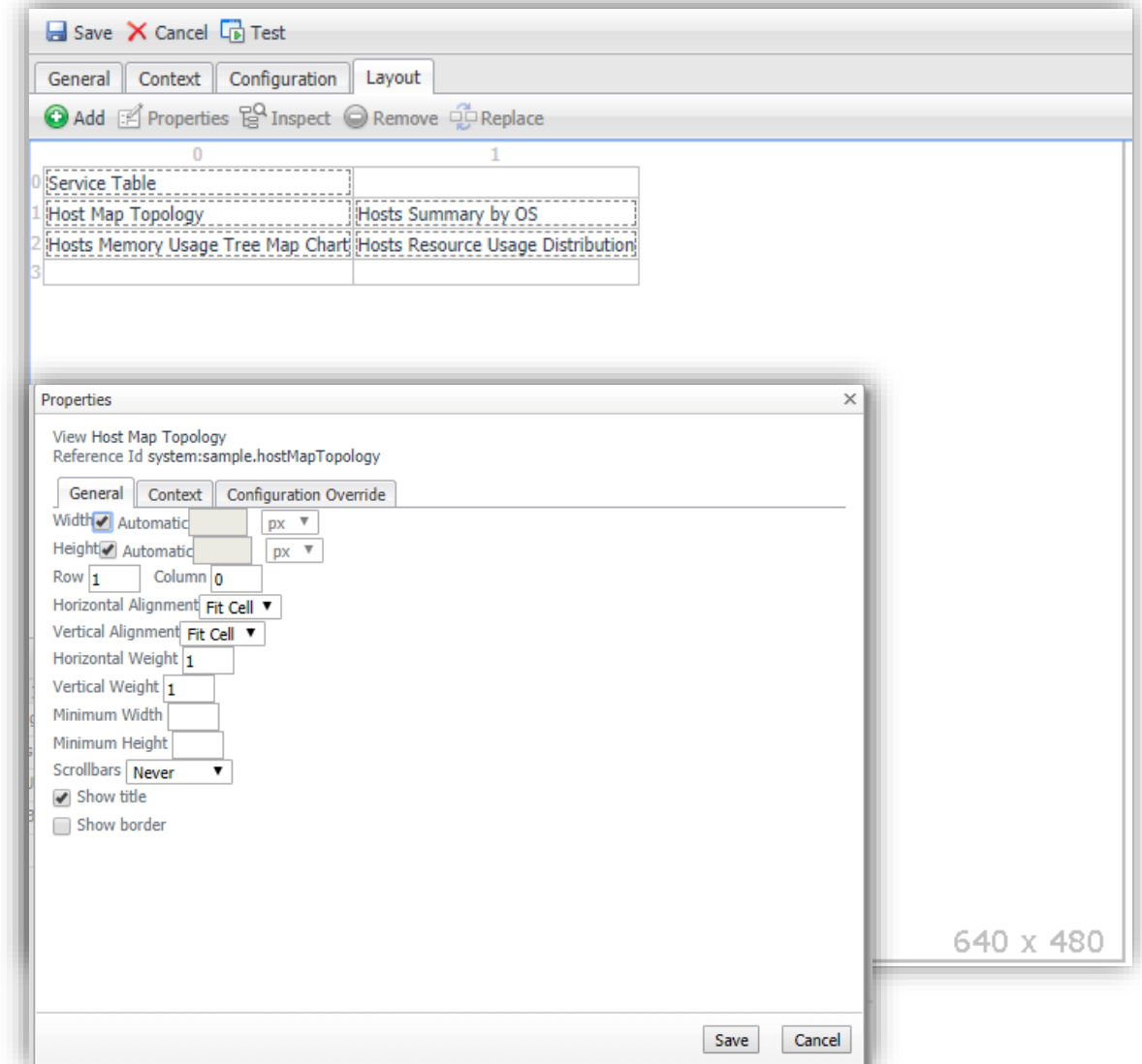
Add Views to Layout – Step 3

- *Automatic* for *Width* and *Height*
- *Fit Cell* for *Horizontal Alignment*
- *1* for *Horizontal Weight*



Add Views to Layout – Step 4

- Add other views to Layout in the same way.
- The differences are
 - *Row and Column*
 - *Fit Cell for Vertical Alignment* as well.
 - *1 for Vertical Weight* as well.



Other Configurations

- Configure *Page Title*
- Bind '*CIO Dashboard*' to module as Main View so that a dashboard link appears in Navigation panel.

The screenshot shows a configuration window titled 'Summary View For Hosts (In Quick View) × CIO Dashboard ×'. It has tabs for 'General', 'Context', 'Configuration', 'Layout', and 'Flow'. The 'Configuration' tab is active, displaying a table of settings. A red box highlights the 'Icon' row, and another red box highlights the 'Page Style Options' section, which includes 'Style', 'Page Title', and 'Description' rows.

| Icon | Icon Reference | Service Icon |
|------------------------|----------------|--|
| Error Renderer | Error Renderer | |
| Null Renderer | Null Renderer | |
| Customizer | | |
| Background | | |
| Page Options | | |
| Page Style Options | | |
| Style | Page Style | Descriptive |
| Page Title | Any | "CIO Dashboard" for locale "en" |
| Description | Any | "CIO Dashboard shows all hosts used in production environment in different tiers." for locale "en" |
| Navigation Panel Views | | |
| Page Panel Views | | |
| Navigation Icon | Icon Reference | |
| Actions | | |
| Related Links | | |
| Time Range Options | | |
| Polling | | |

Course Summary

- During this course we covered:
 - Tried analytics view in Drag'n'Drop dashboard
 - Completed the CIO Dashboard building



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