

How To Understand Multi-Tenancy in Nagios XI 2024

Purpose

This document describes how to configure Nagios XI to support multi-tenancy to allow multiple users or clients to share access to a single Nagios XI instance. This ensures those specific users have access only to hosts and services they are authorized to view and maintain.

Additional Resources

In addition to this document, Nagios administrators should be familiar with this [Understanding Users and Contacts in Nagios XI 2024](#).

This document provides supporting information to successfully implement multi-tenancy with Nagios XI.

Multi-Tenancy Overview

Multi-tenancy allows administrators to configure Nagios XI in such a way that the following criteria can be met:

- A single Nagios XI instance can monitor hosts and services for multiple users (clients)
- Each user (client) can only see the hosts and services they are authorized to view and maintain

Permissions and Multi-Tenancy

A key component of multi-tenancy is the ability to restrict a given user's permission to allow them to see and control only hosts and services they are authorized to view and maintain. Nagios XI automatically determines what hosts and services a user is authorized to see based on their relationship to those hosts and services.

By default, Nagios XI grants users permission to see and control hosts and services that are configured to:

- Send alerts to the user (contact)
- Send alerts to a contact group where the user (contact) is a member

A key to understanding the relationships between objects and the corresponding permissions that contacts have is to know how different types of objects relate to each other:

- Users (contacts) may belong to one or more contact groups
- Hosts and services may be configured to send alerts to multiple contacts or contact groups

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- Hosts and services may be members of one or more host groups or service groups, respectively

Getting Started

This guide will take you through the steps of configuring Nagios XI to support multi-tenancy, including:

- Creating users / contacts
- Defining contact groups
- Configuring hosts and services
- Defining host groups

Administrative Login

If you haven't already done so, login to Nagios XI as the **nagiosadmin** user. You'll need to perform operations which require administrator access in the following steps.

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Creating Users And Contacts

The first step in creating a multi-tenant Nagios XI installation is the creation of multiple user accounts.

1. Navigate to **Admin > Users > Manage Users** and click the **Add New User** button.

The screenshot shows the 'Manage Users' page in Nagios XI. At the top, there are three buttons: 'Add New User', 'Add users from LDAP/AD', and 'Email All Users'. Below these is a search bar. A table lists the existing users. The table has columns for Username, Name, Email, Phone Number, Auth Level, Auth Type, Last Login, and Actions. One user is listed: 'nagiosadmin' with the name 'Nagios Administrator' and email 'root@localhost'. At the bottom, there are pagination controls showing 'Page 1 / 1' and '5 Per Page'.

	Username ↓	Name ↓	Email ↓	Phone Number	Auth Level ↓	Auth Type ↓	Last Login ↓	Actions
<input type="checkbox"/>	nagiosadmin	Nagios Administrator	root@localhost	-	Admin	Local	2024-08-25 20:00:18	Edit Copy Reset Add Delete

The screenshot shows the 'Add New User' form in Nagios XI. It is divided into two main sections: 'Account Settings' and 'Security Settings'. The 'Account Settings' section includes fields for Username, Password, Email User Account Information, Force password change at next login, Alias (Name), Email Address, and Phone Number. The 'Security Settings' section includes a dropdown for Authorization Level (set to 'User') and a list of checkboxes for various permissions: Can see all hosts and services, Can control all hosts and services, Can configure hosts and services, Can access advanced features, Can access monitoring engine, Read-only access, API access, and Auto deploy access. At the bottom, there are checkboxes for 'Create as Monitoring Contact', 'Enable Notifications', and 'Account Enabled'.

Account Settings

Username *
[Text Field]

Password *
[Text Field] [Eye Icon]

☐ Email User Account Information Set to a random secure password

☐ Force password change at next login

General Settings

Alias (Name) *
[Text Field]

Email Address *
[Text Field]

Phone Number
[Text Field]

☒ Create as Monitoring Contact
☒ Enable Notifications
☒ Account Enabled

Security Settings

Authorization Level ?
User

☐ Can see all hosts and services ?
☐ Can control all hosts and services ?
☐ Can configure hosts and services ?
☐ Can access advanced features ?
☐ Can access monitoring engine ?
☐ Read-only access ?
☐ API access ?
☐ Auto deploy access ?

Core Config Manager access ?
None

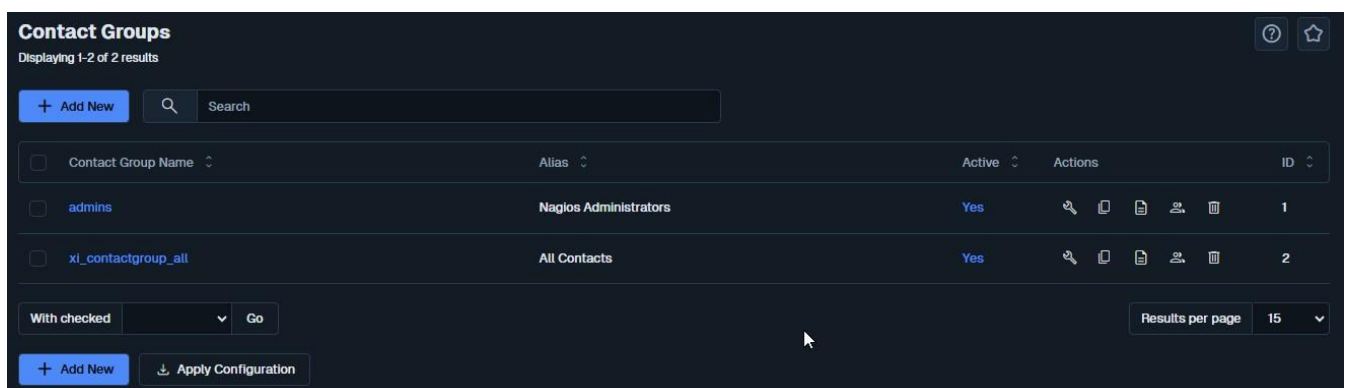
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2. Populate the fields as required in each tab.
3. The most important option is the **Create as Monitoring Contact** checkbox, this is how the multi-tenancy security model works.
4. It's also worth mentioning that the **Can see all objects** option will prevent the multitenancy from filtering the objects the user is allowed to see.
5. Create all the users that will be accessing Nagios XI.

Defining Contact Groups

It is considered best practice to define one or more contact groups that can be used to categorize the contacts you create. Contact groups can be used to group contacts by company/client, department, team, or other logical grouping.

1. Navigate to **Configure > Core Config Manager**. Expand **Alerting** and click **Contact Groups**.

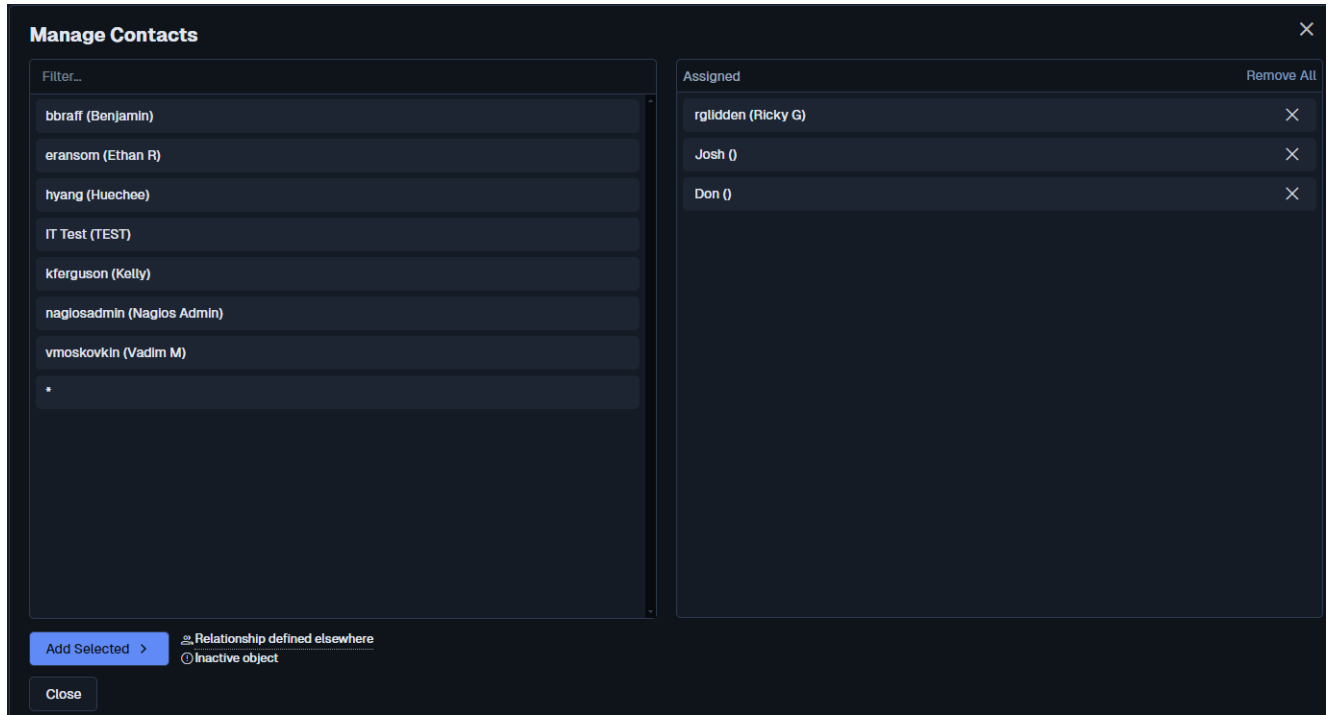


2. Click the **Add New** button to add a new Contact Group.

A screenshot of the 'Contact Group Management' form in Nagios XI. The form has two main sections. The left section contains fields for 'Contact Group Name' (with a red asterisk) and 'Alias' (with a red asterisk), both containing the text 'Developers'. There is also an 'Active' checkbox which is checked. The right section, titled 'Assign Memberships', contains two buttons: 'Manage Contacts' and 'Manage Contact Groups', both showing a count of 0. At the bottom left are 'Save' and 'Cancel' buttons.

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3. Here you will define a name and description for the group.
4. Click the **Manage Contacts** button to add users to the contact group.

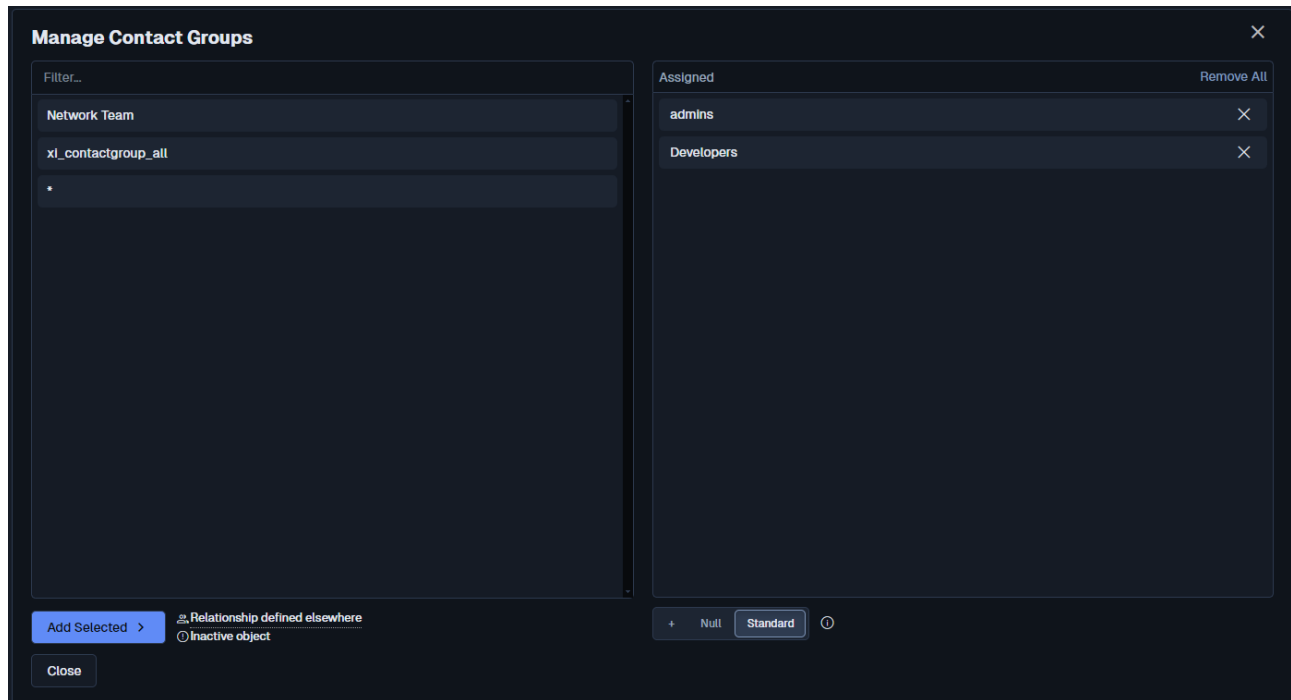


The screenshot shows the 'Manage Contacts' dialog box in Nagios XI. It has a dark theme. On the left, there is a list of contacts with a 'Filter...' input at the top. The contacts listed are: bbraff (Benjamin), eransom (Ethan R), hyang (Huechee), IT Test (TEST), kferguson (Kelly), nagiosadmin (Nagios Admin), vmoskovkin (Vadim M), and an asterisk (*) at the bottom. On the right, there is an 'Assigned' section with a 'Remove All' link. It contains three items: rglidden (Ricky G), Josh (), and Don (). At the bottom left, there is a blue 'Add Selected >' button. To its right, there are two links: 'Relationship defined elsewhere' and 'Inactive object'. At the bottom left, there is a 'Close' button.

5. Select the members that should belong to the group.
6. Click **Close** and then **Save** to finish creating the contact group.

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7. Adding an entire contact group is done using the **Manage Contact Groups** button and is similar to the **Manage Contacts** button.



8. This allows you to add a sub-group and allows for multiple group relationships on different levels.
9. Remember to save your settings after you modify a contact group and **Apply Configuration** when done.

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Configuring Hosts and Services

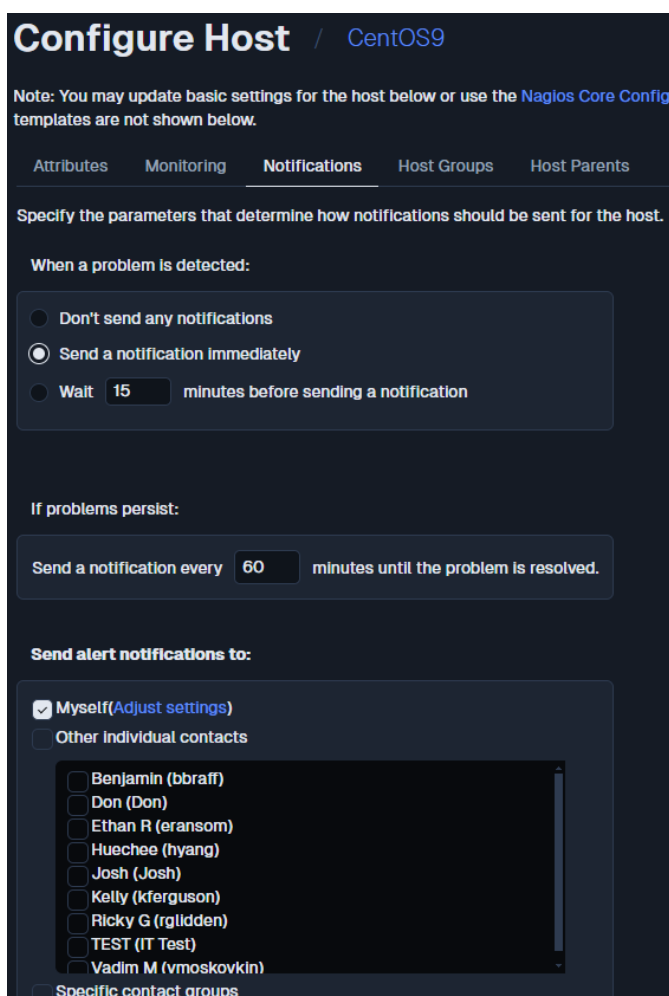
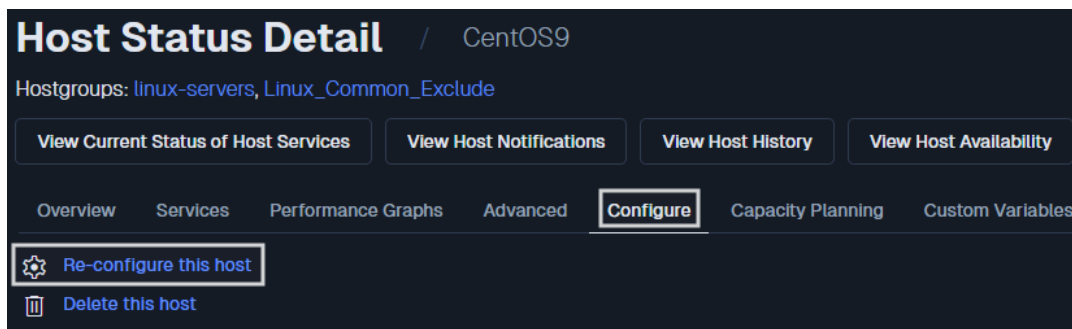
In order to grant users permission to see specific hosts and services, you must configure that user to be a notification contact for those hosts and services.

The screenshot shows the 'NCPA Configuration Wizard' at 'Step 4'. The title is 'Notification Settings'. Below the title, it says 'Define basic parameters that determine how notifications should be sent for the host and service(s)'. The main section is 'When a problem is detected:'. It has three options: 'Do not send any notifications' (disabled), 'Send a notification immediately' (enabled), and 'Wait 15 minutes before sending a notification' (disabled). Below this is 'If problems persist:'. It has a toggle for 'Send a notification every 60 minutes until the problem is resolved' (enabled). The next section is 'Send alert notifications to:'. It has two main categories: 'Myself (Adjust my settings)' (enabled) and 'Other Individual contacts' (enabled). Under 'Other Individual contacts', there are nine checkboxes for individual contacts: Benjamin (bbraff), Don (Don), Ethan R (eransom), Huechee (hyang), Josh (Josh), Kelly (kferguson), Ricky G (rglidden), TEST (IT Test), and Vadim M (vmoskovkin). The last category is 'Specific contact groups' (enabled). It has four checkboxes: 'All Contacts (xl_contactgroup_all)', 'Developers (Developers)' (checked), 'Nagios Administrators (admins)', and 'NT (Network Team)'.

1. When configuring new hosts and services using the Monitoring Wizard, you can simply select the appropriate contact(s) and/or contact group(s) that should receive notifications for the host and services on the **Notification Settings** page (step 4).
2. The contacts and contact groups you select on this screen will have the ability to view the status of these hosts and services when they login to Nagios XI.

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- When adding the CentOS9 server we added the **Developers** contact group. This means that Ricky, Don and Jon will see this host and services when logged into Nagios XI.



- If you create your **users** and/or **contact groups** after creating hosts and services, you can easily re-configure the hosts or services to use those new contacts and/or contact groups.

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5. This can be accomplished by selecting the **Re-configure this host/service** option under the **Configure tab** when you are viewing detailed information on a specific host or service.
6. When the **Configure Host** page opens, select the **Notification tab**. This will allow you to change any of the contacts and contact groups associated to this host.
7. Click **Update** when done making changes.

Defining Host Groups

Host groups allow you to group hosts in a logical manner, making it easier for users to get a quick view of their network infrastructure. They will not have an impact on the notifications or access control but will make it easier for both your users to grasp what they are looking at and for you as the administrator to quickly pinpoint where problems are occurring.

1. Navigate to **Configure > Core Config Manager**. Expand **Monitoring** and click **Host Groups**.

<input type="checkbox"/>	Contact Group Name	Alias	Active	Actions	ID
<input type="checkbox"/>	admins	Nagios Administrators	Yes		1
<input type="checkbox"/>	Developers	Developers	Yes		5
<input type="checkbox"/>	Network Team	NT	Yes		4
<input type="checkbox"/>	xi_contactgroup_all	All Contacts	Yes		2

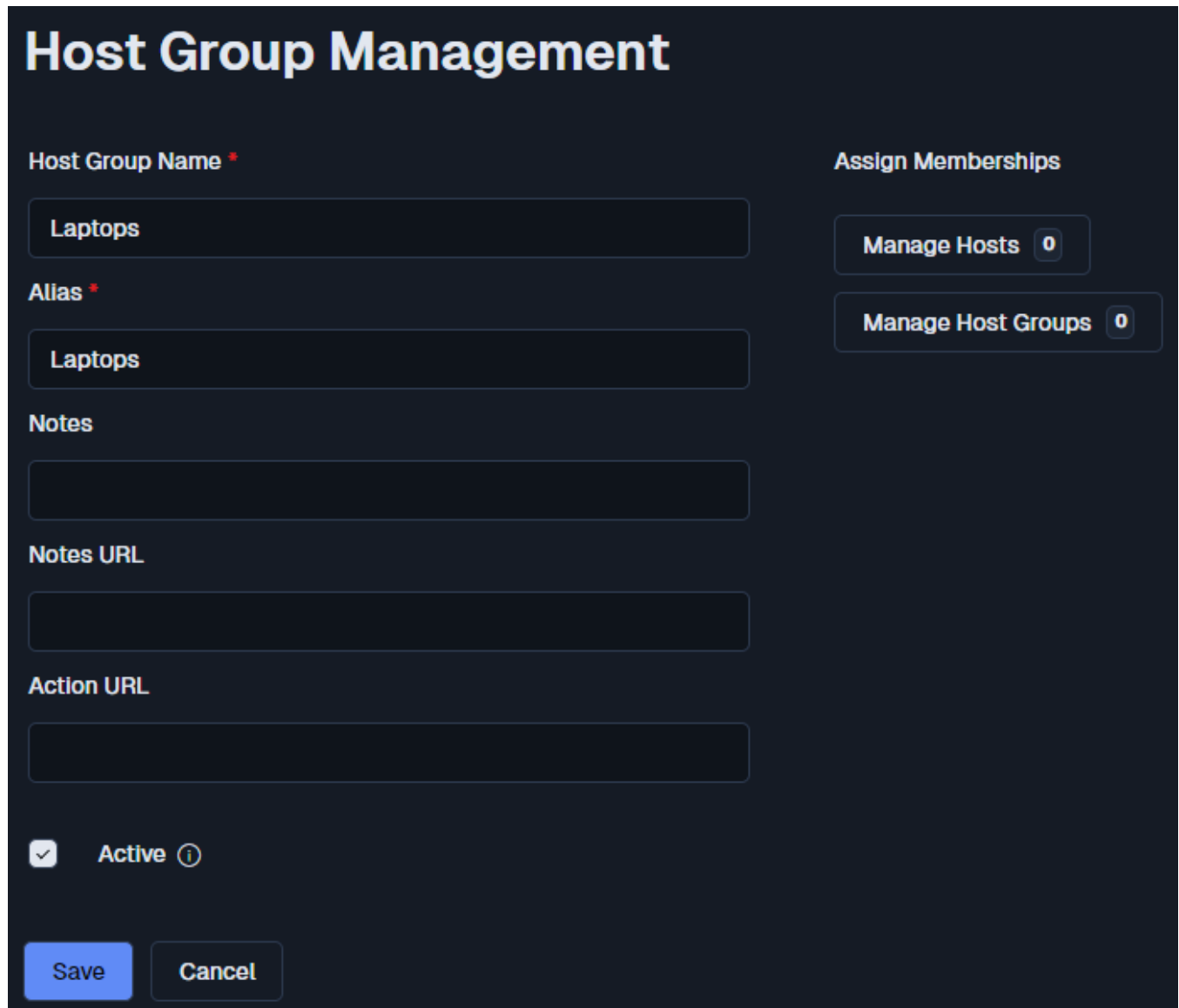
With checked ☐ Go Results per page 15

+ Add New Apply Configuration

2. Click the **Add New** button to add a new **Host Group**.

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3. You will define a **name** and **description** for the group.



The screenshot shows the 'Host Group Management' form in Nagios XI. The form is divided into two main sections: the left section for defining the group and the right section for assigning memberships.

Host Group Management

Host Group Name *
Laptops

Alias *
Laptops

Notes
[Empty text area]

Notes URL
[Empty text area]

Action URL
[Empty text area]

☒ **Active** ⓘ

Assign Memberships

Manage Hosts 0

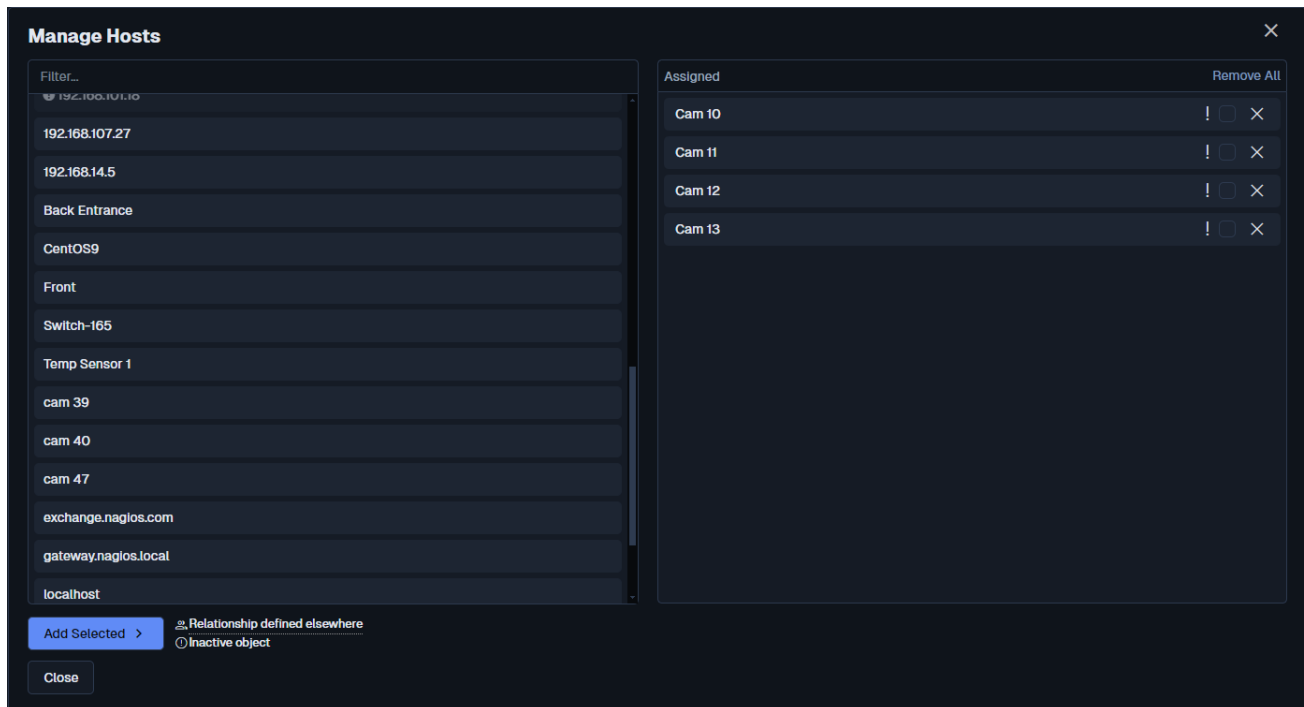
Manage Host Groups 0

Save **Cancel**

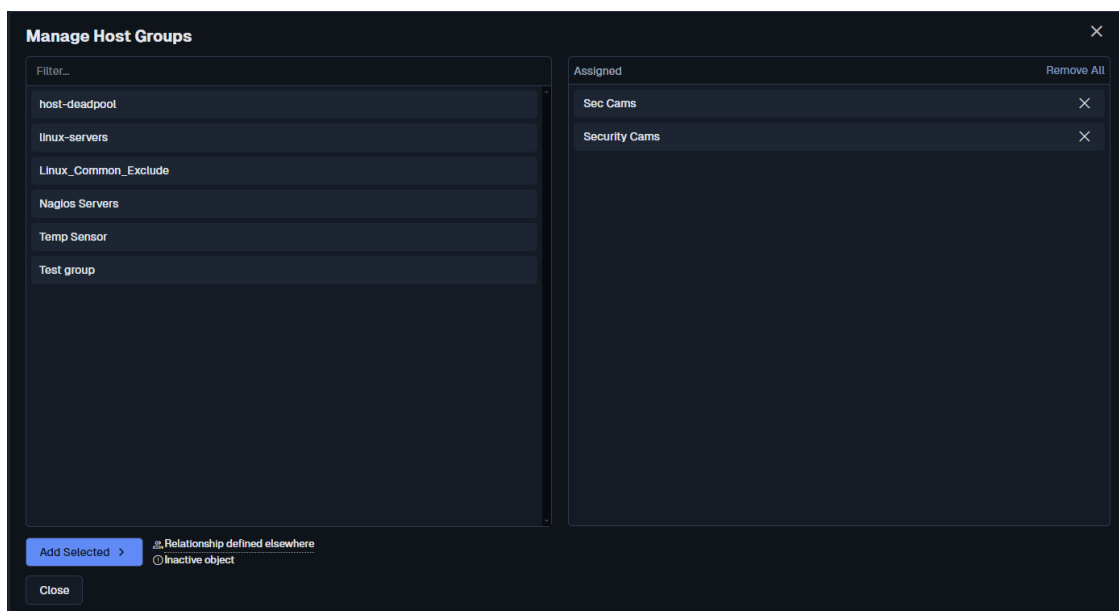
4. Click the **Manage Hosts** button to add hosts to the host group.

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5. Select the members that should belong to the group.



6. Click **Close** and then **Save** to finish creating the host group.
7. Similar to contact groups, you can create host groups that have individual hosts and other host groups as their members. Host groups are added with the **Manage Host Groups** button.



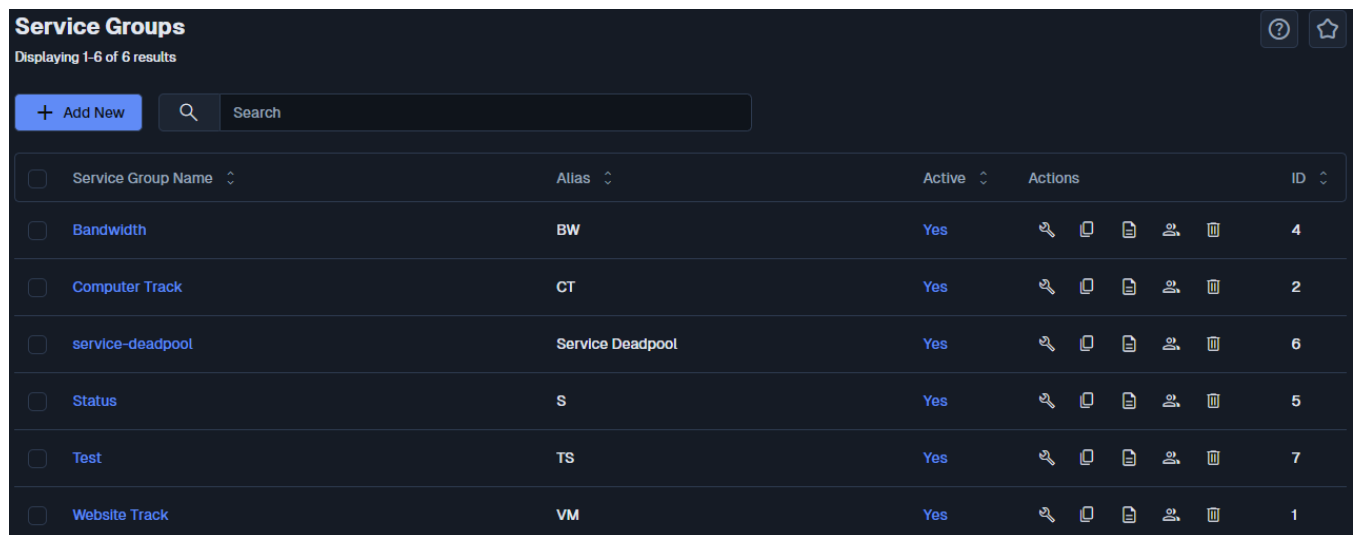
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- Remember to choose the **Apply Configuration** option when you are done making configuration changes.

Service Groups

Service groups work in a similar way to host groups, in that they allow you to group services together in a way that makes sense for users who need to view the status of your infrastructure. The process of creating service groups is similar to that of creating host groups.

- Navigate to **Configure > Core Config Manager**. Expand **Monitoring** and click **Service Groups**.



<input type="checkbox"/>	Service Group Name	Alias	Active	Actions	ID
<input type="checkbox"/>	Bandwidth	BW	Yes		4
<input type="checkbox"/>	Computer Track	CT	Yes		2
<input type="checkbox"/>	service-deadpool	Service Deadpool	Yes		6
<input type="checkbox"/>	Status	S	Yes		5
<input type="checkbox"/>	Test	TS	Yes		7
<input type="checkbox"/>	Website Track	VM	Yes		1

- Click the **Add New** button to add a new **Service Group**.
- You will define a name and description for the group.
- Click the **Manage Services** button to add services to the service group.

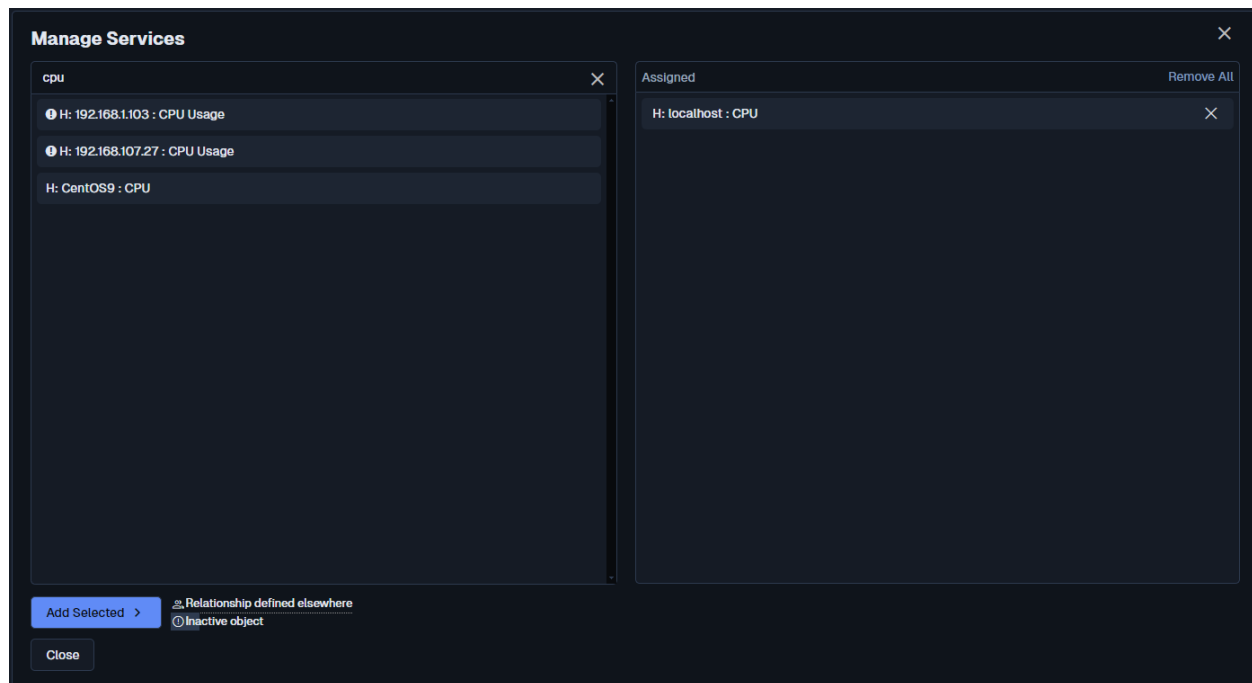
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5. Adding members to the service group is the same as in Contact and Host Groups. When you may have a lot of services you can filter the results in the left pane by typing in the **Filter** field at the top of the left pane. In the screenshot below you can see that the results have been filtered by the word CPU.

The screenshot displays the 'Service Group Management' interface in Nagios XI. The form is divided into several sections:

- Service Group Name ***: A text input field containing 'CPU Usage'.
- Alias ***: A text input field containing 'CPU Usage'.
- Notes**: A large text area for additional information.
- Notes URL**: A text input field for a URL associated with the notes.
- Action URL**: A text input field for an action URL.
- Assign Memberships**: A section on the right with two buttons: 'Manage Services' (showing 1 member) and 'Manage Service Groups' (showing 0 members).
- Active**: A checkbox that is checked, indicating the service group is active.
- Buttons**: 'Save' and 'Cancel' buttons at the bottom left.

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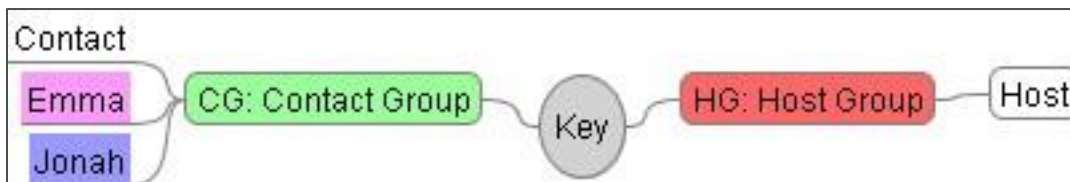


- Remember to save and choose the Apply Configuration option when you are done making configuration changes.

An Example

We configured Nagios XI with a sample setup to test and document the multi-tenancy features available. The information below describes how we setup our Nagios XI instance, and the end-result of our configuration.

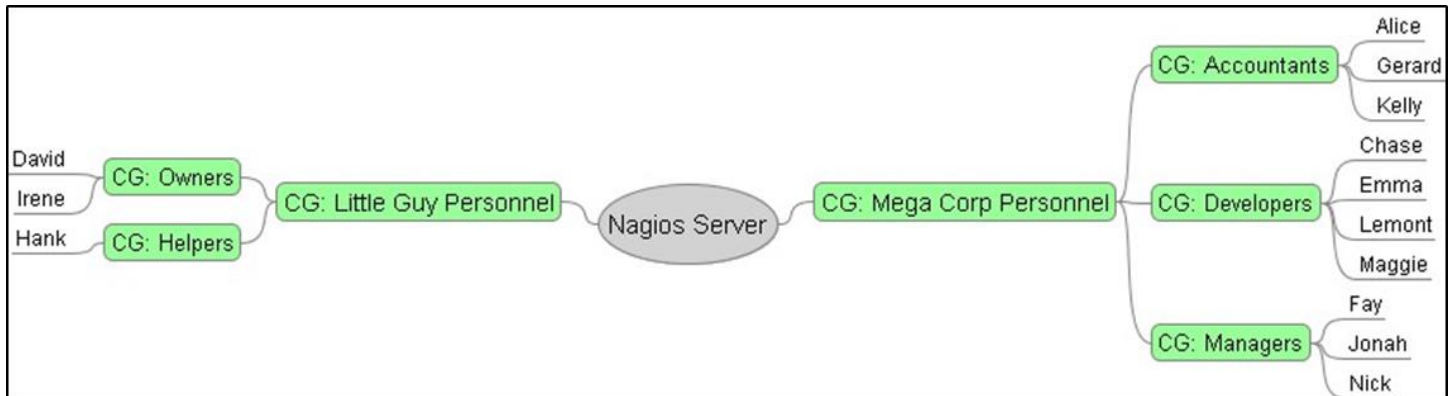
The configuration diagrams follow the pattern shown in the image below. Elements of the diagram show the relationships between hosts, host groups, contacts, and contact groups.



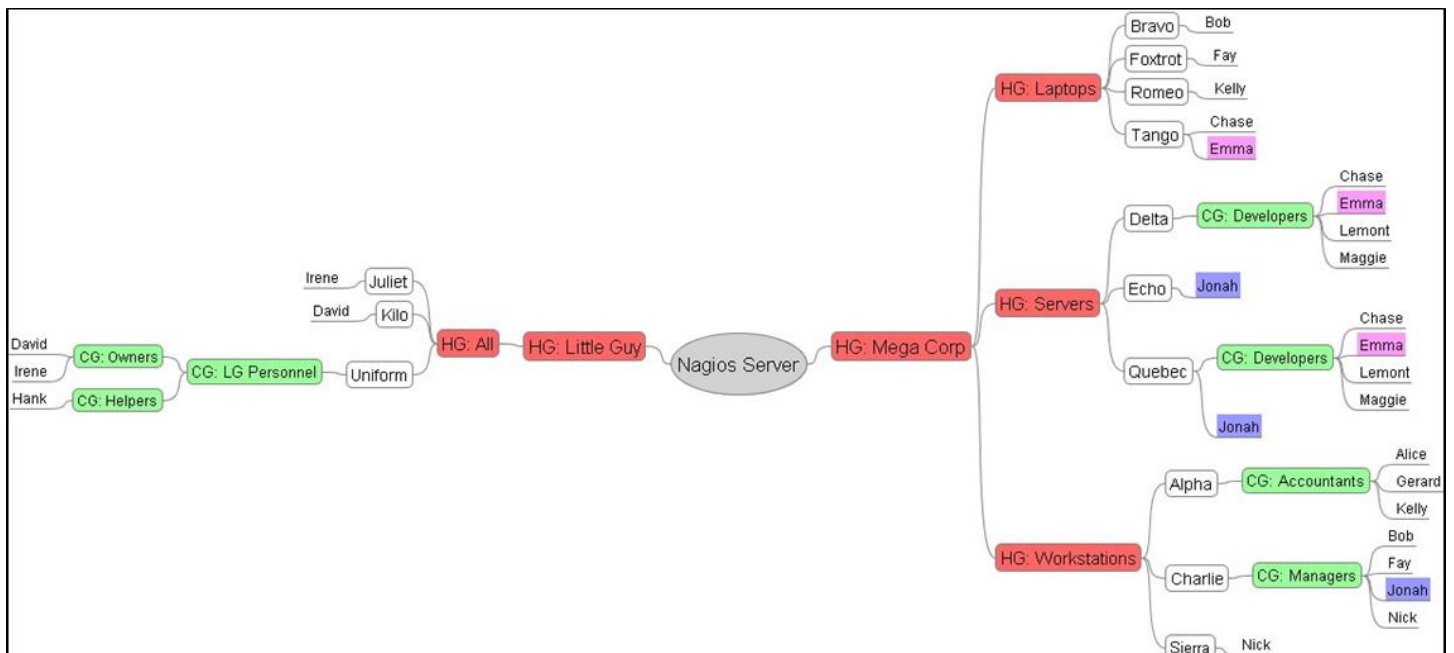
We defined two client companies - "Little Guy" and "Mega Corp" - each of which had a single top-level contact group covering their entire company. Those top-level contact groups then had other sub-groups as their members, which were used to define roles or departments within the company. The

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sub-groups then had individual employees as their members. The image below represents the configuration we created.



Top-level host groups were configured to contain each company's respective infrastructure elements. Sub-level host groups were defined to narrow the scope of included infrastructure elements for Mega Corp. The diagram below shows the hosts that are defined as members of various **hostgroups**, along with the **contact(s)** and/or **contact group(s)** that were assigned to each host for notification purposes.



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Administrator View

We configured Nagios XI using the **nagiosadmin** account. This account is an administrator, so it has permission to view all hosts, services, and groups that were defined. The following screenshot shows the **hostgroups** that were visible to the administrator under the **Hostgroup Overview** screen once we finished configuring everything.

The screenshot displays the 'Host Group Status' overview page in Nagios XI. At the top, there are four tabs: 'View Hostgroup Service Details', 'View Hostgroup Summary', 'View Hostgroup Overview' (selected), and 'View Hostgroup Grid'. Below the tabs, the page is divided into several sections. The 'Host Status Summary' section shows: Up 45, Down 0, Unreachable 0, Pending 0, Problems 0, Unhandled Problems 0, and All 45. The 'Service Status Summary' section shows: Ok 298, Warning 89, Unknown 3, Critical 16, Pending 5, Problems 108, Unhandled Problems 108, and All 411. Below these summaries, there are four hostgroup cards: 'All (All)', 'Laptops (Laptops)', 'Linux_Common_Exclude (Linux_Common_Exclude)', and 'Little Guy (Little Guy)'. Each card contains a table with columns for Host, Status, and Services. The 'All (All)' card lists Juliet, Kilo, and Uniform. The 'Laptops (Laptops)' card lists Bravo, Foxtrot, Romeo, and Tango. The 'Linux_Common_Exclude (Linux_Common_Exclude)' card lists CentOS9. The 'Little Guy (Little Guy)' card lists Juliet and Kilo. Each card also shows a 'Last Updated' timestamp of 2024-11-30 19:50:07.

Host	Status	Services
Juliet	Up	6 Ok, 2 Warning, 1 Critical
Kilo	Up	19 Ok, 2 Warning, 1 Unknown, 1 Critical
Uniform	Up	19 Ok, 2 Warning, 1 Unknown, 1 Critical

Host	Status	Services
Bravo	Up	7 Ok, 1 Warning, 1 Critical
Foxtrot	Up	20 Ok, 1 Warning, 1 Unknown, 1 Critical
Romeo	Up	6 Ok, 2 Warning, 1 Critical
Tango	Up	6 Ok, 2 Warning, 1 Critical

Host	Status	Services
CentOS9	Up	3 Ok, 1 Warning

Host	Status	Services
Juliet	Up	6 Ok, 2 Warning, 1 Critical
Kilo	Up	19 Ok, 2 Warning, 1 Unknown, 1 Critical

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Non-Admin View #1: Jonah

We created a Jonah user that appeared in three different places (highlighted in blue) in the diagram on the previous page. Jonah was configured as a direct notification contact for the hosts Echo and Quebec, and indirectly as a notification contact for Charlie via his membership in the Managers contact group.



These relationships are summarized in the diagram to the right:

We logged into Nagios XI as Jonah and selected the **Hostgroup** Overview screen to see what hosts and host groups Jonah could see.

The following screenshot shows that Jonah's view was limited to include only the hosts Echo, Quebec, and Charlie.

Host Group Status / overview

View Hostgroup Service Details | View Hostgroup Summary | View Hostgroup Overview | View Hostgroup Grid

Host Status Summary

- Up 6
- Down 0
- Unreachable 0
- Pending 0
- Problems 0
- Unhandled Problems 0
- All 6

Last Updated: 2024-11-30 19:59:02

Service Status Summary

- Ok 21
- Warning 6
- Unknown 0
- Critical 3
- Pending 0
- Problems 9
- Unhandled Problems 9
- All 30

Last Updated: 2024-11-30 19:59:03

Mega Corp (Mega Corp)

Host	Status	Services
Charlie	Up	6 Ok, 2 Warning, 1 Critical
Echo	Up	6 Ok, 2 Warning, 1 Critical
Quebec	Up	6 Ok, 2 Warning, 1 Critical

Last Updated: 2024-11-30 19:59:02

Security cameras (Sec Cams)

Host	Status	Services
cam 47	Up	1 Ok

Last Updated: 2024-11-30 19:59:01

IPCAM (Security Cams)

Host	Status	Services
Back Entrance	Up	1 Ok

Last Updated: 2024-11-30 19:59:02

Servers (Servers)

Host	Status	Services
Echo	Up	6 Ok, 2 Warning, 1 Critical
Quebec	Up	6 Ok, 2 Warning, 1 Critical

Workstations (Workstations)

Host	Status	Services
Charlie	Up	6 Ok, 2 Warning, 1 Critical

Last Updated: 2024-11-30 19:59:03

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Non-Admin View #2: Emma



Another user Emma was directly defined as the notification contact for the host Tango and indirectly for Delta and Quebec through her membership in the Developers contact group.

As seen in the following screenshot, Emma could only see the Delta, Tango and Quebec servers.

Another example is the service group that was created which included CPU Usage services from multiple servers. When Emma is logged in and navigates to the **Servicegroup Overview** page she only sees the services she has access to, as per this screenshot.

The screenshot displays the 'Host Group Status / overview' page. It features four tabs: 'View Hostgroup Service Details', 'View Hostgroup Summary', 'View Hostgroup Overview' (selected), and 'View Hostgroup Grid'. The main content area is divided into two summary sections and three host group details sections.

Host Status Summary

Up 6	Problems 0
Down 0	Unhandled Problems 0
Unreachable 0	All 6
Pending 0	

Last Updated: 2024-11-30 19:59:53

Service Status Summary

Ok 21	Pending 0
Warning 6	Problems 9
Unknown 0	Unhandled Problems 9
Critical 3	All 30

Last Updated: 2024-11-30 19:59:54

Laptops (Laptops)

Host	Status	Services
Tango	Up	6 Ok, 2 Warning, 1 Critical

Last Updated: 2024-11-30 19:59:53

Mega Corp (Mega Corp)

Host	Status	Services
Delta	Up	6 Ok, 2 Warning, 1 Critical
Quebec	Up	6 Ok, 2 Warning, 1 Critical
Tango	Up	6 Ok, 2 Warning, 1 Critical

Last Updated: 2024-11-30 19:59:54

Security cameras (Sec Cams)

Host	Status	Services
cam 47	Up	1 Ok

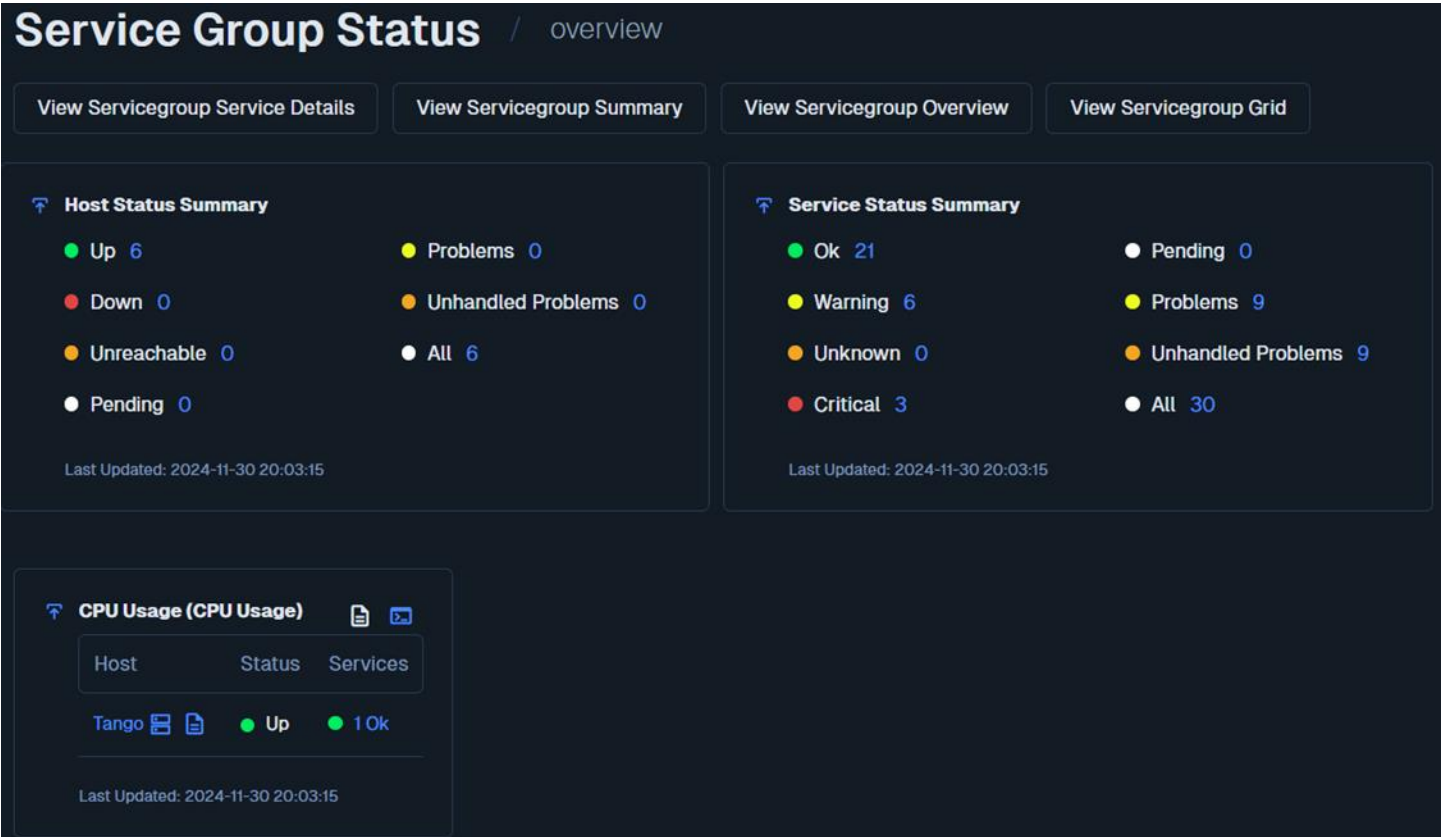
Last Updated: 2024-11-30 19:59:53

IPCAM (Security Cams)

Host	Status	Services
Back Entrance	Up	1 Ok

Last Updated: 2024-11-30 19:59:54

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Finishing Up

This completes the documentation on understanding Multi Tenancy in Nagios XI. If you have additional questions or other support-related questions, please visit us at our Nagios Support Forum, Nagios Knowledge Base, or Nagios Library:

[Visit Nagios Support Forum](#)

[Visit Nagios Knowledge Base](#)

[Visit Nagios Library](#)