

Lenovo ThinkSystem NE1032/NE1032T/NE1072T

# Release Notes

For Lenovo Cloud Network Operating System 10.7

**Lenovo**<sup>™</sup>

**Note:** Before using this information and the product it supports, read the general information in the *Safety information and Environmental Notices* and *User Guide* documents on the *Lenovo Documentation* CD and the *Warranty Information* document that comes with the product.

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## Release Notes

This release supplement provides the latest information regarding Lenovo Cloud Network Operating System 10.7 for the Lenovo ThinkSystem NE1032/NE1032T/NE1072T (referred to as NE1032/NE1032T/NE1072T throughout this document).

This supplement modifies and extends the following Cloud NOS documentation for use with CNOS 10.7:

- *Lenovo Network Application Guide for Lenovo Cloud Network Operating System 10.7*
- *Lenovo Network Command Reference for Lenovo Cloud Network Operating System 10.7*
- *Lenovo Network Python Programming Guide for Lenovo Cloud Network Operating System 10.7*
- *Lenovo Network REST API Programming Guide for Lenovo Cloud Network Operating System 10.7*
- *Lenovo ThinkSystem NE1032/NE1032T/NE1072T Installation Guide for Lenovo Cloud Network Operating System*

These publications are available from the following website:

[http://systemx.lenovofiles.com/help/topic/com.lenovo.systemx.common.nav.doc/overview\\_rack\\_switches.html](http://systemx.lenovofiles.com/help/topic/com.lenovo.systemx.common.nav.doc/overview_rack_switches.html)

Please keep these release notes with your product manuals.

**Note:** The Lenovo Cloud Network OS is based on the Embedded Linux Integration Environment (ELIE). To obtain open source code licenses, go to <https://github.com/lenovo/ELIE/tree/master/elic-1.7.1/licenses/>. For details on how to obtain open source code, please contact Lenovo Support.

# Hardware Support

CNOS 10.7 software is supported on the NE1032/NE1032T/NE1072T high performance Layer 2-3 network switches.

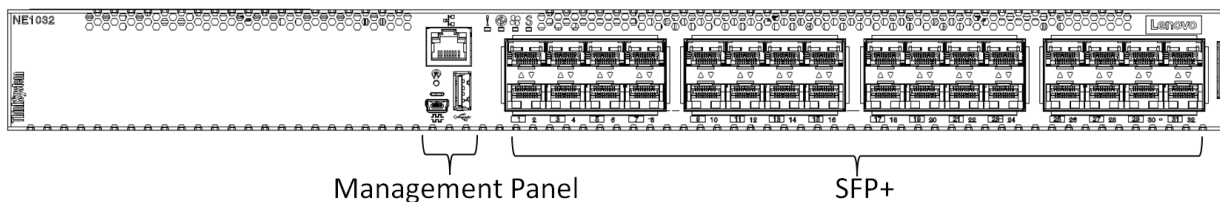
The NE1032/NE1032T/NE1072T is a 1U GbE switch and it can be mounted horizontally or vertically, depending on your application. Mounting options are available for a variety of rack systems.

For superior reliability, the NE1032/NE1032T/NE1072T uses redundant, hot-swap power supply modules and three (NE1032 and NE1032T) or five (NE1072T) hot-swap fan modules. Module options are available for either front-to-rear airflow, or rear-to-front airflow.

The NE1032 contains the following ethernet ports:

- Thirty-two 10 Gigabit Ethernet (GbE) Small Form Pluggable Plus (SFP+) ports which also support legacy 1 GbE connections

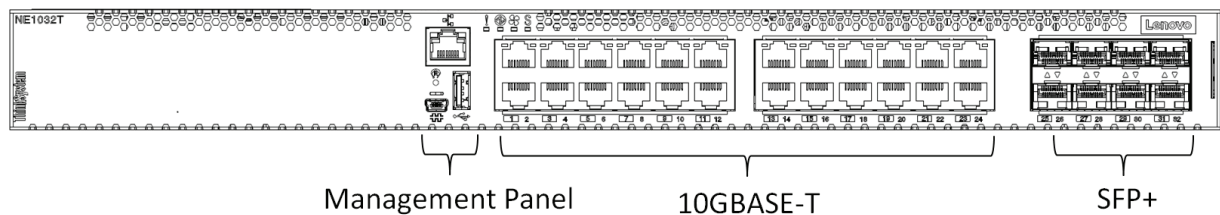
**Figure 1.** NE1032 front panel



The NE1032T contains the following ethernet ports:

- Twenty-four 1G/10G BASE-T RJ45 ports
- Eight 10G SFP+ Uplinks
- Ten Gigabit Ethernet (GbE) Small Form Pluggable Plus (SFP+) ports which also support legacy 1 GbE connections

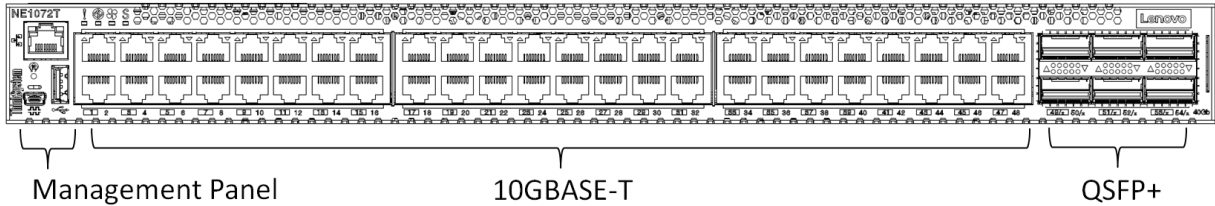
**Figure 2.** NE1032T front panel



The NE1072T contains the following ethernet ports:

- Forty-eight 1G/10G BASE-T RJ45 ports
- Six 40 GbE Quad Small Form Pluggable Plus (QSFP+) ports, all of which ports can optionally be used as four 10 GbE ports

**Figure 3.** NE1072T front panel



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## Supplemental Information

This section provides additional information about configuring and operating the NE1032/NE1032T/NE1072T and CNOS.

### The Boot Management Menu

The Boot Management menu allows you to switch the software image or to recover from a failed software download.

You can interrupt the boot process and enter the Boot Management menu from the serial console port. When the system displays Memory Test, press **Shift + B**. The Boot Management menu appears.

```
The system is going down for reboot NOW!
INIT: reboot: Restarting system
...

Press shift-B for startup menu or shift-R for recovery mode: ..
Running Startup Menu
...

Boot Management Menu
  I - Change booting image
  C - Change configuration to factory default
  R - Boot in recovery mode (tftp and xmodem download of images to
recover switch)
  P - Reset the Network Administrator (admin) password
  B - Reset the password required to enter privileged exec mode
  Q - Reboot
  E - Exit
Please choose your menu option:
```

The Boot Management menu allows you to perform the following actions:

- To change the booting image, press **I** and follow the screen prompts.
- To reset the switch configuration to factory defaults, press **C** and follow the screen prompts.
- To boot in recovery mode, press **R**.
- To reset the Network Administrator account (admin) password, press **P** and follow the screen prompts.
- To reset the password required to enter Privileged EXEC configuration mode, press **B** and follow the screen prompts.
- To reload the switch, press **Q**. The reloading process will start again.
- To exit the Boot Management menu, press **E**. The reloading process continues.

## Recovering from a Failed Software Upgrade

Use the following procedure to recover from a failed software upgrade.

1. Connect a PC to the serial port of the switch.
2. Open a terminal emulator program that supports TFTP (preferred) or Xmodem download (for example, HyperTerminal, SecureCRT, PuTTY). If using Xmodem, make sure the following settings are in effect:
  - Speed: 9,600 bps
  - Data Bits: 8
  - Stop Bits: 1
  - Parity: None
  - Flow Control: None
3. To access the Boot Management menu, you must interrupt the boot process from the Console port. Boot the NE1032/NE1032T/NE1072T, and when the system begins displaying Memory Test progress (a series of dots), press **Shift + B**. The Boot Management menu will display:

```
The system is going down for reboot NOW!
INIT: reboot: Restarting system
...

Press shift-B for startup menu or shift-R for recovery mode: ..
Running Startup Menu
...

Boot Management Menu
  I - Change booting image
  C - Change configuration to factory default
  R - Boot in recovery mode (tftp and xmodem download of images to
recover switch)
  P - Reset the Network Administrator (admin) password
  B - Reset the password required to enter privileged exec mode
  Q - Reboot
  E - Exit
Please choose your menu option:
```

4. Select **R** for Boot in recovery mode. You will see the following display:

```
Entering Rescue Mode.
Please select one of the following options:
    T) Configure networking and tftp download an image
    X) Use xmodem 1K to serial download an image
    P) Physical presence (low security mode)
    F) Filesystem check
    R) Reboot
    E) Exit

Option?:
```

- If you choose option **T** (TFTP download), go to step 5.
- If you choose option **X** (Xmodem serial download), go to step 6.

5. **TFTP download:** The switch prompts you to enter the following information:

```
Performing TFTP rescue. Please answer the following questions (enter 'q'
to quit):
IP addr      :
Server addr:
Netmask     :
Gateway     :
Image Filename:
```

- a. Enter the required information and press **Enter**.
- b. You will see a display similar to the following:

```
Host IP      : 10.10.98.110
Server IP   : 10.10.98.100
Netmask     : 255.255.255.0
Broadcast   : 10.10.98.255
Gateway     : 10.10.98.254
Installing image NE1032/NE1032T/NE1072T-CNOS-10.7.2.0_OS.imgs from
TFTP server 10.10.98.100
```

- c. When you see the following prompt, enter the image number where you want to install the new software and press **Enter**.

```
Install image as image 1 or 2 (hit return to just boot image): 1
```

- d. The following message is displayed when the image download is complete. Continue to step 7.

```
Entering Rescue Mode.
Please select one of the following options:
    T) Configure networking and tftp download an image
    X) Use xmodem 1K to serial download an image
    P) Physical presence (low security mode)
    F) Filesystem check
    R) Reboot
    E) Exit

Option?:
```



6. **Xmodem download:** When you see the following message, change the Serial Port characteristics to 115,200 bps:

```
Change the baud rate to 115200 bps and hit the <ENTER> key before
initiating the download.
```

- a. Press **Enter** to set the system into download accept mode. When the readiness meter displays (a series of "C" characters), start XModem on your terminal emulator.
- b. When you see the following message, change the Serial Port characteristics to 9,600 bps:

```
Change the baud rate back to 9600 bps, hit the <ESC> key.
```

- c. When you see the following prompt, enter the image number where you want to install the new software and press **Enter**.

```
Install image as image 1 or 2 (hit return to just boot image): 1
```

- d. The following message is displayed when the image download is complete. Continue to step 7.

```
Entering Rescue Mode.
Please select one of the following options:
    T) Configure networking and tftp download an image
    X) Use xmodem 1K to serial download an image
    P) Physical presence (low security mode)
    F) Filesystem check
    R) Reboot
    E) Exit

Option?:
```

7. Image recovery is complete. Perform one of the following steps:
- Press **R** to reboot the switch
  - Press **E** to exit the Boot Management menu
  - Press **Esc** to re-display the Boot Management menu

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## New Features in This Release

This release of Lenovo Cloud Network OS contains the following significant fixes, enhancements, and other changes.

### 100 Mbps Ethernet Port Speed

For the NE1032T, the switch's twenty-four 10G BASE-T RJ45 ports can also be configured as 100 Mbps ethernet ports.

For the NE1072T, the switch's forty-eight 10G BASE-T RJ45 ports can also be configured as 100 Mbps ethernet ports.

### BGP Unnumbered and BFD

BGP unnumbered can be used in conjunction with Bidirectional Forwarding Detection (BFD) to extend the capabilities of BGP unnumbered to make setting up large configurations easier and faster by enabling BFD on all BGP unnumbered neighbors.

### CLI Keyword Syntax Changes

This release brings CLI syntax changes for the following keywords:

**Table 1.** *CLI Keyword Syntax Changes*

OLD KEYWORD SYNTAX	NEW KEYWORD SYNTAX
<code>configure device</code>	<code>configure terminal</code>
<code>routing-protocol</code>	<code>router</code>
<code>bridge-port</code>	<code>switchport</code>
<code>port-aggregation</code>	<code>port-channel</code>
<code>aggregation-group</code>	<code>channel-group</code>
<code>cancel</code>	<code>abort</code>
<code>startup</code>	<code>boot</code>
<code>remove</code>	<code>clear</code>
<code>cp</code>	<code>copy</code>
<code>apply</code>	<code>set</code>
<code>display</code>	<code>show</code>
<code>save</code>	<code>write</code>
<code>dbg</code>	<code>debug</code>

**Note:** The old CLI syntax is still supported to allow any configurations present on the switch to be automatically converted to the new CLI syntax.

## Explicit Congestion Notification

Explicit Congestion Notification (ECN) extends the functionality of Weighted Random Early Detection (WRED) by marking packets instead of discarding them when the average queue length exceeds the configured threshold. Network devices configured with WRED and ECN use the marking of packets as a signal that the network is congested and packet transmission is slowed down.

## HTTP Support for ZTP

Zero Touch Provisioning (ZTP) can now also download ZTP boot files from HTTP servers, and not just TFTP servers.

## Network Policy Agent - VMware VDM Plug-in

The functionality of the Network Policy Agent has been extended to work with VMware Virtual Domain Manager (VDM). Interactions between the switch and the external VMware VDM is handled by the Lenovo VDM plug-in.

## Warning Message Displayed when Changing the Default Network Administrator Password

The following warning message is displayed reminding the users to change the default Network Administrator password as soon as possible:

Warning: Please change the default Network Administrator password as soon as possible. Note that in the next CNOS release (10.8.x or later), user will be forced to change the default password upon first successful login.

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## Known Issues

This section describes known issues for CNOS 10.7 on the Lenovo ThinkSystem NE1032/NE1032T/NE1072T RackSwitch.

### Network Policy Agent

The following limitations exist:

- When configuring a virtual machine (VM) name, use only alphanumeric characters. (ID: 127222)
- When multiple ESXi clusters are managed by the same vCenter server, the switch receives events from all clusters, regardless if the cluster is connected to the switch or not. (ID: 126713)
- IP information for a VM's virtualized Network Interface Card (vNIC) is not propagated to the vCenter if the VM does not have installed VMware's guest tool. Therefore, vCenter notifications do not contain IP information. In this scenario, a security policy cannot be attached to a VM if the VM is identified by its IP address. (ID: 126728)
- When a VM is migrated to another host, there is a delay in receiving IP information from the vCenter. During this delay, if a security policy was attached to the VM via its IP address, traffic does not follow the configured clauses of the policy until IP information is received from the vCenter. (ID: 127960)

### Privileged EXEC Mode Password Persistence

When upgrading the switch firmware image from CNOS version 10.3 or 10.4 to CNOS version 10.7, if there exists a previously configured encrypted password used to enter Privileged EXEC mode, it persists across the upgrade process. It is overwritten only when configuring a new clear text password and the switch running configuration is saved.

If a previously configured encrypted password is still used for entering Privileged EXEC configuration mode after the upgrade process, then only the first eight characters are checked when entering the password.

When downgrading the switch firmware image from CNOS version 10.7 to a previous version, if a previously configured Privileged EXEC encrypted password is present in the switch startup configuration file, then the password persists across the downgrade process. The password is required to enter Privileged EXEC configuration mode after the downgrade process is done. (ID: 119771)

## WRED

The following limitations exist:

- Explicit Congestion Notification (ECN) does not work with Weighted Random Early Detection (WRED) for unknown unicast, multicast, and broadcast packets. (ID: 129278)
- If WRED is configured with a minimum threshold higher than 2142 packets, the queue begins to discard packets before the minimum threshold is reached, and thus ECN is not triggered. (ID: 128909)

