The Industry Standard in IT Infrastructure Monitoring

Purpose

This document describes how to configure Nagios XI to support multi-tenancy, so as to allow multiple users or clients to share access to a single Nagios XI instance, while ensuring those specific users have access only to hosts and services they are authorized for.

Target Audience

This document is designed for use by Nagios administrators, hosted service providers and companies that wish to expose different hosts and services to different departments, different clients, or similar situations where there needs to be segregated access to monitored entities.

Additional Resources

In addition to this document, Nagios administrators should be familiar with the following technical documents available at the Nagios Library (http://library.nagios.com):

- XI Users and Contacts

These documents provide supporting documentation needed 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 for
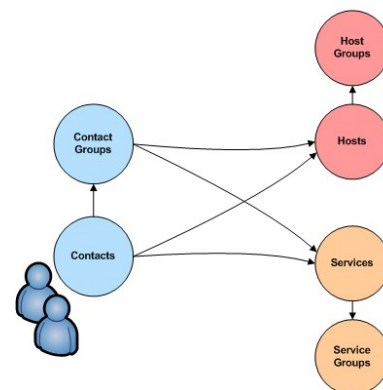
Permissions and Multi-Tenancy

A key component of multi-tenancy is the ability to restrict a given user's permissions to allow them to see and control only hosts and services they are authorized for. 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 the user (contact) is a member of

A key to understanding the relationships between objects and the corresponding permissions that contacts have is knowing 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
- Hosts and services may be members or one or more host groups or service groups, respectively

Nagios Enterprises, LLC
P.O. Box 8154
Saint Paul, MN 55108
USA

US: 1-888-NAGIOS-1
Int'l: +1 651-204-9102
Fax: +1 651-204-9103

Web: www.nagios.com
Email: sales@nagios.com

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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
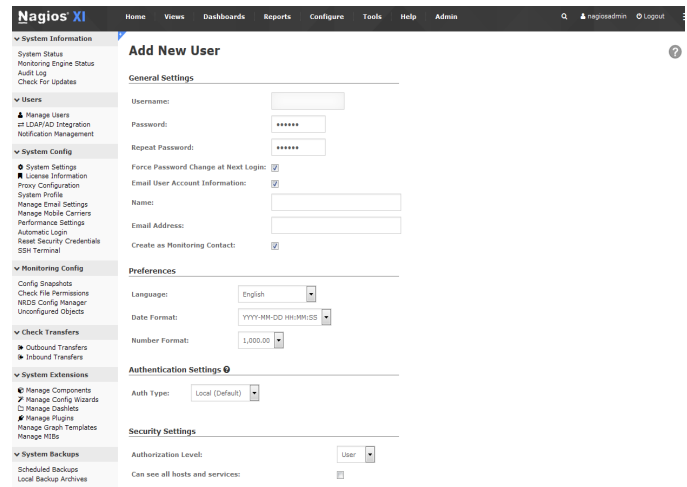-

Let's get started!

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.

Creating Users / Contacts

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

You can create new user accounts in Nagios XI by accessing the **Admin → Manage Users** menu and selecting the **Add New User** option.

Each user that you create is automatically added as a monitoring contact that can be referenced in later configuration steps.
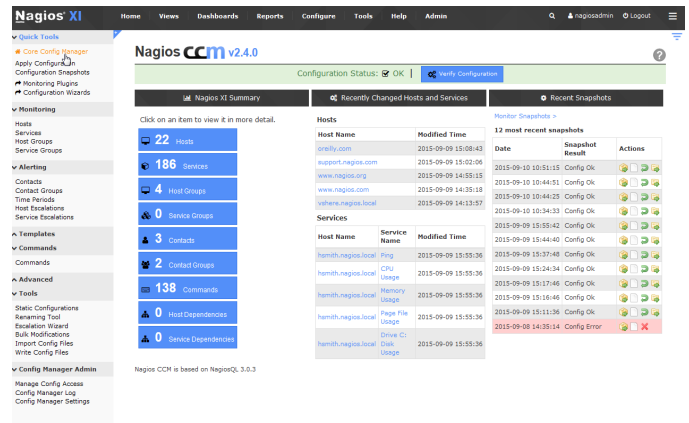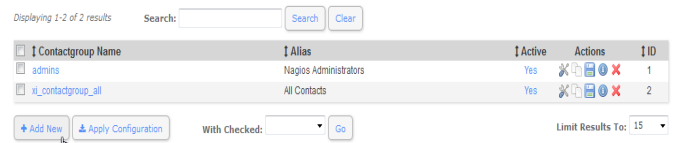
Defining Contact Groups

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.

You can add a new contact group by:

- Entering the *Nagios Core Config Manager* (**Admin → Core Config Manager**)
- Selecting the **Contact Groups** menu item
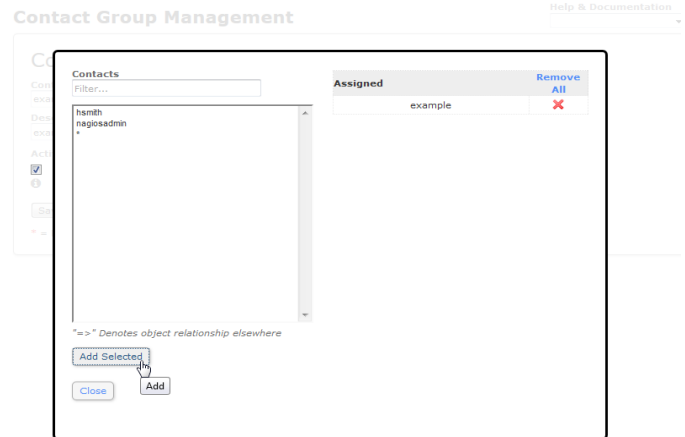- Clicking the **Add New** button in the Contact Group Management screen

When adding a new contact group you will define a name and description for the group and select the members that should belong to it. Members can either be individual members or group members.

Groups members are other contact groups that are themselves a member of this group (a sub-group, but allowing for multiple group relationships on different levels).

Remember to save your settings after you modify a contact group and apply the configuration when done.

Nagios Enterprises

Nagios Enterprises, LLC
P.O. Box 8154
Saint Paul, MN 55108
USA

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Int'l: +1 651-204-9102
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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.

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. 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.

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. This is 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.

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.

You can define new host groups by:

- Entering the *Nagios Core Config Manager* (**Admin → Core Config Manager**)
- Selecting the **Host Groups** menu item
- Clicking the **Add New** button in the Host Group Management screen

Similar to contact groups, you can create host groups that have individual hosts and other host groups as their members.

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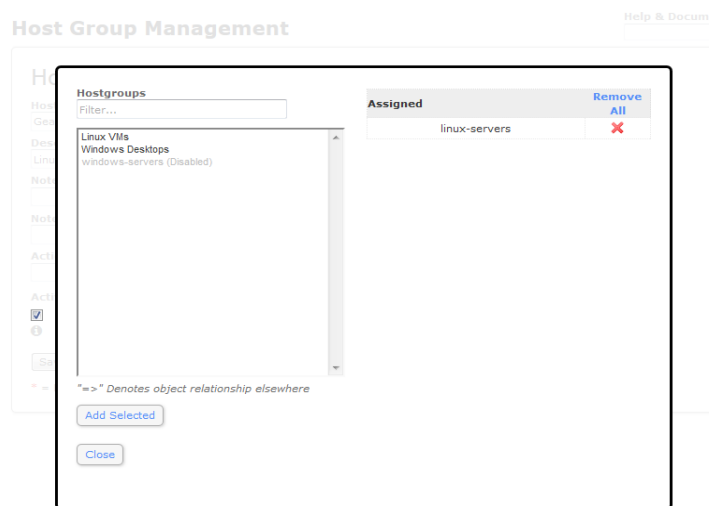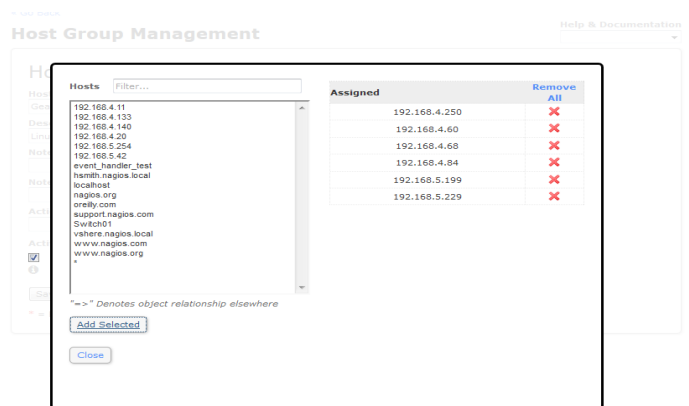
Service Groups

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 for creating service groups is similar to that of creating host groups, so we will not cover it separately here.

You can define new service groups by:

- Entering the *Nagios Core Config Manager* (**Admin → Core Config Manager**)
- Selecting the **Service Groups** menu item
- Clicking the **Add New** button in the Service Group Management screen

Nagios Enterprises, LLC
P.O. Box 8154
Saint Paul, MN 55108
USA

US: 1-888-NAGIOS-1
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Web: www.nagios.com
Email: sales@nagios.com

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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.
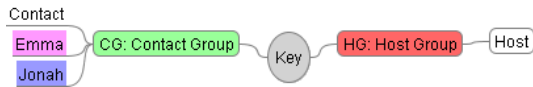
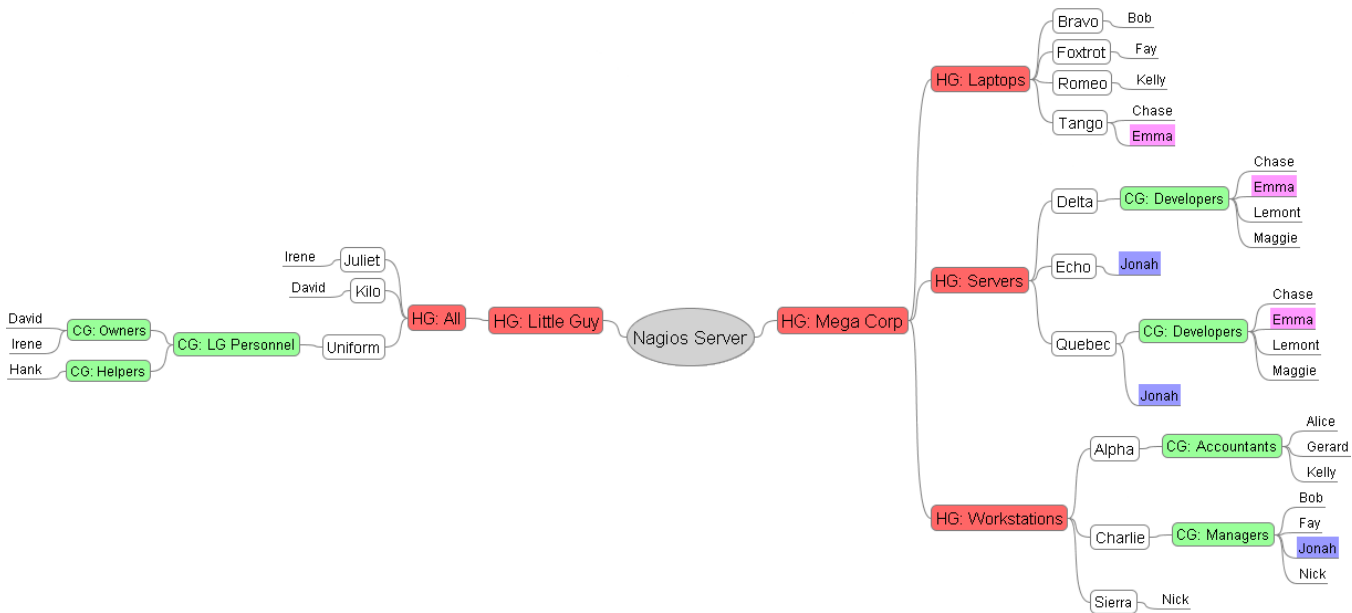We defined two client companies - Little Guy and Mega Corp - each of which had a single top-level contact group covering their entire company. Those top-level contact groups then had other sub-groups as their members, which were used to define roles or departments within the company. The sub-groups then had individual employees as their members. The image below represents the configuration we created.
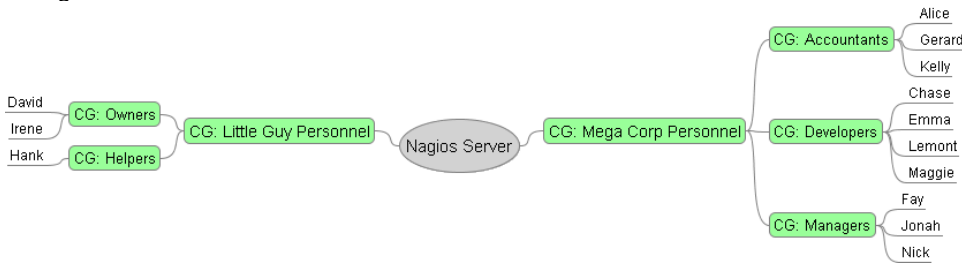
Top-level host groups were configured to contain each company's respective infrastructure elements. Sub-level host groups were defined to narrow the scope of included infrastructure elements for Mega Corp. The diagram below shows the hosts that are defined as members of various hostgroups, along with the the contact(s) and/or contact group(s) that were assigned to each host for notification purposes.

Nagios Enterprises, LLC
P.O. Box 8154
Saint Paul, MN 55108
USA

US: 1-888-NAGIOS-1
Int'l: +1 651-204-9102
Fax: +1 651-204-9103

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Email: sales@nagios.com

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Administrator View

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

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 below.

We logged into Nagios XI as *Jonah* and selected the Hostgroup Overview screen to see what hosts and host groups *Jonah* could see. The screenshot to the right shows that *Jonah's* view was limited to include only the hosts *Echo*, *Quebec*, and *Charlie*.

Non-Admin View #2: Emma

Another user *Emma* (highlighted in pink) 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 image to the right, *Emma* could only see the *Delta*, *Tango*, and *Quebec* servers when she logged in.

Conclusion

As you can see in the examples above, *Jonah* and *Emma* only see the hosts they have permission to. Neither sees any indication whatsoever of the other company (Little Guy) or any of their assets, nor of things within their own company that they have not been

Nagios Enterprises, LLC
P.O. Box 8154
Saint Paul, MN 55108
USA

US: 1-888-NAGIOS-1
Int'l: +1 651-204-9102
Fax: +1 651-204-9103

Web: www.nagios.com
Email: sales@nagios.com

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assigned as a notification contact for. That provides both security from the administrator's perspective and simplicity from the end user's perspective.

You can easily configure Nagios XI to support the same type of host grouping and user-specific permissions we demonstrated to enable effective multi-tenancy features.