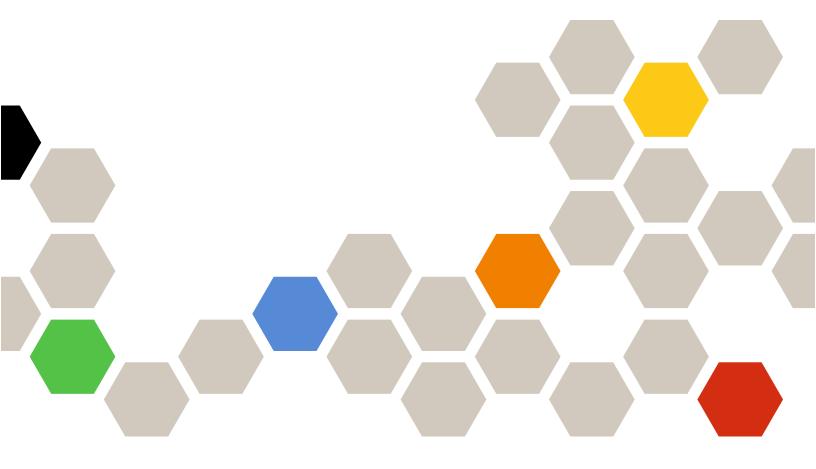# Lenovo XClarity Integrator for Nagios Installation and User Guide

Version 1.1.0

Note

Before using this information and the product it supports, read the information in Appendix A "Notices" on page 7.

Contents

About this publication

This book provides instructions for installing and using Lenovo XClarity Integrator for Nagios.

Lenovo XClarity Integrator (LXCI) for Nagios is a plug-in for Nagios that integrates with Lenovo XClarity Administrator (LXCA). It monitors the status and alerts, notifies administrator the asserted or de-asserted alerts, and finds potential problems of the Lenovo servers managed by multiple LXCA instances.

Conventions and terminology

Paragraphs that start with a bold **Note**, **Important**, or **Attention** are notices with specific meanings that highlight key information.

Note: These notices provide important tips, guidance, or advice.

Important: These notices provide information or advice that might help you avoid inconvenient or difficult situations.

Attention: These notices indicate possible damage to programs, devices, or data. An attention notice appears before the instruction or situation in which damage can occur.

PDF and web resources

Information about Lenovo XClarity Integrator for Nagios is available in Portable Document Format (PDF) files.

The following product publications are available in PDF format. To view a PDF file, you need Adobe Reader. You can download it at no charge from the Adobe Acrobat website.

Type of documentation	Version		
Installation and User Guide	• 1.1.0	• 1.0.1	• 1.0.0

Use the following links to learn more about Lenovo XClarity Integrator for Nagios and related resources.
- Lenovo XClarity Integrator for Nagios Support website
- Nagios webpage
- Lenovo XClarity Administrator online documentation

What's new in version 1.1.0

This topic provides an overview of features that are new to Lenovo XClarity Integrator for Nagios version 1.1.0.

Monitoring multiple Lenovo XClarity Administrator instances
You can monitor multiple Lenovo XClarity Administrator instances using the same script based on the XClarity Administrator name that is specified when you generate credentials. For more information, refer to Setting up Lenovo XClarity Integrator for Nagios.

Improved help and error handling
Improvements were made to the help content and error handling.

Chapter 1. Lenovo XClarity Integrator for Nagios

Lenovo XClarity Integrator (LXCI) for Nagios is a plug-in for Nagios that integrates with Lenovo XClarity Administrator (LXCA). It monitors the status and alerts, notifies administrator the asserted or de-asserted alerts, and finds potential problems of the Lenovo servers managed by multiple LXCA instances.

XClarity Integrator for Nagios supports the following features.
- View hardware status and alerts for Lenovo hardware that is managed by XClarity Administrator

  XClarity Integrator for Nagios supports all device types that are supported by XClarity Administrator, including servers, storage, and switches.
- Sends an email to an administrator when a new alert is asserted or de-asserted
- Works with other variations, such as Check_MK

Note: Device status and alerts *are not* provided in real-time. The frequency in which alerts and status is retrieved based 1.5 times the check-interval setting that is configured in Nagios.

Chapter 2. Planning and setting up Lenovo XClarity Integrator for Nagios

Use this procedure to plan for and set up Lenovo XClarity Integrator for Nagios.

Software requirements

The following requirements must be met.

- Lenovo XClarity Administrator v2.0 or later
- Nagios core
- OS required package:
  - libssl-dev
- Python v3.5.2 with the following PIP3 packages:
  - cryptography
  - keyring
  - keyrings.cryptfile
  - pbkdf2
  - requests
  - pycrypto

Supported devices

Lenovo XClarity Integrator for Nagios supports all device types that are supported by Lenovo XClarity Administrator, including servers, storage, and switches.

For more information, see Supported devices in the XClarity Administrator documentation.

Setting up Lenovo XClarity Integrator for Nagios

Use these steps to setup Lenovo XClarity Integrator for Nagios.

Before you begin

Ensure that the software requirements are met (see Software requirements).

Ensure that Nagios can connect to the target Lenovo XClarity Administrator.

Ensure that ports to the SMTP server are open.

Ensure that XClarity Administrator manages one or more devices that have alerts so that you can verify the setup.

By default, XClarity Integrator for Nagios uses Python `sendmail` function for sending emails. You can use the default standard Nagios e-mail function or the standard email plugin that you use for all other plugins by configuring the email function in XClarity Integrator for Nagios script

Important: When copying code snippets from this topic, pay special attention to the end-of-line characters, as they are different in Windows and Linux.

Procedure

To set up XClarity Integrator for Nagios, complete the following steps.

Step 1.   Download XClarity Integrator for Nagios (`xclarity_integrator_check.py`) to the `/usr/local/nagios/libexec` directory

Note: You can download XClarity Integrator for Nagios from the Nagios Exchange website or Lenovo Support website.

Step 2.   Optional: Edit the `xclarity_integrator_check.py` Python script, and modify the location where you want to store the `log_alerts`, `log_nodes`, `log_mail` and `certificate.pem` files.

By default, the script creates and saves these files in the `/home/nagios/logs` directory.

Step 3.   Run the `/usr/local/nagios/libexec/xclarity_integrator_check.py generate_credentials` command to set up XClarity Integrator for Nagios for each appropriate XClarity Administrator instance.

Important: You must run this command as the user that runs the XClarity Integrator for Nagios instance.

When prompted, specify the following data:
- URL for the XClarity Administrator instance (for example, `192.0.2.0`)
- User name and password to use to authenticate the XClarity Administrator instance
- Name that you want to use to identify the XClarity Administrator instance

Step 4.   Optional: Add the certificate for an XClarity Administrator that has a certificate that is signed by a root Certificate Authority by copying the certificate file (in PEM format) to the Nagios log directory.

Use the following format for the certificate file name: `certificate.pem`*<XCLARITY_ADMINISTRATOR_NAME>* (for example, certificate.pemLXCA_1).

Step 5.   Update the Nagios configuration files in the `/usr/local/nagios/etc/objects` directory to add the new plugin.
- **commands.cfg**
  1. Add the following definition to send emails.

     Important: The options that are specified in the following definition are appended with two dashes.

     ```
     define command{
         command_name     notify-by-email
         command_line     $USER1$/xclarity_integrator_check.py --notificationtype '$NOTIFICATIONTYPE$'
             --servicedesc '$SERVICEDESC$' --hostaddress '$HOSTADDRESS$' --servicestate '$SERVICESTATE$'
             --longdatetime '$LONGDATETIME$' --longserviceoutput '$LONGSERVICEOUTPUT$'
             --hostalias '$HOSTALIAS$' --contactemail '$CONTACTEMAIL$'
         }
     ```
  2. Add the following definition to verify the target XClarity Administrator instances. Add a separate definition for each XClarity Administrator instance.

     Important: The options that are specified in the following definition are appended with two dashes.

     ```
     define command {
         command_name <XCLARITY_ADMINISTRATOR_NAME>
         command_line $USER1$/xclarity_integrator_check.py --lxca <XCLARITY_ADMINISTRATOR_NAME>
     }
     ```

     Where *<XCLARITY_ADMINISTRATOR_NAME>* is the name of the XClarity Administrator instance that you specified in step 3.

For example:

```
define command {
    command_name LXCA_1
    command_line $USER1$/xclarity_integrator_check.py --lxca LXCA_1
}
```

- **localhost.cfg**

  Add the following definition for each XClarity Administrator instance.

```
define service{
    use                         local-service
    host_name                   localhost
    service_description         <XCLARITY_ADMINISTRATOR_NAME>
    check_command                <XCLARITY_ADMINISTRATOR_NAME>
    notifications_enabled       1
}
```

  Where *<XCLARITY_ADMINISTRATOR_NAME>* is the name of the XClarity Administrator instance that you specified in step 3.

  For example:

```
define service{
    use                         local-service
    host_name                   localhost
    service_description         LXCA_1
    check_command                LXCA_1
    notifications_enabled       1
}
```

- **contacts.cfg**

  Add the following definitions to define the email address of the contact or contact group that is to receive emails notifications.

```
define contact{
    use                             generic-contact
    contact_name                    <CONTACT_NAME>
    alias                           <CONTACT_FULL_NAME>
    email                           <CONTACT_EMAIL
    service_notification_commands   <SERVICE_COMMAND
}
```

  Where:
  - *<CONTACT_NAME>*. Short name for the contact
  - *<CONTACT_FULL_NAME>*. Full name for the contact
  - *<CONTACT_EMAIL*. Contact email address
  - *<SERVICE_COMMAND*. Command that you want to use for sending and receiving emails, To use Mailx, specify "notify-by-email." To use the standard Nagios email plugin, do not specify a value.

  For example:

```
define contact{
    use                             generic-contact
    contact_name                    John
    alias                           John Doe
    email                           JOHN_D@company.com
    service_notification_commands   notify-by-email
}
```

Step 6. Restart Nagios for the changes to take effect.

Step 7. From the Nagios portal, verify that "xclarity_integrator_check" is listed as a service under localhost.

Limit Results:	100 ▼						
Host ⬆⬇	Service ⬆⬇		Status ⬆⬇	Last Check ⬆⬇	Duration ⬆⬇	Attempt ⬆⬇	Status In
localhost	Current Load		OK	08-16-2018 10:57:44	2d 2h 33m 20s	1/4	OK - load
	Current Users		OK	08-16-2018 10:58:18	2d 2h 32m 42s	1/4	USERS C
	HTTP	🗙	WARNING	08-16-2018 10:58:52	2d 2h 32m 5s	4/4	HTTP WA
	PING		OK	08-16-2018 10:54:23	2d 2h 31m 27s	1/4	PING OK
	Root Partition		OK	08-16-2018 10:55:00	2d 2h 30m 50s	1/4	DISK OK
	SSH	🗙	OK	08-16-2018 10:55:32	2d 2h 30m 12s	1/4	SSH OK -
	Swap Usage		OK	08-16-2018 10:56:05	2d 2h 29m 35s	1/4	SWAP OF
	Total Processes		OK	08-16-2018 10:56:38	2d 2h 28m 57s	1/4	PROCS C
	Xclarity_integrator_check		OK	08-16-2018 10:59:13	0d 2h 35m 14s	1/4	Cezar7

Step 8. Click **xclarity_integrator_check** to display the current status, and verify the status is "OK."

Step 9. Create an alert condition in the target XClarity Administrator. Verify that an email is sent to the specified contacts, for example:

```
***** Nagios *****

Notification Type: PROBLEM

Service: xclarity_integrator_check
Host: localhost
Address: 192.0.2.0
State: CRITICAL

Date/Time:  Wed Jul 25 08:15:54 EDT 2018

Additional Information:

-----------------------------------------------
Node: SR530 with IP: 192.0.2.10, 192.0.2.11, is in Critical state with the following alerts:
All CPUs have failed with ERROR.
-----------------------------------------------
```

Appendix A. Notices

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