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ZENworks
Server Installation Guide

Legal Notice

Contents

About This Guide

This *ZENworks Server Installation Guide* includes information to help you successfully create a ZENworks Management Zone.

Before getting started with the creation of the Management Zone, ensure that you go through the Installation Overview section.

Audience

This guide is intended for ZENworks administrators.

Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the User Comments feature at the bottom of each page of the Online documentation.

Additional Documentation

ZENworks is supported by other documentation (in both PDF and HTML formats) that you can use to learn about and implement the product. For additional documentation, see the ZENworks documentation Web site.

1 Installation Overview

ZENworks 23.4 supports Windows, Linux, and Appliance. Setting-up a new ZENworks Management Zone with Windows or Linux server using ZENworks 23.4 Installer is not supported. However, you can use ZENworks 23.4 Appliance to setup a new zone.

If you want to setup a new zone using Windows or Linux Servers, you can use ZENworks 2020 Update 2 and then apply ZENworks 23.4 system update.

For more information on the product overview and know more about Primary Servers, Satellite Servers, ZENworks Agents, see ZENworks Overview. If you are not sure about Install, Upgrade or Update, see ZENworks - Do I Install, Upgrade, or Update?.

Depending on your requirements, you can refer to the following sections:

Creating a New Management Zone:

❐ Appliance Deployment (ZENworks 23.4)

❐ New Management Zone (ZENworks 2020 Update 2)

  — Using Windows as a Primary Server

  — Using Linux as a Primary Server

  After creating the ZENworks Management Zone (2020 Update 2), update to ZENworks 23.4. For more information, see ZENworks System Updates Reference

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NOTE: ZENworks 23.4 is the last version that supports Windows Primary Server.

Adding a new Server to an Existing Management Zone

❐ Adding a New Windows Primary Server (ZENworks 23.4)

❐ Adding a New Linux Primary Server (ZENworks 23.4)

❐ Configuring the Additional Primary Servers (ZENworks 23.4 Appliance)

Windows Installation

The following section provides information and instructions to help you install the ZENworks Primary Server software on a Windows server:

2 Windows Installation Workflow

By using the ZENworks 23.4 ISO you will only be able to add a new Primary Server to an existing zone. However, if you are planning to deploy the ZENworks Appliance, then you can create a new Management Zone or add a new Primary Server to an existing zone.

For more information on ZENworks Appliance, see ZENworks Appliance Deployment and Administration Reference.

The following sections provides a step-by-step procedure to add a new Primary Servers (secondary) to an existing ZENworks Management Zone.

- ZENworks Installation Workflow for Additional Windows Primary Servers
- Understanding What the ZENworks Installation Does
- Adding a New Windows Primary Server

ZENworks Installation Workflow for Additional Windows Primary Servers

To add a new Primary Server to your existing ZENworks Management Zone, complete the tasks in the order listed below.

Task		Details
☐	Review what the ZENworks installation program does when adding a Primary Server to an existing Management Zone.	When installing an additional Primary Server in a Management Zone, the installation program performs operations to install the Primary Server software, add the Primary Server to the existing Management Zone, install ZENworks Control Center, and start the ZENworks services.
☐	Update the software on the Windows server where you will install the ZENworks Primary Server.	Ensure that the Windows server software is up to date and that any software, such as anti-virus software, that might interfere with the Primary Server installation is updated and configured correctly.

Task	Details
☐ (Optional) Create an external certificate for your Primary Server.	If your ZENworks Management Zone is using the internal ZENworks Certificate Authority (CA), the new Primary Server is automatically issued a server certificate during installation. If your zone is using an external CA, you must provide the new Primary Server with a valid certificate issued from the external CA. For instructions about creating a certificate from an external CA, see Appendix A, "Creating an External Certificate," on page 43.
☐ Install the ZENworks Primary Server software on a supported Windows server.	Installation of an additional Primary Server is less complex than installation of the first Primary Server. The installation program only requires you to provide a target location for the software files, authentication information for the Management Zone (Primary Server address and Administrator login credentials), and files for the external certificate (if the zone is using an external CA).
☐ Verify that the Primary Server is running.	There are specific checks you can perform to ensure that installation of the software was successful and that the Primary Server is running.
☐ Back up the ZENworks Primary Server.	You should back up the Primary Server at least one time. For instructions, see "Backing Up ZENworks Components" on page 21.
☐ Review the post-installation tasks and complete any that apply to your Primary Server installation.	There are several post-installation tasks that you might need to perform for your Primary Server. Review the list of tasks and complete any that apply. For instructions, see Chapter 4, "Completing Post-Installation Tasks on Windows Servers," on page 19.

Understanding What the ZENworks Installation Does

The ZENworks installation program does the following during installation of any Primary Server:

- Installs the ZENworks Agent so that the server can be managed
- Installs ZENworks Control Center, the web console used to manage your ZENworks System
- Installs the zman command line utility
- Installs and starts the ZENworks services

3 Adding a New Windows Primary Server

This section provides a step-by-step procedure to add a new Primary Servers (secondary) to an existing ZENworks Management Zone.

- ◆ "Prerequisites" on page 13
- ◆ "Adding a new Primary Server to an Existing Management Zone" on page 13

Prerequisites

Before starting the procedure, ensure that you go through the following points:

- ◆ Ensure that the new server that you are adding to the zone meets all the requirements. For more information, see ZENworks System Requirements in the ZENworks Documentation site.
- ◆ Ensure that the first Primary Server is at ZENworks 23.4. If the first Primary Server is at a lesser version, then installation might fail.
- ◆ The first Primary Server should be up and running.
- ◆ If you are using an external database, then ensure that the database is up and running.
- ◆ If your ZENworks Management Zone is using the internal ZENworks Certificate Authority (CA), the new Primary Server is automatically issued a server certificate during installation.
- ◆ If your zone is using an external CA, you must provide the new Primary Server with a valid certificate issued from the external CA.
- ◆ Ensure that you have taken a reliable backup of the Primary Server.

Adding a new Primary Server to an Existing Management Zone

Installation of an additional Primary Server is less complex than installation of the first Primary Server. The procedure only requires you to provide a target location for the software files, administrator credentials, Primary Server Address, and files for the external certificate (if the zone is using an external CA)

NOTE: Ensure that you take a snapshot of the device before configuring ZENworks, as it is easy to roll back in case of any issues.

Perform the following steps to add a new Primary Server:

1 On the server, download and mount the ZENworks ISO.

2 Run setup.bat.

A command prompt will be displayed. Wait for a few minutes to display the configuration information which includes URLs and credentials to log into the ZENworks configuration wizard.

3 On the server that you want to add as Primary Server, open the URL in one of the ZENworks-supported browsers.

This URL can be accessed on any device within the network.

4 In the login page, specify the username and password that is displayed in the command prompt.

5 After login, the ZENworks License Agreement page is displayed.

Accept the terms of the license and click Accept.

6 In the Configure ZENworks Primary Server screen, select the Add this server to an existing Management Zone option, and then click Next.
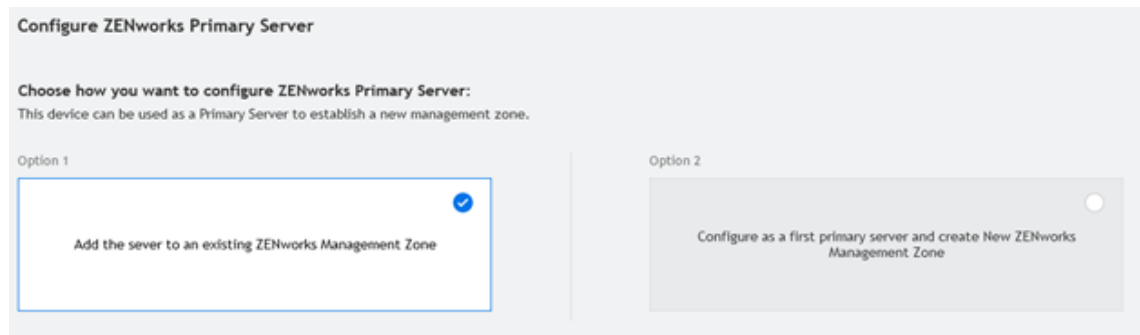
7 The Installation Directory screen is displayed. In this screen, specify a valid path where ZENworks should be installed, and then click Next.
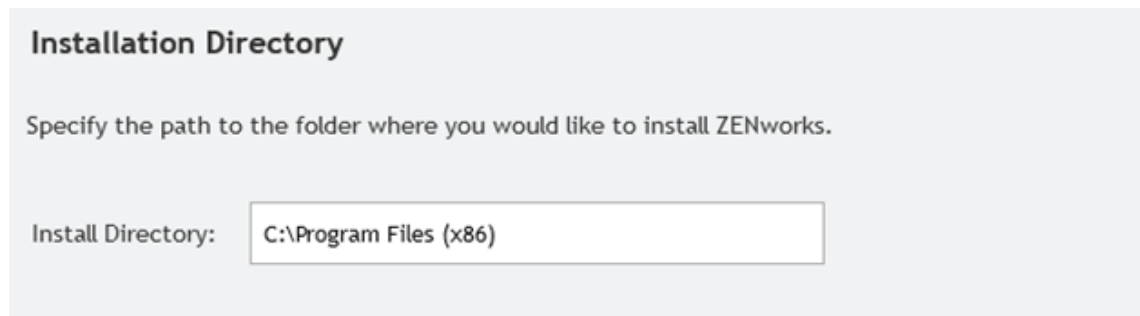
If you are using a Linux server, then this screen will not be displayed.

8 In the background, a system requirement check will be performed.

If the requirements are not met, then the essential system requirements will be displayed.

If errors are displayed, then you will not be able to proceed with the installation. Ensure that you adhere to the requirements before proceeding with the installation.

After making the necessary changes, click re-run System Check, to perform the system requirement check.

NOTE: If the server meets all the requirements, then the System Requirements Check screen will not be displayed.

For more information, go through the system requirements in the ZENworks documentation site.

9 Click Next.
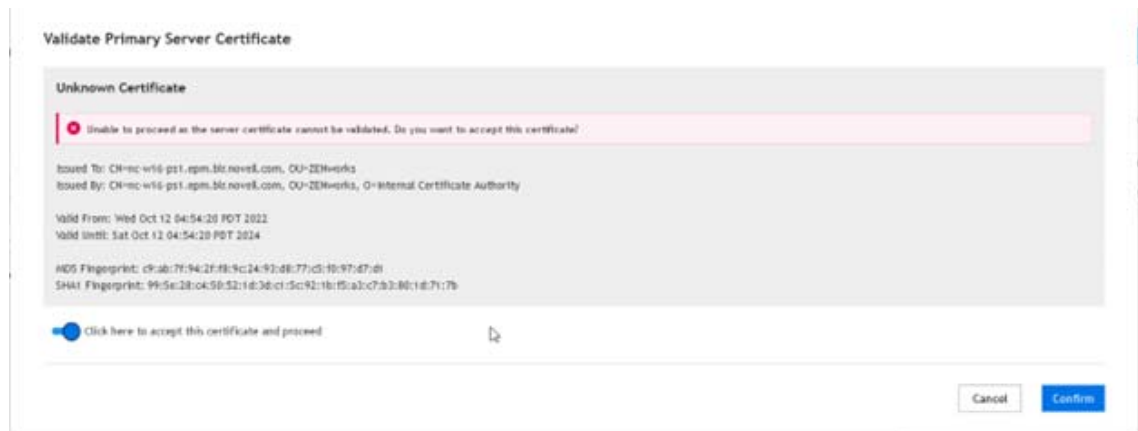
10 In the Connect to an Existing Primary Server screen, perform the following actions, and then click Next:

10a Primary Server: Specify the IP address or FQDN of the first Primary Server.

10b Port: Specify the port used by the first Primary Server.

10c Administrator: Specify the ZENworks administrator username.

10d Password: Specify the ZENworks administrator password.

The specified credentials will be validated.

11 If the specified credentials are valid, then you will be asked to validate the Primary Server Certificate.

If you are using an external CA, and if the certificate is not from a well known CA, then the following screen might be displayed.

12 Accept the certificate, and then click Confirm.

13 In the Open Ports page, ports that are needed by ZENworks are currently blocked by the server's Firewall is displayed.

Open the ports, and then click Next.

Open Ports

The ports mentioned below are needed by ZENworks, but they are currently blocked by the Firewall on the device. To proceed, enable Yes, open all the above-listed ports.

Port Details:

443 , 2645 , 7019 , 7443 , 7444 , 7628 , 8005 , 9971 , 54327 , 61491 , 61492 , 61495

● Yes, open all the above-listed ports.

The opened ports will be left open after completing the installation.

14 If the existing ZENworks Management Zone is using an internal CA, the new Primary Server is automatically issued a server certificate during installation.

For the server certificate validity specify a value between 1 and 10 for which the certificate should be valid.

If you are planning to use this server to manage mobile devices, then ensure that the certificate validity duration should not exceed 2 years.

Specify Certificate Validity

The zone is configured with an Internal Certificate Authority, which will now issue a certificate for this server. Specify the validity of the certificate to be issued to this server.

ⓘ Note: The validity should not exceed 2 years if this server will be configured as an MDM server.

Validity of Server Certificate*:   2 ⌄   years.

Specify the validity of the server certificate, and then click Next.

15 If you are using an external CA, then specify certificate details for the additional Primary Server.

- If an External certificate is used in the first Primary Server, choose the required certificate (**Server Certificate with Private Key** or **Server Certificate**). If you have used the **Generate CSR** link, then upload **Server Certificate**. Based on the certificate specify the following details:

  - **Server Certificate:** Browse to the signed certificate to be used for this server.

    The certificate must be a SubCA (approved by SubCA) and CA (Approved by root CA) certificates in order:

    ====Beginning of the Certificate File====

    =[Server Certificate]=

    =[SubCA Certificate]=

    =[CA Certificate]=

    ====End of the Certificate File====

  - **Private Key File:** This field is enabled if you select the **Server Certificate with Private Key** option. Browse to the **.der** private key file that is associated with the signed certificate.

    To convert the PEM file to DER file, use the following command:

    ```
    openssl pkcs8 –topk8 –nocrypt –in privateKey.key –inform PEM –
    out key.der –outform DER
    ```

To verify the privateKey.key file, use the following command:

```
openssl rsa -in privateKey.key -check
```

16 The Summary page displays all the information that was provided while configuring. If any modifications are needed, click Previous.
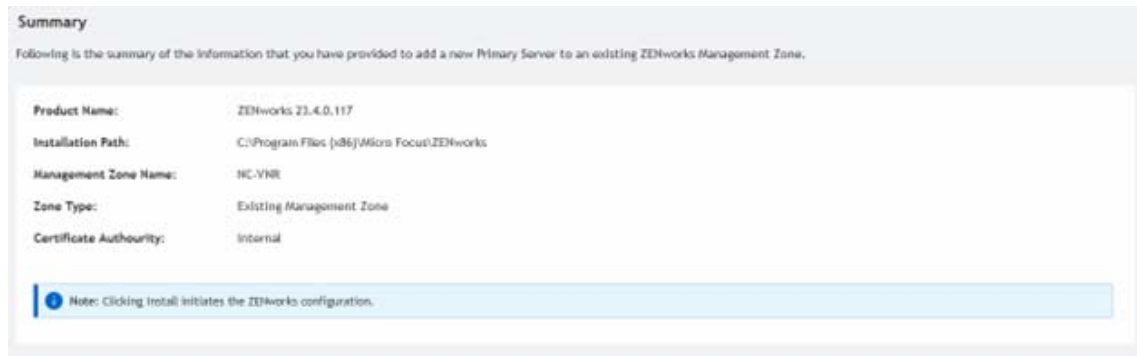
17 To initiate the installation, click Install.

ZENworks installation will be initiated, and the status of the installation will be displayed.
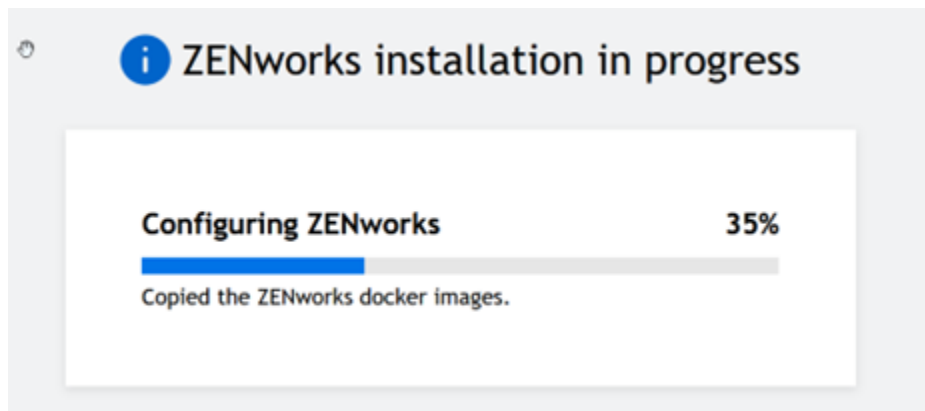
After the installation is completed, you will be asked to restart the system. You can either reboot the server, or you can reboot the server later.
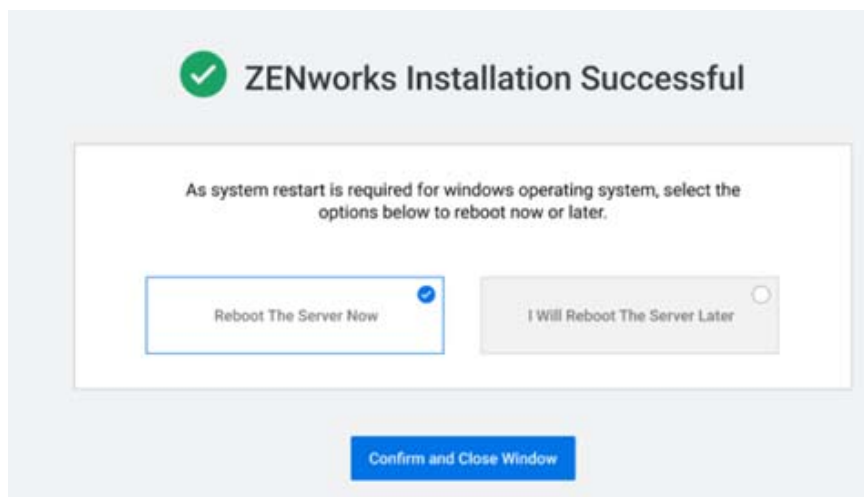
It is recommended that you restart the server so that settings are applied successfully.

After successfully adding the new Primary server, ensure that you go through Completing Post-Installation Tasks on Windows Servers.

If the installation fails, then a link to download the log files will be displayed on the screen. click the link and download the log files to troubleshoot the issues.

If you are facing any issues, then go through the Troubleshooting section.

4 Completing Post-Installation Tasks on Windows Servers

After successfully installing the ZENworks Primary Server software, you might need to perform some of the following post-installation tasks. Not all tasks are required for all installations. However, we recommend that you review each section to ensure that you complete any tasks required for your installation.

- "Licensing Products" on page 19
- "Enabling Access to a Primary Server Behind a NAT Firewall" on page 20
- "Adding Imaging Applications as Firewall Exceptions" on page 20
- "Backing Up ZENworks Components" on page 21
- "Customizing ZENworks Control Center" on page 21
- "Supporting a Primary Server on VMware ESX" on page 21

Licensing Products

During the installation of your first ZENworks Primary Server and the creation of your Management Zone, the ZENworks installation program installs the following products and sets their license state as listed in the table.

Product	License State
Asset Inventory for Linux	Evaluation
Asset Inventory for Windows/Macintosh	Deactivated
Asset Management	Evaluation
Configuration Management	Evaluation
Endpoint Security Management	Deactivated
Full Disk Encryption	Deactivated
Patch Management	Activated

You activate a product by supplying a valid product license. If you do not have a valid license, you can evaluate the product for 60 days.

To change the license state of a product:

1 Log in to ZENworks Control Center.
2 Click **Configuration**.

3 In the **Licenses** panel, click a suite if you have a suite license key.

or

Click a product to provide a product license key or to turn on the product evaluation.

For more information about activating and deactivating products, see the *ZENworks Product Licensing Reference*.

Enabling Access to a Primary Server Behind a NAT Firewall

If the Primary Server is behind a NAT firewall, the devices on the Internet or public network cannot communicate with it. To resolve the issue, you must configure additional IP addresses or DNS names for the Primary Server through ZENworks Control Center.

For more information, see "Configuring Additional Access to a ZENworks Server" in the *ZENworks Primary Server and Satellite Reference*.

Adding Imaging Applications as Firewall Exceptions

The ZENworks installation program cannot add exceptions to a Windows server firewall. Therefore, you must manually complete this task under the following conditions:

 • The Primary Server will be an Imaging Server.

 • The Primary Server will be the parent Primary Server of an Imaging Satellite Server.

Refer to the appropriate section for the Primary Server's operating system:

 • "Adding Imaging Applications as Firewall Exceptions on Windows Server 2012 and 2016" on page 20

Adding Imaging Applications as Firewall Exceptions on Windows Server 2012 and 2016

1 Open Control Panel, and then open Windows Firewall.

2 In the left pane, click the **Allow an app or feature through Windows Firewall** option.

3 In the Allowed apps window, click **Allow another app**.

4 In the Add an app window, click **Browse** and select the `novell-pbserv.exe` application.

All Imaging applications, are located in the `%zenworks_home%\novell\zenworks\bin\preboot` directory.

5 After selecting the application, click **Add**.

6 Repeat Step 4 and Step 5, add the following Imaging applications to the Allowed apps and features list, and then click **OK**:

   • `novell-proxydhcp.exe`

   • `novell-tftp.exe`

   • `novell-zmgprebootpolicy.exe`

Backing Up ZENworks Components

We recommend that you implement the following backup best practices:

- Take reliable backups of the ZENworks database and Audit database on a regular basis. For instructions, see the *ZENworks Database Management Reference*.
- Procure and note the credentials of the databases:
  - For the embedded PostgreSQL ZENworks database, use the following command:

    ```
    zman dgc -U administrator_name -P administrator_password
    ```
  - For the embedded PostgreSQL Audit database, use the following command:

    ```
    zman dgca -U administrator_name -P administrator_password
    ```
  - For an external database, contact the database administrator.
- Take a reliable backup of the Primary Server (this only needs to be done one time). For instructions, see "Backing Up and Restoring the ZENworks Server and Certificate Authority"in the *ZENworks Disaster Recovery Reference*.
- Take a reliable backup of the Certificate Authority. For instructions, see "Backing Up the Certificate Authority"in the *ZENworks Disaster Recovery Reference*.

Customizing ZENworks Control Center

ZENworks Control Center provides a configuration file that you can use to customize how it functions. For example, you can change the default timeout from 30 minutes to another value.

For instructions, see "Customizing ZENworks Control Center" in the *ZENworks Control Center Reference*.

Supporting a Primary Server on VMware ESX

If you installed the Primary Server software on a virtual machine running on VMware ESX, complete the following tasks:

- "Adjusting the Reserved Memory Size" on page 21
- "Enabling Large Page Support" on page 22

Adjusting the Reserved Memory Size

For optimal performance, set the reserved memory size to the size of the guest operating system memory. For more information, see TID 7005382 in Novell Support Knowledgebase (http://support.novell.com/search/kb_index.jsp).

Enabling Large Page Support

For optimal performance of large dataset handling, you should enable Java large page support:

1 At the server's command prompt, run the following command to launch the ZENworks Server Properties dialog box:

   `ZENworksAdminMgmtw`

2 In the Java tab, add the following option to the Java Options box:

   `-XX:+UseLargePages`

   Ensure that you add the option on its own line.

3 Restart the Primary Server:

   3a Click Start > Settings > Control Panel > Administrative Tools > Services.

   3b Select Micro Focus ZENworks Administration Management, then click Restart in the left pane.

NOTE: If the ZENworks Administration Management service fails to start, there is a compatibility problem with the newly added option, or the syntax is incorrect.

The log file is available in the following location which includes all the error information:

`%ZENSERVER_HOME%\logs\admin-mgmt\catalina.out`

II Linux Installation

The following section provides information and instructions to help you install the ZENworks Primary Server software on a Linux server:

- Chapter 5, "Linux Installation Workflow," on page 25
- Chapter 6, "Adding a New Linux Primary Server," on page 27
- Chapter 7, "Completing Post-Installation Tasks on Linux Servers," on page 37

5 Linux Installation Workflow

By using the latest ZENworks ISO, you will only be able to add a new Primary Server to an existing zone. However, if you are deploying the ZENworks Appliance, then you can create a new Management Zone or add a new Primary Server to an existing zone.

For more information on ZENworks Appliance, see ZENworks Appliance Deployment and Administration Reference.

The following sections provides a step-by-step procedure to add a new Primary Servers (secondary) to an existing ZENworks Management Zone.

- Installation Workflow for Additional Linux Primary Servers
- Understanding What the ZENworks Installation Does
- Adding a New Linux Primary Server

Installation Workflow for Additional Linux Primary Servers

To install a ZENworks Primary Server and add it to your existing ZENworks Management Zone, complete the tasks in the order listed below.

Task	Details
☐ Install the required software on the Linux device before you start the ZENworks installation.	Before installing ZENworks on a Linux Primary Server, you are required to install Docker and Docker Compose on the server. For more information on Dockers, seehttps://docs.docker.com/. For more information on Installing Docker and Docker Compose see, Installing Docker and Docker Compose.
☐ Review what the ZENworks installation does when adding a Primary Server to an existing Management Zone.	When installing an additional Primary Server in a Management Zone, the installation program performs operations to install the Primary Server software, add the Primary Server to the existing Management Zone, install ZENworks Control Center, start the ZENworks services.
☐ Update the software on the Linux server where you will install the ZENworks Primary Server.	Ensure that the Linux server software is up to date and that any software, such as anti-virus software, that might interfere with the Primary Server installation is updated and configured correctly.

Task	Details
☐ (Optional) Create an external certificate for your Primary Server.	If your ZENworks Management Zone is using the internal ZENworks Certificate Authority (CA), the new Primary Server is automatically issued a server certificate during installation. If your zone is using an external CA, you must provide the new Primary Server with a valid certificate issued from the external CA. For instructions about creating a certificate from an external CA, see Appendix A, "Creating an External Certificate," on page 43.
☐ Install the ZENworks Primary Server software on a supported Linux server.	Installation of an additional Primary Server is less complex than installation of the first Primary Server. The installation program only requires you to provide a target location for the software files, authentication information for the Management Zone (Primary Server address and Administrator login credentials), and files for the external certificate (if the zone is using an external CA).
☐ Verify that the Primary Server is running.	There are specific checks you can perform to ensure that installation of the software was successful and that the Primary Server is running. For instructions, see "Verifying the Installation" on page 34.
☐ Back up the ZENworks Primary Server.	You should back up the Primary Server at least one time. For instructions, see "Backing Up ZENworks Components" on page 38.
☐ Review the post-installation tasks and complete any that apply to your Primary Server installation.	There are several post-installation tasks that you might need to perform for your Primary Server. Review the list of tasks and complete any that apply. For instructions, see Chapter 7, "Completing Post-Installation Tasks on Linux Servers," on page 37.

Understanding What the ZENworks Installation Does

The ZENworks installation program does the following during installation of any Primary Server:

- Installs the ZENworks Agent so that the server can be managed
- Installs ZENworks Control Center, the web console used to manage your ZENworks System
- Installs the zman command line utility
- Installs and starts the ZENworks services

6 Adding a New Linux Primary Server

This section provides a step-by-step procedure to add a new Primary Servers (secondary) to an existing ZENworks Management Zone

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NOTE: After installing the first Primary Server, ZooKeeper is automatically enabled on the first Primary Server. You need to ensure that ZooKeeper is up and running at all times.

Installing Docker and Docker Compose

As ZENworks aims to adopt a more robust and flexible architecture, you are required to install Docker and Docker Compose on the Linux Primary Server on which the ZENworks server software will be installed.

- **Docker Version:** Docker v19.x or higher should be installed on the server on which the ZENworks Primary Server software will be installed.
- **Docker Compose Version:** Docker Compose v1.28.x or higher should be installed on the server on which the ZENworks Primary Server software will be installed.

Installing Docker

The procedure detailed in this section will enable you to download the latest version of Docker.

1 After registering to SUSE Customer Center, generate a registration key for the operating system version of your Primary Server and register the device with the SUSE Customer Center.

2 Start YaST.

3 In the Administrator Settings window, select **Software** > **Software Repositories**.

4 Click **Add** to open the **Add On Product** dialog box.

5 Select **Extensions and Modules from the Registration Server...**. Click **Next**.

6 From the list of **Available Extensions and Modules**, based on the platform version, select one of the following container modules. Click **Next** and **Finish** the wizard. The modules and its repositories will be added to your system.

- **SLES 12 SP3, SLES 12 SP4, SLES 12 SP5:** Containers Module 12 x86_64

- **SLES 15:** Containers Module 15 x86_64
- **SLES 15 SP1:** Containers Module 15 SP1 x86_64

7 On the Linux terminal, execute the following command to install the Docker package:

```
$ sudo zypper install docker
```

NOTE: If the `zypper install docker` command fails to install docker, then run the following command to check whether the container module has been added to the repository:

```
$ sudo zypper ls
```

If the container module has not been added, then run the following command to add the container module:

For SLES 12 SP3, SLES 12 SP4, SLES 12 SP5:

```
$ sudo SUSEConnect -p sle-module-containers/12/x86_64
```

For SLES 15:

```
$ sudo SUSEConnect -p sle-module-containers/15/x86_64
```

For SLES 15 SP1:

```
$ sudo SUSEConnect -p sle-module-containers/15.1/x86_64
```

8 Execute the following command to enable the Docker services:

```
$ sudo systemctl enable docker.service
```

9 Execute the following command to start the Docker service:

```
$ sudo systemctl start docker.service
```

10 Execute the following command to test whether Docker has been installed properly:

```
$ docker run hello-world
```

If the message `Hello from Docker!` is displayed, then it indicates that Docker has been installed successfully.

Installing Docker Compose

Before installing Docker Compose, ensure that you have already installed the Docker engine as elaborated in the previous section.

1 On the Linux terminal, run the following command to download the latest release of Docker Compose, in this case Docker Compose version 1.28.2:

```
$ sudo curl -L "https://github.com/docker/compose/releases/download/
1.28.2/docker-compose-$(uname -s)-$(uname -m)" -o /usr/local/bin/
docker-compose
```

NOTE: If the server does not have Internet access and communicates through a proxy server, then refer to the curl man page for configuring curl to use proxy.

2 Run the following command to apply executable permissions to the binary:

```
$ sudo chmod +x /usr/local/bin/docker-compose
```

NOTE: If the `docker-compose` command fails after installation, check the path. You can also create a symbolic link to `/usr/bin` or any other directory in your path.

Example:

```
$ sudo ln -s /usr/local/bin/docker-compose /usr/bin/docker-compose
```

3 Test the installation by running the following command. The Docker Compose version will be displayed.

```
$ docker-compose --version
```

NOTE: The latest release versions of Docker Compose is published in https://github.com/docker/compose/releases. To upgrade to the latest release, follow the steps displayed under the **Linux** tab in https://docs.docker.com/compose/install/. However, before upgrading Docker Compose to the latest version, ensure that you stop the ZENworks services. For more information on stopping these services, see Stopping the ZENworks Services.

Changing the Internal Docker IP

By default, docker internally uses the IP 172.17.0.1/16. In case this IP conflicts with any other device or network in your organization, only then the docker IP should be changed.

To change the internal docker IP that is being used, perform the following steps:

1. Stop all the ZENworks services by running the `microfocus-zenworks-configure -c Start` command.

2. Modify the `daemon.json` file available in the `/etc/docker/`, and add the line *"bip":"<IP_address>",* to the start of the file, as shown in the below image:

    ```
    {
      "bip":"192.168.2.1/24",
      "log-level": "warn",
      "log-driver": "json-file",
      "log-opts": {
        "max-size": "10m",
        "max-file": "5"
      }
    }
    ```

    NOTE: You can use any private IP that is not being used by your organization.

    In above example we have used *192.168.2.1/24*

3. Restart the docker service by running the following command:

    ```
    systemctl restart docker
    ```

4. Start all the ZENworks services by running the `microfocus-zenworks-configure -c Start` command.

Zocker

Zocker is used for patching the Primary Servers in the zone.

Applying the Zocker Patch

The patch can be applied on both Windows and Linux. To apply the patch run the following command:

zocker patch apply -file <location_ patch.tar>

Example: zocker patch apply -file D:\patchfile20.2.0.567.tar

Reverting the Patch

Using the revert command, you can revert to the last good-known version or a specific version. To revert the patch, run the following command:

 * To revert to a last known good version: zocker patch revert -image zenserver
 * To revert to a specific version: zocker patch revert -image zenserver:<version>

   Example: zocker patch revert -image zenserver:20.2.0.567

   The server will be reverted to the 20.2.0.567 version.

Adding a New Primary Server

This section provides a step-by-step procedure to add new Primary Servers (secondary) to an existing ZENworks Management Zone.

Prerequisites

Before starting the procedure, ensure that you go through the following points:

 * Ensure that the new server that you are adding to the zone meets all the requirements. For more information, see System Requirements in the ZENworks Documentation site.
 * Ensure that you have installed Docker and Docker Compose on the Linux Primary Server on which the ZENworks server software will be installed.
 * Ensure that the first Primary Server is at ZENworks 23.4. If the first Primary Server is at a lesser version, then installation might fail.
 * The first Primary Server should be up and running.
 * If you are using an external database, then ensure that the database is up and running.
 * If your ZENworks Management Zone is using the internal ZENworks Certificate Authority (CA), the new Primary Server is automatically issued a server certificate during installation.
 * If your zone is using an external CA, you must provide the new Primary Server with a valid certificate issued from the external CA.
 * Ensure that you have taken a reliable backup of the Primary Server.

Adding a new Primary Server to an Existing Management Zone

Installation of an additional Primary Server is less complex than installation of the first Primary Server. The procedure only requires you to provide a target location for the software files, administrator credentials, Primary Server Address, and files for the external certificate (if the zone is using an external CA).


NOTE: Ensure that you take a snapshot of the device before configuring ZENworks, as it is easy to roll back in case of any issues.

Perform the following steps to add a new Primary Server:

1 Log into the installation server as a Linux administrator.

2 Download the ZENworks ISO.

3 Mount the ISO by running the command mount -o loop <ISO path including name> <mount_path>.

4 cd to the mounted location and run ./setup.sh.

   A command prompt will be displayed. Wait for a few minutes to display the configuration information which includes URLs and credentials to log into the ZENworks configuration wizard.

5 On the server that you want to add as Primary Server, open the URL in one of the ZENworks-supported browsers.

   This URL can be accessed on any device within the network.

6 In the login page, specify the username and password that is displayed in the command prompt.

7 After login, the ZENworks License Agreement page is displayed.

   Accept the terms of the license and click Accept.

8 In the Configure ZENworks Primary Server screen, select the Add this server to an existing Management Zone option, and then click Next.
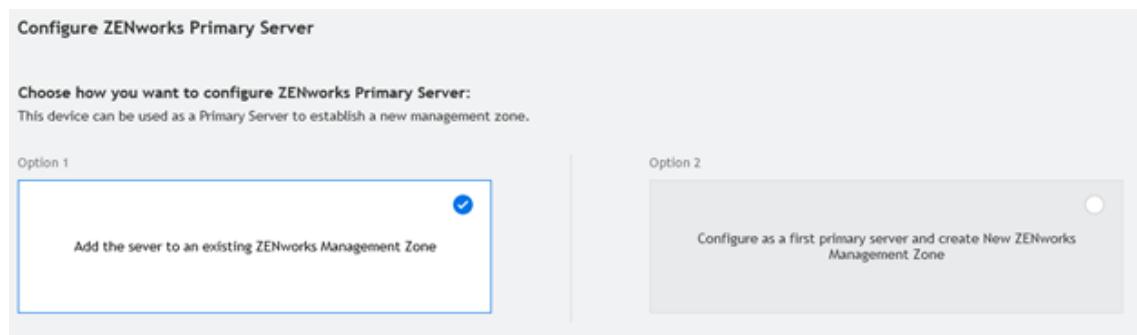
9 In the background, a system requirement check will be performed.

   If the requirements are not met, then the essential system requirements will be displayed.

   If errors are displayed, then you will not be able to proceed with the installation. Ensure that you adhere to the requirements before proceeding with the installation.

   After making the necessary changes, click re-run System Check, to perform the system requirement check.

Note: If the server meets all the requirements, then the System Requirements Check screen will not be displayed.

For more information, go through the system requirements in the ZENworks documentation site.

10 Click Next.

11 In the Connect to an Existing Primary Server screen, perform the following actions, and then click Next:

11a Primary Server: Specify the IP address or FQDN of the first Primary Server.

11b Port: Select the port used by the first Primary Server.

11c Administrator: Specify the ZENworks administrator username.

11d Password: Specify the ZENworks administrator password.

The specified credentials will be validated.

12 If the specified credentials are valid, then you will be asked to validate the Primary Server Certificate, if the first Primary Server is using an internal certificate.

If you are using an external CA, and if the certificate is not from a well known CA, then the following screen might be displayed.

13 Accept the certificate, and then click Confirm.

14 In the Open Ports page, ports that are needed by ZENworks are currently blocked by the server's Firewall is displayed.

Open the ports, and then click Next.

The opened ports will be left open after completing the installation.

15 If the existing ZENworks Management Zone is using an internal CA, the new Primary Server is automatically issued a server certificate during installation.

For the server certificate validity specify a value between 1 and 10 for which the certificate should be valid.

If you are planning to use this server to manage mobile devices, then ensure that the certificate validity duration should not exceed 2 years.
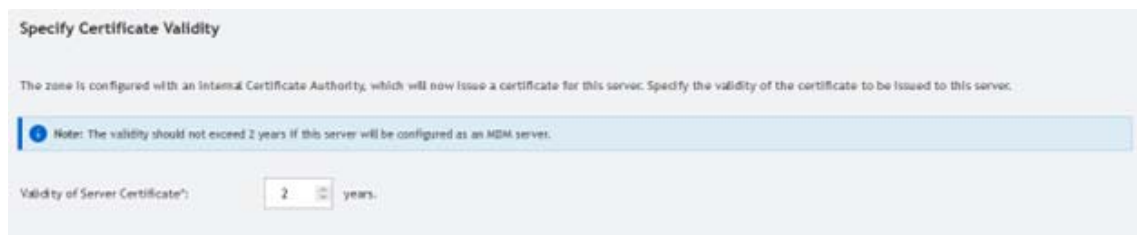
Specify the validity of the server certificate, and then click Next.

16 If you are using an external CA, then specify certificate details for the additional Primary Server.

- If an External certificate is used in the first Primary Server, choose the required certificate (**Server Certificate with Private Key** or **Server Certificate**). If you have used the **Generate CSR** link, then upload **Server Certificate**. Based on the certificate specify the following details:

  - **Server Certificate:** Browse to the signed certificate to be used for this server.

    The certificate must be a SubCA (approved by SubCA) and CA (Approved by root CA) certificates in order:

    ====Beginning of the Certificate File====

    =[Server Certificate]=

    =[SubCA Certificate]=

    =[CA Certificate]=

    ====End of the Certificate File====

  - **Private Key File:** This field is enabled if you select the **Server Certificate with Private Key** option. Browse to the **.der** private key file that is associated with the signed certificate.

    To convert the PEM file to DER file, use the following command:

    ```
    openssl pkcs8 –topk8 –nocrypt –in privateKey.key –inform PEM –
    out key.der –outform DER
    ```

To verify the privateKey.key file, use the following command:

```
openssl rsa -in privateKey.key -check
```

17 The Summary page displays all the information that was provided while configuring. If any modifications are needed, click Previous.
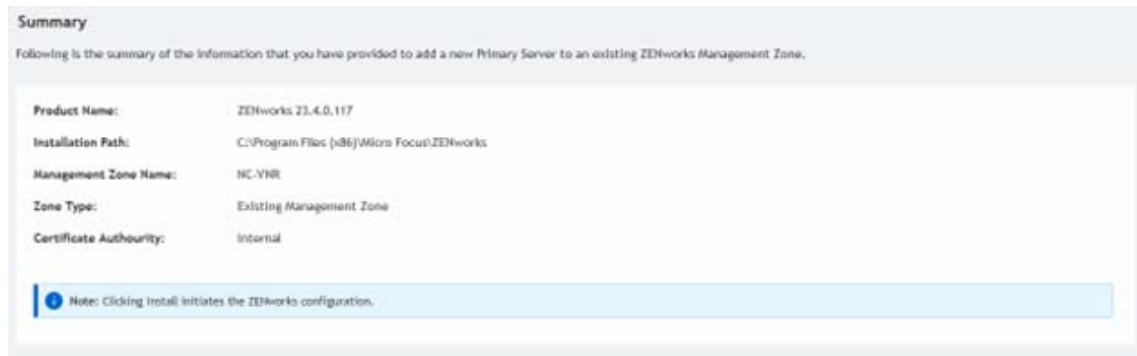
18 To initiate the installation, click Install.

ZENworks installation will be initiated, and the status of the installation will be displayed.
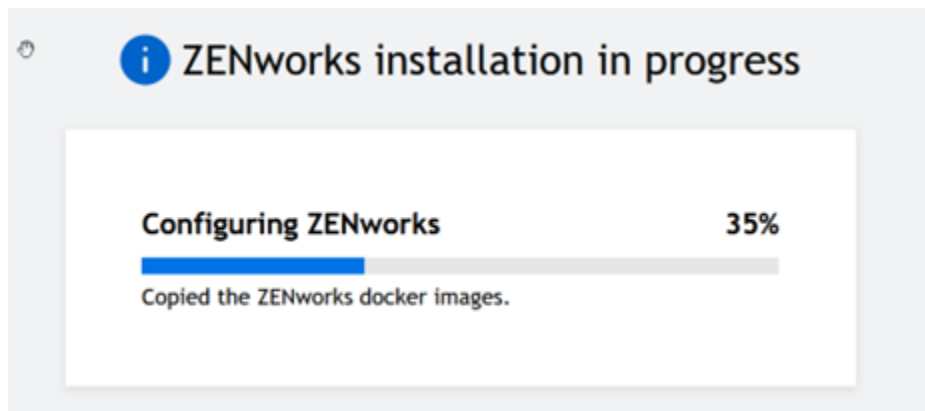
After successfully adding the new Primary server, ensure that you go through Completing Post-Installation Tasks on Linux Servers.

If the installation fails, then a link to download the log files will be displayed on the screen. click the link and download the log files to troubleshoot the issues.

If you are facing any issues, then go through the Troubleshooting section.

Verifying the Installation

Perform the following steps if you want to verify a successful installation.

1 After the installation has completed, do any of the following to verify that ZENworks is running:

- **Run ZENworks Control Center**

  If ZENworks Control Center did not automatically start, use the following URL to open it in a web browser:

  https://*DNS_name_or_IP_address_of_Primary_Server*/zenworks

NOTE: If the Primary Server is not using the default HTTPS port, you must add the port to the URL: https://*DNS_name_or_IP_address_of_Primary_Server:port_number*/zenworks

This can be done either on the server where you just installed ZENworks, or on a qualified workstation.

- **Check the Linux services by using the configuration command**

  On the server, run the following command:

  ```
  /opt/microfocus/zenworks/bin/microfocus-zenworks-configure
  -c SystemStatus
  ```

  This lists all ZENworks services and their statuses.

  To start the services, run the following command:

  ```
  /opt/microfocus/zenworks/bin/microfocus-zenworks-configure -c Start
  ```

- **Check the Linux services by using the specific services' commands**

  On the server, run the following commands:

  ```
  microfocus-zenworks-configure -c Start
  ```

  If the services are not running, run the following commands to start the ZENworks services:

  ```
  microfocus-zenworks-configure -c Start
  ```

7 Completing Post-Installation Tasks on Linux Servers

After successfully installing the ZENworks Primary Server software, you might need to perform some of the following post-installation tasks. Not all tasks are required for all installations. However, we recommend that you review each section to ensure that you complete any tasks required for your installation.

Licensing Products

During the installation of your first ZENworks Primary Server and the creation of your Management Zone, the ZENworks installation program installs the following products and sets their license state as listed in the table.

Product	License State
Asset Inventory for Linux	Evaluation
Asset Inventory for Windows/ Macintosh	Deactivated
Asset Management	Evaluation
Configuration Management	Evaluation
Endpoint Security Management	Deactivated
Full Disk Encryption	Deactivated
Patch Management	Activated

You activate a product by supplying a valid product license. If you do not have a valid license, you can evaluate the product for 60 days.

To change the license state of a product:

1 Log in to ZENworks Control Center.

2 Click **Configuration**.

3 In the **Licenses** panel, click a suite if you have a suite license key.

or

Click a product to provide a product license key or to turn on the product evaluation.

For more information, see the *ZENworks Product Licensing Reference*.

Adding Imaging Applications as Firewall Exceptions

The ZENworks installation program cannot add exceptions to a Linux server firewall. Therefore, you must manually complete this task under the following conditions:

* The Primary Server will be an Imaging Server.
* The Primary Server will be the parent Primary Server of an Imaging Satellite Server.

If you turn on the firewall on the Primary Server, you must configure the server to allow the following ZENworks Imaging applications through the firewall by adding them to the Firewall Exceptions list:

* `novell-pbserv.exe`
* `novell-proxydhcp.exe`
* `novell-tftp.exe`
* `novell-zmgprebootpolicy.exe`

Supporting ZENworks 11.x Device Upgrades

If you have ZENworks 11.x managed devices or Satellite Servers in your network and want to register the devices to a new ZENworks Management Zone so that they can be automatically upgraded to ZENworks, you must import the ZENworks System Update into the zone from the ZENworks installation media.

Backing Up ZENworks Components

We recommend that you implement the following backup best practices:

* Take a reliable backup of the ZENworks database and Audit database on a regular basis. For more information on how to back up the ZENworks database, see the *ZENworks Database Management Reference*.
* Procure and note down the credentials of the database.
  * For an internal database, use the following commands:

    `zman dgc -U administrator_name -P administrator_password`
  * For the embedded PostgreSQL audit database, use the following commands:

    `zman dgca -U admimistrator_name -P administrator_password`
  * For an external database, contact the database administrator.

- Take a reliable backup of the ZENworks Server (this only needs to be done one time). For instructions, see "Backing Up and Restoring the ZENworks Server and Certificate Authority"in the *ZENworks Disaster Recovery Reference*.
- Take a reliable backup of the Certificate Authority. For instructions, see "Backing Up the Certificate Authority"in the *ZENworks Disaster Recovery Reference*.

Customizing ZENworks Control Center

ZENworks Control Center provides a configuration file that you can use to customize how it functions. For example, you can change the default timeout from 30 minutes to another value.

For instructions, see "Customizing ZENworks Control Center" in the *ZENworks Control Center Reference*.

Tasks for VMware ESX

- For optimal performance of the Primary Servers running on VMware ESX, set the reserved memory size to the size of the guest operating system memory. For more information, see TID 7005382 in Novell Support Knowledgebase (http://support.novell.com/search/kb_index.jsp).
- In addition, if the ZENworks guest operating system supports VMware ESX, enable additional Java commands to set large pages, as follows:

  ```
  –XX:+UseLargePages
  ```

  For more information on memory reservation and large memory pages, refer to the `Enterprise Java Applications on VMware Best Practices Guide.`
- Finally, you need to perform the following tasks:

1 In the CATALINA_OPTS string, add the appropriate options, separated by spaces, before the `–XX:PermSize` option.

   CATALINA_OPTS is used to configure the Tomcat container options. For more information on Tomcat, see the Tomcat Online documentation.

2 To start the ZENworks Server services, run the following command:

   ```
   microfocus-zenworks-configure -c Start
   ```

NOTE: If the ZENworks Administration Management service fails to start, there is a compatibility problem with the newly added option, or the syntax is incorrect. To troubleshoot the service startup, run the following command:

```
/etc/init.d/microfocus-zenadmin-mgmt debug
```

The following log file is displayed:

```
/var/opt/microfocus/log/zenworks/admin-mgmt/catalina.out
```

III Appendixes

The following section provide information related to installing the ZENworks Primary Server software:

- Appendix A, "Creating an External Certificate," on page 43
- Appendix B, "Dependent Linux RPM Packages," on page 47
- Appendix C, "Oracle Enterprise with Partitioning," on page 53
- Appendix D, "Keywords Not to Be Used in Database Creation," on page 55
- Appendix E, "Installation Troubleshooting," on page 57

A Creating an External Certificate

ZENworks Primary Servers communicate with ZENworks managed devices using the HTTPS protocol. This secure communication requires that the ZENworks Management Zone have a defined Certificate Authority (CA) and that each Primary Server have its own server certificate issued by the zone's CA.

ZENworks includes an internal ZENworks CA. If you use the internal ZENworks CA, it is created during installation of the first Primary Server. Each subsequent Primary Server you install is issued a certificate signed by the ZENworks CA.

We recommend that you use the internal ZENworks CA unless your corporate security policies do not allow you to do so. The internal ZENworks CA lasts 10 years and simplifies use of various ZENworks features such as Remote Management.

The following are the acceptable formats for Root certificate and Server certificate with Private Key:

- **Root certificate:** The top-level certificate in the certificate tree issued by the CA that signed the Server certificate and any intermediate certificate chains. It supports the `.pem, .crt, .cer, .der, .p7b,` or `.p7c` file format.
- **Server certificate:** It is a signed certificate that is used for the ZENworks server. It supports the `.pem, .crt, .cer, .der, .p7b,` or `.p7c` file format.
- **Private key:** The private key file that is associated with the signed server

   certificate. It supports the `.der` file format.

You can convert your certificate or key to ZENworks acceptable formats using the openssl command line tool (available as part of most Linux distributions or as part of the cygwin tool set).

For example, convert your PEM encoded private key to DER encoded thusly:

```
openssl pkcs8 -topk8 -nocrypt -in key.pem -inform PEM -out key.der -outform DER
```

PEM encoded certificate to DER encoded thusly:

```
openssl x509 -in cert.pem -inform PEM -out cert.der -outform DER
```

NOTE: ◆ If it is an intermediate CA, you need to provide the complete chain. ZENworks will use the root CA in the chain as the future CA. The top-level should consist of a root certificate, which is signed by the Root CA, followed by the intermediate certificates, and then the Leaf certificate (server certificate).

- If it is an intermediate CA, you need to provide the complete chain. ZENworks will use the root CA in the chain as the future CA. The chain should begin with the server certificate, the intermediate or subordinate certificate authority and then root ca.

- The supported certificate formats are .der, .cer, .crt, .p7b, .pem, .cert
- If you plan to configure Kafka or Vertica in your zone, then ensure that two-way SSL is enabled for the server certificate issued by an external CA. For more information on Kafka or Vertica, see ZENworks Vertica Guide.

See the following sections for detailed instructions on using external certificates:

- "Generating a Certificate Signing Request (CSR)" on page 44
- "Generating a Certificate by Using NetIQ ConsoleOne" on page 45
- "Generating a Certificate by Using NetIQ iManager" on page 45

Generating a Certificate Signing Request (CSR)

For each Windows server where you will install the ZENworks Primary Server software, you need to create an individual server certificate with the subject being the server's Fully Qualified Domain Name (FQDN).

1. Install OpenSSL.
2. To generate a private key that is needed to create a certificate signing request (CSR), enter the following command:

   ```
   openssl genrsa –out zcm.pem 2048
   ```

3. To create a CSR that can be signed by a Certificate Authority, enter the following command:

   ```
   openssl req -new –key zcm.pem –out zcm.csr
   ```

   When you are asked for "YOUR name," enter the full DNS name assigned to the server where you are installing the Primary Server software domain names include *www.company.com*, *payment.company.com* and *contact.company.com*.

4. To convert the private key from PEM format to the DER encoded format, enter the following command:

   ```
   openssl pkcs8 –topk8 –nocrypt –in zcm.pem –inform PEM –out zcmkey.der –
   outform DER
   ```

   The private key must be in the PKCS8 DER encoded format. You can use the OpenSSL command line tool to convert your keys to the proper format.

5. Use the CSR to generate a certificate by using ConsoleOne, iManager, or a true external CA such as Verisign.

   If you are using a true external CA such as Verisign, refer to Verisign for information about using the CSR to generate a certificate. If you are using ConsoleOne or iManager as your Certificate Authority, instructions are provided in the following sections:

   - "Generating a Certificate by Using NetIQ ConsoleOne" on page 45
   - "Generating a Certificate by Using NetIQ iManager" on page 45

Generating a Certificate by Using NetIQ ConsoleOne

1 Ensure that eDirectory is configured as the CA.

2 Issue the certificate for the Primary Server:

2a Launch ConsoleOne.

2b Log in to the eDirectory tree as an administrator with the appropriate rights.

For more information about the appropriate rights, see the Entry Rights Needed to Perform Tasks (https://www.netiq.com/documentation/crt33/crtadmin/data/a2zibyo.html) section in the *NetIQ Certificate Server 3.3* documentation.

2c From the Tools menu, click Issue Certificate.

2d Browse for and select the `zcm.csr` file, then click Next.

2e Complete the wizard by accepting the default values.

2f Specify the certificate basic constraints, then click Next.

2g Specify the validity period and the effective and expiration dates, then click Next.

2h Click Finish.

2i Choose to save the certificate in the DER-format, then specify a name for the certificate.

3 Export the Organizational CA's self-signed certificate:

3a Log in to eDirectory from ConsoleOne.

3b In the Security container, right-click the CA, then click Properties.

3c In the Certificates tab, select the self-signed certificate.

3d Click Export.

3e When prompted to export the private key, click No.

3f Export the certificate in DER format and choose the location where you want to save the certificate.

3g Click Finish.

You should now have the three files that you need to install ZENworks using an external CA.

Generating a Certificate by Using NetIQ iManager

1 Ensure that eDirectory is configured as the CA.

2 Issue the certificate for the Primary Server:

2a Launch iManager.

2b Log in to the eDirectory tree as an administrator with the appropriate rights.

For more information about the appropriate rights, see the Entry Rights Needed to Perform Tasks (https://www.netiq.com/documentation/crt33/crtadmin/data/a2zibyo.html) section in the *NetIQ Certificate Server 3.3* documentation.

2c From the Roles and Tasks menu, click Novell Certificate Server > Issue Certificate.

2d Click Browse to browse for and select the CSR file, `zcm.csr`, then click Next.

2e Accept the default values for the key type, the key usage, and the extended key usage, then click Next.

2f Accept the default certificate basic constraints, then click **Next.**

2g Specify the validity period and the effective and expiration dates, then click **Next**. Depending on your needs, change the default validity period (10 years).

2h Review the parameters sheet. If it is correct, click **Finish**. If it is incorrect, click **Back** until you reach the point where you need to make changes.

When you click **Finish**, a dialog box is displayed and indicates that a certificate has been created. This exports the certificate into the binary DER-format.

2i Download and save the issued certificate

3 Export the Organizational CA's self-signed certificate:

3a Log in to eDirectory from iManager.

3b From the **Roles and Tasks** menu, click **Novell Certificate Server** > **Configure Certificate Authority**.

This displays the property pages for the Organizational CA, which include a General page, a CRL Configuration page, a Certificates page, and other eDirectory-related pages.

3c Click **Certificates**, then select **Self Signed Certificate**.

3d Click **Export**.

This starts the Certificate Export wizard.

3e Deselect the **Export the Private Key** option, and choose the export format as **DER**.

3f Click **Next**, then save the exported certificate.

3g Click **Close**.

You should now have the three files that you need to install ZENworks using an external CA.

B Dependent Linux RPM Packages

ZENworks installation on a Linux server requires that certain RPM packages are already installed on the server. Review the following sections for more information on the RPM packages required on the Linux devices:

  ◆

SUSE Linux Enterprise Server

You can use the SUSE Linux Enterprise Server installation media to install the packages on the SUSE Linux Enterprise Server before starting the ZENworks installation on the server:

SLES 12 - 64 Bit	SLES 15 - 64 Bit
xinetd	xinetd
bash	bash
libxml2	libxml2
glibc-32bit	glibc-32bit
libjpeg-32bit	libjpeg-32bit
zlib-32bit	zlib-32bit
libgcc43-32bit	libgcc43-32bit
libstdc++43-32bit	libstdc++43-32bit
perl	perl
coreutils	coreutils
fillup	fillup
gawk	gawk
glibc	glibc
grep	grep
insserv	insserv
pwdutils	pwdutils
sed	sed
sysvinit	sysvinit
diffutils	diffutils
logrotate	logrotate

SLES 12 - 64 Bit	SLES 15 - 64 Bit
perl-base	perl-base
tcpd	tcpd
libreadline5	libreadline5
libncurses5	libncurses5
zlib	zlib
libglib-2_0-0	libglib-2_0-0
libgmodule-2_0-0	libgmodule-2_0-0
libgthread-2_0-0	libgthread-2_0-0
gdbm	gdbm
libdb-4_5	libdb-4_5
coreutils-lang	coreutils-lang
info	info
libacl	libacl
libattr	libattr
libselinux1	libselinux1
pam	pam
filesystem	filesystem
aaa_base	aaa_base
libldap-2_4-2	libldap-2_4-2
libnscd	libnscd
libopenssl0_9_8	libopenssl0_9_8
libxcrypt	libxcrypt
openslp	openslp
pam-modules	pam-modules
libsepol1	libsepol1
findutils	findutils
mono-core	mono-core
bzip2	bzip2
cron	cron
popt	popt
terminfo-base	terminfo-base
glib2	glib2

SLES 12 - 64 Bit	SLES 15 - 64 Bit
pcre	pcre
libbz2-1	libbz2-1
libzio	libzio
audit-libs	audit-libs
cracklib	cracklib
cpio	cpio
login	login
mingetty	mingetty
ncurses-utils	ncurses-utils
net-tools	net-tools
psmisc	psmisc
sles-release	sles-release
udev	udev
cyrus-sasl	cyrus-sasl
permissions	permissions
glib2-branding-SLES	glib2-branding-SLES
glib2-lang	glib2-lang
libgcc43	libgcc43
libstdc++43	libstdc++43
cracklib-dict-full	cracklib-dict-full
cpio-lang	cpio-lang
sles-release-DVD	sles-release-DVD
libvolume_id1 (applicable only for SLES 11 SP2)	libvolume_id1 (applicable only for SLES 11 SP2)
licenses	licenses
libavahi-client3	libavahi-client3
libavahi-common3	libavahi-common3
libjpeg	libjpeg
xorg-x11-libX11	xorg-x11-libX11
xorg-x11-libXext	xorg-x11-libXext
xorg-x11-libXfixes	xorg-x11-libXfixes

SLES 12 - 64 Bit	SLES 15 - 64 Bit
xorg-x11-libs	xorg-x11-libs
dbus-1	dbus-1
xorg-x11-libXau	xorg-x11-libXau
xorg-x11-libxcb	xorg-x11-libxcb
fontconfig	fontconfig
freetype2	freetype2
libexpat1	libexpat1
xorg-x11-libICE	xorg-x11-libICE
xorg-x11-libSM	xorg-x11-libSM
xorg-x11-libXmu	xorg-x11-libXmu
xorg-x11-libXp	xorg-x11-libXp
xorg-x11-libXpm	xorg-x11-libXpm
xorg-x11-libXprintUtil	xorg-x11-libXprintUtil
xorg-x11-libXrender	xorg-x11-libXrender
xorg-x11-libXt	xorg-x11-libXt
xorg-x11-libXv	xorg-x11-libXv
xorg-x11-libfontenc	xorg-x11-libfontenc
xorg-x11-libxkbfile	xorg-x11-libxkbfile
libuuid1	libuuid1
libsqlite3-0	libsqlite3-0
libgobject-2_0-0	libgobject-2_0-0
rpm	rpm
util-linux	util-linux
libblkid1	libblkid1
util-linux-lang	util-linux-lang
update-alternatives	update-alternatives
postfix	postfix
netcfg	netcfg
openldap2-client	openldap2-client
lsb-release	lsb-release
libXtst6-32bit-1.2.2-3.60.x86_64	libXtst6-32bit-1.2.2-3.60.x86_64

SLES 12 - 64 Bit	SLES 15 - 64 Bit
libpango-1_0-0-32bit	libpango-1_0-0-32bit
libXi6-32bit	libXi6-32bit
libsecomp2	

C Oracle Enterprise with Partitioning

ZENworks support Oracle Partitioning, if the partitioning feature is enabled in the Oracle database. Oracle Partitioning is a separately licensed option available with the Oracle Enterprise edition only. For Oracle Standard edition, the partitioning option is not supported.

During the ZENworks installation with the Oracle database, select one of the following:

- **Yes, let ZENworks use partitioning with the Oracle database.**
- **No, do not use partitioning with Oracle database**.

IMPORTANT: It is recommended that you use Oracle Partitioning since it improves the application performance and manageability.

If you are using Oracle Enterprise with partitioning, you need to verify whether the Oracle partition feature is enabled with the required license.

Execute the following:

```
Select Value from v$option where parameter='Partitioning';
```

The query output value is displayed as `"TRUE"`. This indicates that the partition is enabled. ZENworks will automatically run the partition table scripts.

D Keywords Not to Be Used in Database Creation

When you create databases during installation, upgrade or database migration, the following keywords should not be used as-is in fields such as the zone name, user name, password, database name, schema names:

all	compress	false	level
alter	connect	fetch	like
and	constant	float	limited
any	create	for	lock
array	current	forall	long
as	currval	from	loop
asc	cursor	function	max
at	date	goto	min
audit	day	group	minus
authid	decimal	having	minute
avg	declare	heap	mlslabel
begin	default	hour	mod
between	delete	if	mode
binary_integer	desc	immediate	month
body	distinct	in	natural
boolean	do	index	naturaln
bulk	drop	indicator	new
by	else	insert	nextval
char	elsif	integer	nocopy
char_base	end	interface	not
check	exception	intersect	nowait
close	exclusive	label	null
cluster	execute	interval	nullif
coalesce	exists	into	number
collect	exit	is	number_base

comment	extends	isolation	ocirowid
commit	extract	java	of
on	range	sqlcode	update
opaque	raw	sqlerrm	use
open	real	start	user
operator	record	stddev	validate
option	ref	subtype	values
or	release	successful	varchar
order	return	sum	varchar2
organization	reverse	table	variance
others	rollback	then	view
out	row	time	when
package	rowid	timestamp	whenever
partition	rownum	timezone_abbr	where
pctfree	rowtype	timezone_hour	while
pls_integer	savepoint	timezone_minute	with
positive	second	timezone_region	work
positiven	select	to	write
pragma	separate	trigger	year
prior	set	true	zone
private	share	type	
procedure	smallint	ui	
public	space	union	
raise	sql	unique	

E Installation Troubleshooting

The following sections provide solutions to the problems you might encounter while installing or uninstalling ZENworks:

Troubleshooting Installation

This section provides solutions to problems you might encounter when installing ZENworks .

Unable to log in to ZCC if a cross-signed certificate is used

Explanation: When configuring a zone, if the root CA certificate that is cross-signed by an additional CA is used, the zone configuration was successfully completed but the user was not able to log into ZCC as ZENworks failed to recognize this behavior.

Action: Modify the certificate received from CA to include the latest self-signed root certificate. Perform the following steps:

1. Open the full chain certificate in a text editor and replace the last cross-signed Root CA certificate with a self-signed Root CA certificate.

2. Import the modified server certificate manually.

   For example: A certificate from *Let's Encrypt* contains two Root CAs. They are:
   - Self-Signed ISRG Root X1
   - ISRG Root X1 cross-signed by DST Root CA X3

   If the certificate chain includes 2nd certificate as a root, it should be removed and replaced by the first certificate.

ZENworks Agent install progress does not display toast messages on Windows

Source: ZENworks, ZENworks Agent

Explanation: The ZENworks agent install progress is not displayed as toast messages on Windows managed devices. However, when the progress notifications are displayed in the notification area.

Action: Set the registry key to force the toast notifications ON. On the Windows device, go to the following registry key:

HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\PushNotifications , create a DWORD ToastEnabled with value 1.

Restart the device for the setting to be effective.

Unable to create database schema on a Primary Server

Source: ZENworks

Explanation: While creating the database schema for ZENworks, Audit, or Antimalware database, then it is always recommended that you run setup.exe -c or setup.sh -c on a device, which is not a Primary Server.

If you run the command on a Primary Server, then the switch -c will be discarded and ZENworks installation will be initiated.

Action: None

ZENworks installation fails on a SLES device with the BTRFS file system

Source: ZENworks 2020

Explanation: When you install ZENworks 2020 on a SLES device with BTRFS file system, the installation fails.

Possible Cause: ZENworks installation on SLES device with BTRFS file system is not supported.

Installing from the root directory on a Linux device fails to create the self-signed certificates

Source: ZENworks ; Installation.

Action: On the Linux device, download and copy the ZENworks installation ISO image to a temporary location to which all users have the Read and Execute permissions.

Configuring the ZENworks Server to an Oracle database fails

Source: ZENworks ; Installation.

Explanation: If the NLS_CHARACTERSET parameter is not set to AL32UTF8 and the NLS_NCHAR_CHARACTERSET parameter is not set to AL16UTF16, the database installation fails with the following error messages:

```
Failed to run the sql script: localization-updater.sql,
message:Failed to execute the SQL command: insert into
zLocalizedMessage(messageid,lang,messagestr)
values('POLICYHANDLERS.EPE.INVALID_VALUE_FORMAT','fr','La
stratégie {0} n''a
pas pu être appliquée du fait que la valeur de la variable
"{1}" n''est pas
dans un format valide.'),
message:ORA-00600: internal error code, arguments:
[ktfbbsearch-7], [8], [],
[], [], [], [], []
```

Action: Set the NLS_CHARACTERSET parameter to AL32UTF8 and the NLS_NCHAR_CHARACTERSET parameter to AL16UTF16.

To ensure that the character set parameters are configured with the recommended values, run the following query at the database prompt:

```
select parameter, value from nls_database_parameters where
parameter like '%CHARACTERSET%';
```

Unable to establish a remote desktop session with a Windows device running the ZENworks Configuration Management installation program

Source: ZENworks ; Installation.

Explanation: If you try to use a Remote Desktop Connection to connect to a Windows server on which the ZENworks Configuration Management installation program is running, the session terminates with the following error message:

```
The RDP protocol component "DATA ENCRYPTION" detected an
error in the protocol stream and has disconnected the
client.
```

Action:	See the Microsoft Help and Support web site (http://support.microsoft.com/kb/323497).

Installing a second server gives an error message

Source:	ZENworks ; Installation.
Explanation:	When you are installing the second server into a Management Zone, an error message might be displayed at the end of the installation that contains the following text:

```
... FatalInstallException Name is null
```

However, the installation otherwise seems to complete successfully.

This error is being displayed erroneously because the program thinks that the server needs to be reconfigured.

Action:	Review the installation log file. If there are no errors there related to this error message, you can ignore it.

Installation on Linux fails

Source:	ZENworks; Installation.
Possible Cause:	If the directory path to which you have extracted the ZENworks installation ISO image contains spaces, the installation fails on Linux.
Action:	Ensure that the directory path to which you want to extract the installation ISO image does not contain spaces.

Configure Action fails because of an error detected by HotSpot Virtual Machine

Source:	ZENworks; Installation.
Explanation:	If you are installing the first Primary Server on a Linux device, and if at the end of the process that configures the database you see an error has occurred and you are given the option of continuing or rolling back, you should check the log file at `/var/opt/microfocus/log/zenworks/ ZENworks_Install_[date].log.xml`. If you see the error specified below, it is safe to continue with the install.

If you are installing the first Primary Server on a Linux device, and if at the end of the process that configures the database you see an error has occurred and you are given the option of continuing or rolling back, you should check the log file at /var/opt/microfocus/log/zenworks/ZENworks_Install_[date].log.xml. If you see the error specified below, it is safe to continue with the install.

```
ConfigureAction failed!:
```

```
select tableName, internalName, defaultValue from Adf where
inUse =?#
An unexpected error has been detected by HotSpot Virtual
Machine:
#SIGSEGV (0xb) at pc=0xb7f6e340, pid=11887, tid=2284317600
#
#Java VM: Java HotSpot(TM) Server VM (1.5.0_11-b03 mixed
mode)

#Problematic frame:
#C [libpthread.so.0+0x7340] __pthread_mutex_lock+0x20
```

Action: Ignore the error message.

Unable to open the ZENworks Configuration Management Installation logs by using a web browser on a non-English Primary Server

Source: ZENworks ; Installation.

Explanation: On a non-English Primary Server that has ZENworks Configuration Management installed, you are unable to open the Installation logs by using a web browser. However, you can still open the Installation logs in a text editor.

The Installation logs are located at `/var/opt/microfocus/log/zenworks/` on Linux and `zenworks_installation_directory\microfocus\zenworks\logs` on Windows.

Action: Before opening the Installation logs (`.xml`) in a web browser, change the encoding for all the Installation LogViewer files:

1 Using a text editor, open one of the following LogViewer files located at `/var/opt/microfocus/log/zenworks/logviewer` on Linux and `zenworks_installation_directory\microfocus\zenworks\logs\logviewr` on Windows:

   - `message.xsl`
   - `sarissa.js`
   - `zenworks_log.html`
   - `zenworks_log.js`
   - `zenworks_log.xsl`
   - `zenworks_log_text.xsl`

2 Click **File** > **Save As**.

   The Save As dialog box is displayed.

3 In the **Encoding** list, select **UTF-8**, then click **Save**.

   Do not change the filename and file type.

4 Repeat Step 1 through Step 3 for the remaining LogViewer files.

Unable to install .NET 3.5 SP1 on Windows Server 2008

Source: ZENworks ; Installation.

Explanation: The installation of Microsoft .NET 3.5 SP1 on Windows Server 2008 fails with the following error message:

```
Microsoft .NET Framework 2.0SP1 (x64) (CBS): [2] Error:
Installation failed for component Microsoft .NET Framework
2.0SP1 (x64) (CBS). MSI returned error code 1058
```

Possible Cause: The device does not have the Windows Update Service enabled.

Action: Enable the Windows Update service on the device:

1 From the Windows desktop **Start** menu, click **Settings** > **Control Panel**.

2 Double-click **Administrative Tools** > **Services**.

3 Double-click **Windows Update Service**.

The Windows Update Service Properties dialog box is displayed.

4 In the **General** tab, select one of the following options from the **Startup type** list:

  ◆ **Manual**

  ◆ **Automatic**

  ◆ **Automatic (Delayed Start)**

5 Click **Start** to start the service.

6 Click **OK**.

Unable to install the ZENworks Agent on a McAfee fully protected device

Source: ZENworks ; Installation

Explanation: When you try to install ZENworks Agent on a McAfee fully protected device, the antivirus software prevents the creation of new executable files in Windows and program files.

Possible Cause: The device is protected by McAfee VirusScan and therefore does not allow the installation of any applications.

Action: Do the following on the device that has the McAfee software installed:

1 Click **Start** > **All Programs** > **McAfee** > **VirusScan Console**.

2 Double-click **Access Protection**.

3 In the Access Protection Properties dialog box, do the following:

  3a In the Categories panel, click **Common Maximum Protection**.

  3b In the **Block** column, deselect all the rules.

  3c Click **OK**.

4 Install the ZENworks Agent.

For more information, see "ZENworks Agent Deployment" in the *ZENworks Discovery, Deployment, and Retirement Reference*.

ZENworks-related files might be reported as malicious software during the ZENworks Agent installation

Source: ZENworks ; Installation.

Explanation: During the ZENworks Agent installation, some ZENworks-related files might be reported as malicious software by anti-virus software. Consequently, the installation abruptly stops.

Action: Do the following on the managed device where you want to install the ZENworks Agent:

1 Manually add *System_drive*:\windows\microfocus\zenworks to the Exclusion list of the anti-virus software installed on the managed device.

   Manually add System_drive:\windows\microfocus\zenworks to the Exclusion list of the anti-virus software installed on the managed device.

2 Install the ZENworks Agent.

Installation of ZENworks Agent on a Terminal Server hangs

Source: ZENworks; Installation

Possible Cause: Installation of ZENworks Agent on a Terminal Server hangs because the default mode in the Terminal Server is Execute.

Action: Change the mode in the Terminal Server to Install:

1 From the Command Prompt:

   1a To change the mode, execute the following command:

   ```
   change user /install
   ```

   1b Type **exit**, then press **ENTER**.

2 Install the ZENworks Agent.

   For more information, see "ZENworks Agent Deployment" in the *ZENworks Discovery, Deployment, and Retirement Reference*.

On Windows XP, installing the ZENworks Agent with the Remote Management component through Remote Desktop Connection hangs

Source: ZENworks; Installation

Explanation: If you remotely connect to a managed device by using Remote Desktop Connection (RDP) and install ZENworks Agent, the installation hangs.

Action: To fix the issue, download the patch from the Microsoft Support web site (http://support.microsoft.com/kb/952132) and install it on the managed device prior to installing the ZENworks Agent.

ZENworks installation fails on a Linux server

Source: ZENworks; Installation.

Explanation:	ZENworks installation on a Linux server requires that certain RPM packages are already installed on the server.
Action:	Install the required RPM packages on the Linux server.

ZENworks installation does not proceed while using Microsoft SQL named instance

Source:	ZENworks; Installation.
Explanation:	While using named instance for Microsoft SQL, the install wizard will not proceed even after providing the correct information in the database panel. This occurs if Checksum offloading is enabled on the NIC card of the machine.
Action:	Ensure that Checksum offloading is disabled on the NIC card. For more information, refer to the applicable manuals for SLES, RHEL, or VMware.

The install XML log file is not displayed properly in Google Chrome and Firefox

Explanation:	When you try to view the install XML log file in Google Chrome and Firefox, the log file is not displayed properly.
Action:	Run the following configure action to convert the XML log file to HTML and view the log file in a web browser:

```
microfocus-zenworks-configure -c

ConvertLogToHTMLConfigureAction -DlogFile=<LogFilePath>
```

Alternatively, you can view the log file using any text editor.

Post Installation Troubleshooting

This section provides solutions to problems you might encounter after installing ZENworks .

Unable to access ZENworks Control Center on a ZENworks Primary Server running on SLES

Source:	ZENworks; Installation.

Explanation: During the installation of ZENworks Server on a SLES device, if you have specified the port as 8080, the installation is successful. However, you might not be able to access the ZENworks Control Center.

Action: Perform the following steps on the SLES device on which you have installed the ZENworks Server:

1 Start YaST.

2 Click **Firewall**.

3 In the Firewall Configuration Window, click **Allowed Services.**

4 Click **Advanced**.

5 In the Additional Allowed Ports dialog box, replace **http-alt** in the **TCP Ports** and **UDP Ports** options with 8080, then complete the Wizard.

Auto Launch ZENworks Control Center configuration does not work in SLES machine

Source: ZENworks; Installation.

Explanation: In the Post installation configuration, if the Auto launch ZCC option is selected, after installation, ZENworks Control Center does not launch automatically in SLES machines.

Action: Manually launch ZENworks Control Center.

Deployment of Antimalware Bundles, Windows Bundles, and Windows Policies with System Requirements Set Fails on Windows 10 or later Devices

Source: ZENworks 23.3 Update

Explanation: The deployment of Antimalware bundles, Windows bundles, and Windows policies with System Requirements Set fails on Windows (Windows 10 21H2 or later versions) as the OS version mapping information (21H2, 22H2 etc) was missing on the Primary Servers in the zone. This issue occurs whenever you add new primary server of 2020 Update 2 version.

Action: Perform the following steps:

1. Create a custom_ostargets.xml file with details of the latest platform version. For more information, see Creating Custom_OSTagets.

2. Add the missing entries in `windowsVersionMapping.properties` on the Primary Server, and then run the following configure action:

   ```
   microfocus-zenworks-configure -c SettingsConfigureAction
   -Dtype=CustomOSTarget -Dadd
   ```

   To add the missing entries, see Adding an entry in the windowsVersionMapping.