Cloud Network Center/Cloud Network Agent

CNC

CNA100

Cloud Center

Firmware Version 1.2.1
Edition 1, 6/2016

Handbook

Default Login Details	
Service Port IP Address	https://169.254.1.3
User Name	admin
Password	1234

This handbook is a series of tutorials that guides you through various applications of the ZyXEL Cloud Network Center. The purpose of the handbook is to show you how to proceed through an application rather than explain the meaning of GUI features.

Note: IP addresses, port numbers, and object names are just examples used in these tutorials, so you must replace them with the corresponding information from your own network environment when implementing a tutorial.

Bold text indicates the name of a GUI menu, field or field choice.

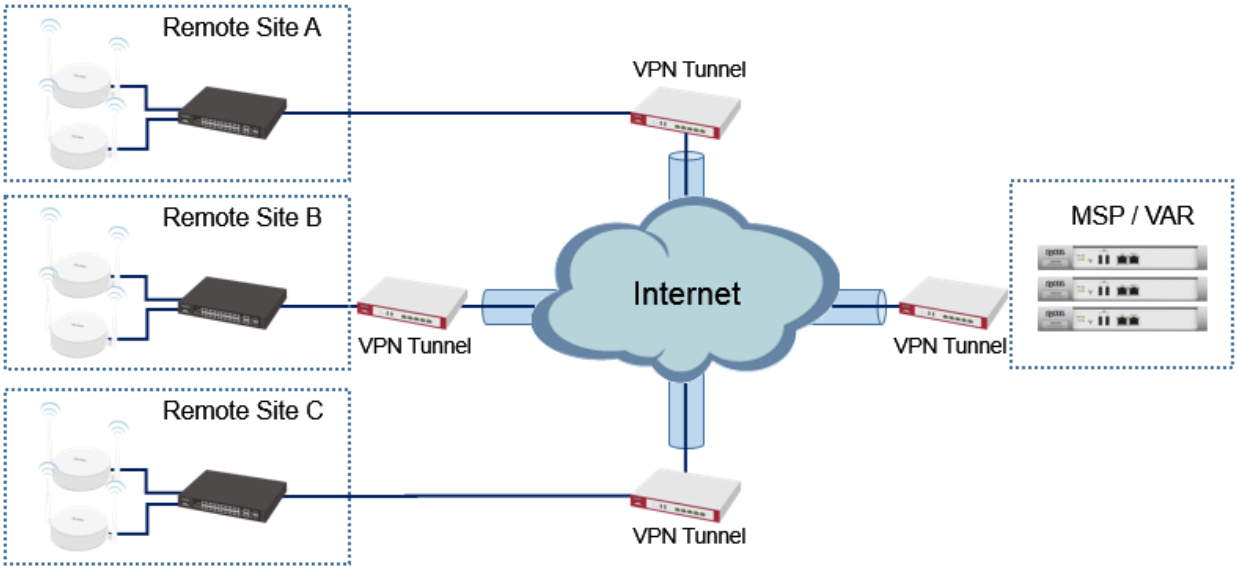
The handbook is for a series of products. Not all products support all firmware features. Screenshots and graphics in this handbook may differ slightly from your product due to differences in your product firmware or your computer operating system. Every effort has been made to ensure that the information in this handbook is accurate at the time of writing.

Table of Contents

1 How to Deploy and Install the Cloud Network Agent

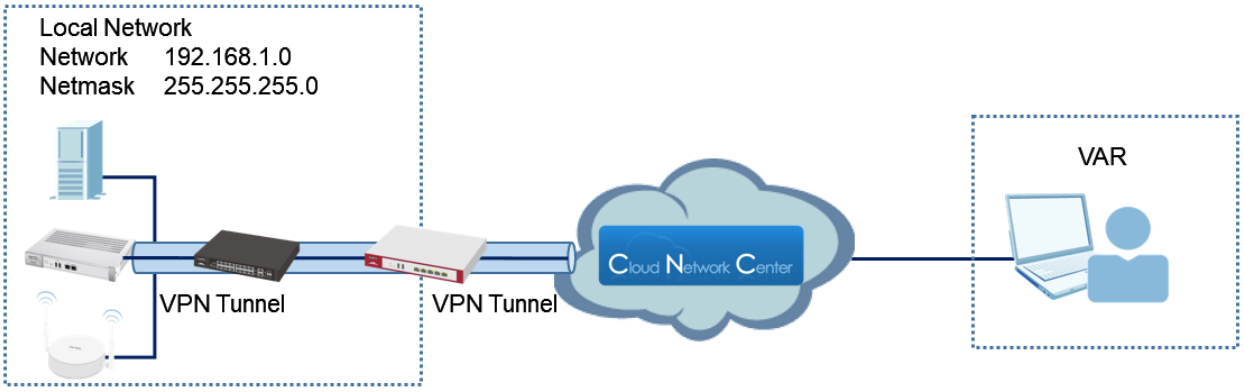
This example shows a **centralized management architecture**. In this architecture, service providers have already established VPN access to their client remote sites. **Cloud Network Agents** (CNA) are installed on the **Managed Services Provider's (MSP)** offices. **Value Added Resellers** (VAR) can monitor and maintain site devices anywhere with Internet access.

Figure 1 Centralized Management through CNC



This example shows a **remote site architecture**. In this architecture, the CNAs are installed in customer site. The CNA establishes VPN tunnel to CNC as soon as it receives Internet access. VARs can monitor and maintain site devices anywhere with Internet access.

Figure 2 Remote Site Management through CNC

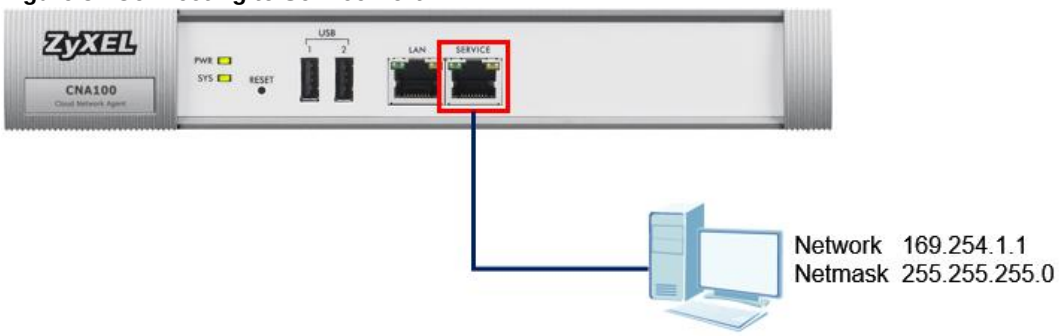


Note: All network IP addresses and subnet masks are used as examples in this article. Please replace them with your actual network IP addresses and subnet masks. This example was tested using USG110, GS1920-24HP, NWA5123-NI, and CNA100.

1.1 Initial Cloud Network Agent Configuration

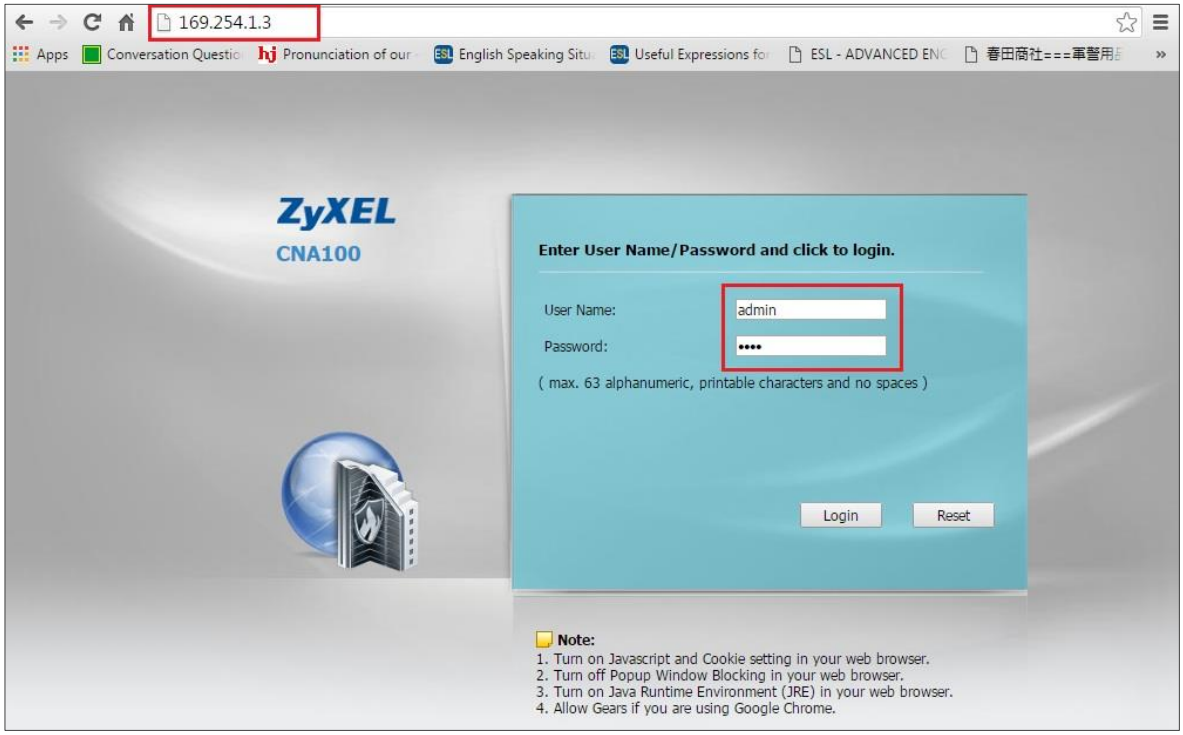
1 Configure PC IP Address to "**169.254.1.1**" and connect Ethernet cable to CNA's service port.

Figure 3 Connecting to Service Port



2 Access the CNA's Web GUI using IP address "**169.254.1.3**". Use the default administrator password.

Figure 4 Login Page

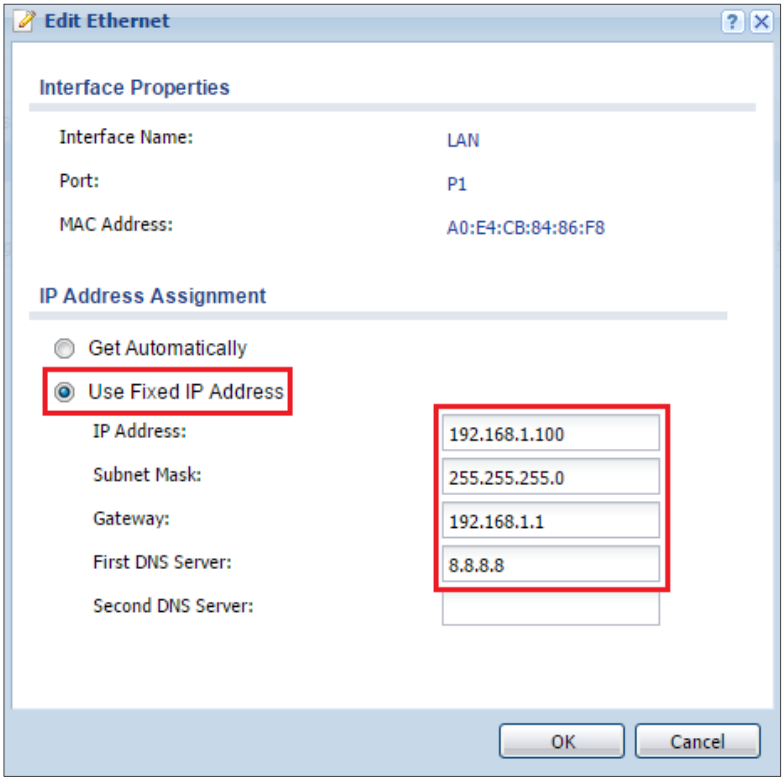


3 For security purposes, it is strongly recommended to change the default admin password.

Figure 5 Login Page

4 If you need to configure the CNA to use static IP addresses instead, go to **CONFIGURATION > Network > Interface** and edit LAN interface.

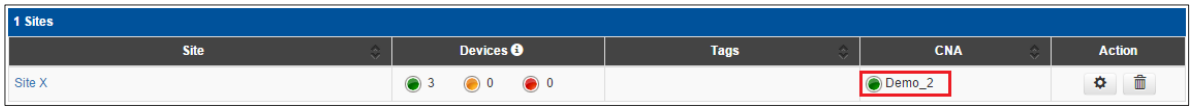
Figure 6 CONFIGURATION > Network > Interface > LAN



1.2 Verify that the CNA is Online

1 Log in to the ZyXEL CNC with CNA ownership account, go to **Organization View**. CNA should appear as **online**.

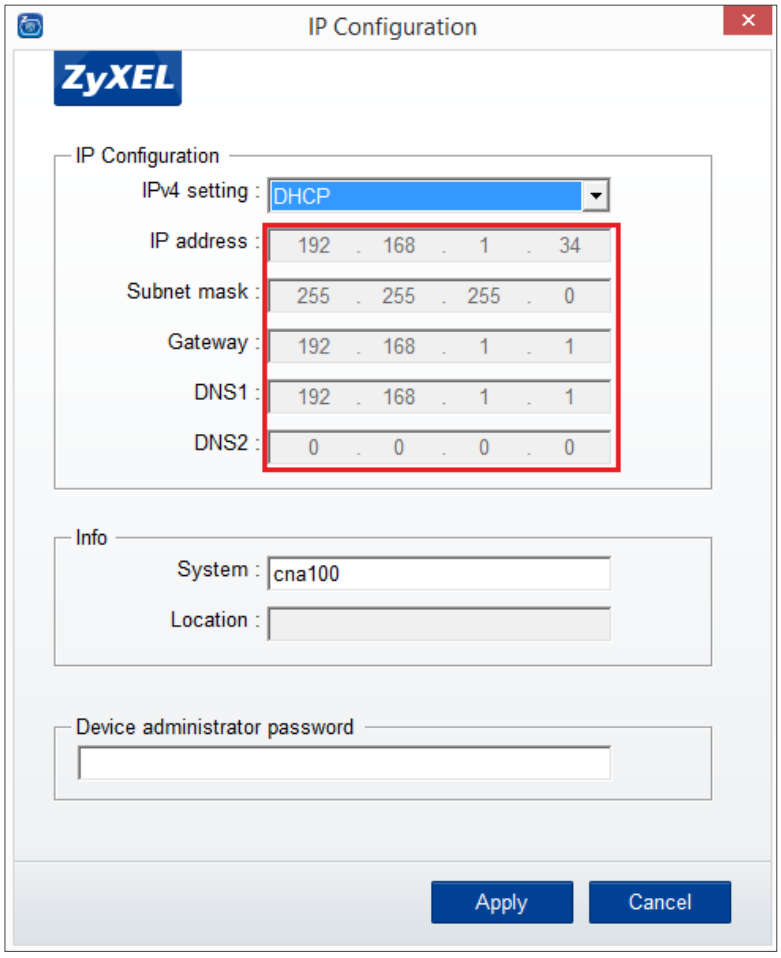
Figure 7 Organization View



1.3 What Can Go Wrong?

1 If CNC does not display the CNA, CNA may be receiving an incorrect DHCP configuration. Use the ZON utility through the local network to verify the DHCP configurations. IP address configurations should be able to provide CNA access to the Internet.

Figure 8 ZON > IP Configuration



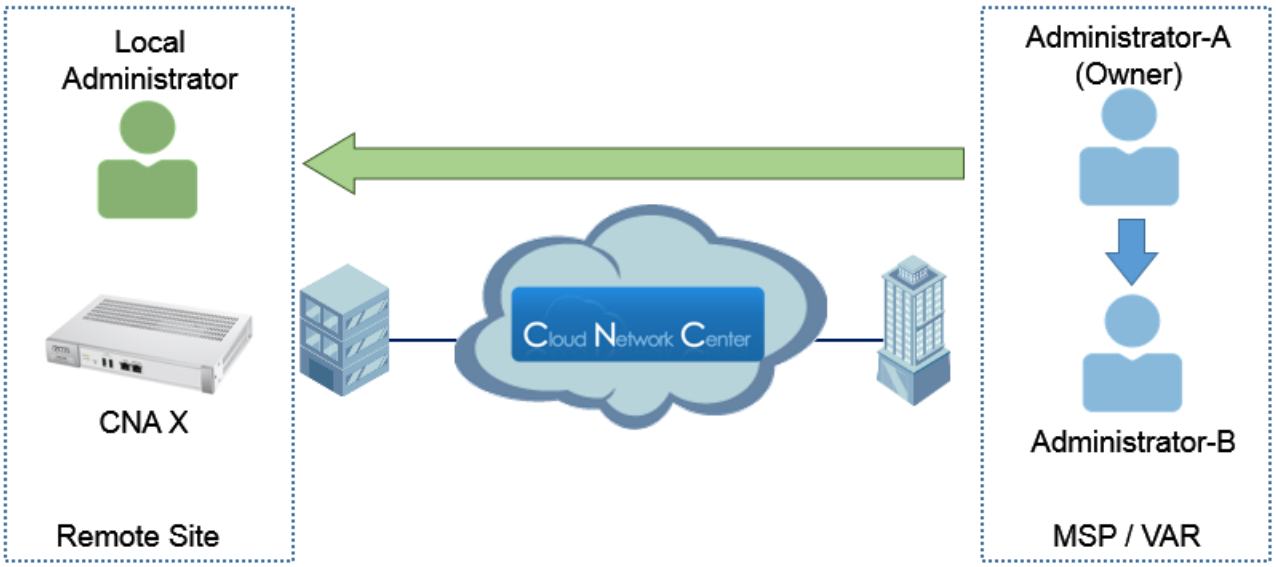
2 If the CNA needs to be configured with a static IP address but forgot the administrator password, press and hold down the "RESET" button on the CNA's front panel for 10 seconds. The administrator password revert to default after boot up.

Figure 9 Resetting Cloud Network Agent

2 How to Share or Transfer CNA Account Management

This example shows how to provide users authority to manage and monitor sites. This example will instruct CNA owners when to provide “read-only” or “full” privilege to different accounts.

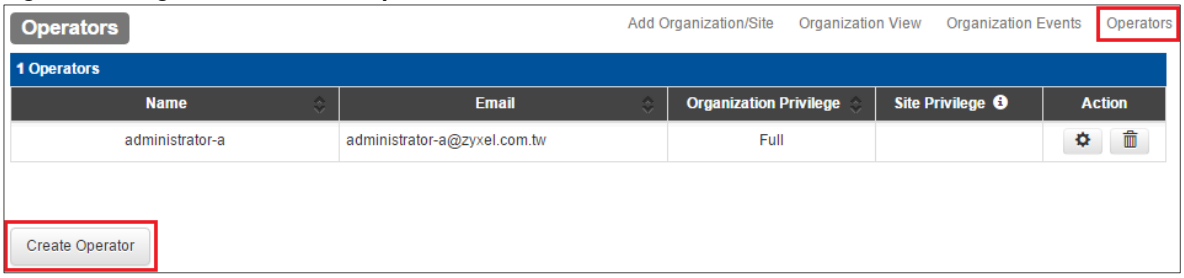
Figure 10 Types of Site Administrators



2.1 Managing Organization Operators

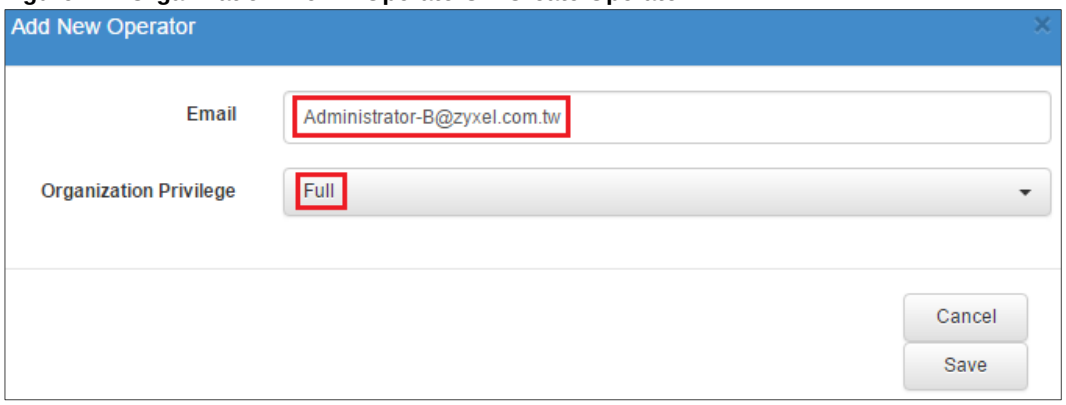
1 Log in to the ZyXEL CNC, go to **Organization View > Operators**, click on the **Create Operator** button.

Figure 11 Organization View > Operators



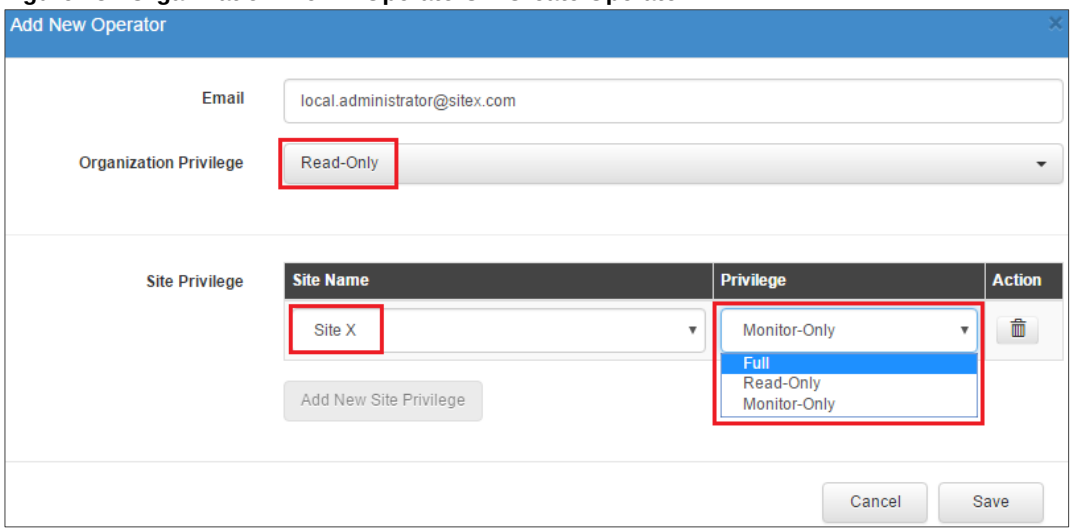
2 Provide "**Full**" organization privilege to accounts of administrators that are part of the MSP/VAR's organization. "**Full**" privilege gives the user account to add or remove operators from the organization.

Figure 12 Organization View > Operators > Create Operator



3 Provide "**Read-Only**" organization privilege to accounts of local administrators in remote site upon requests. "**Read-Only**" organization privilege prohibits user account from adding or removing operators from the organization. Select how much authority to provide this account by selecting the appropriate site privilege.

Figure 13 Organization View > Operators > Create Operator



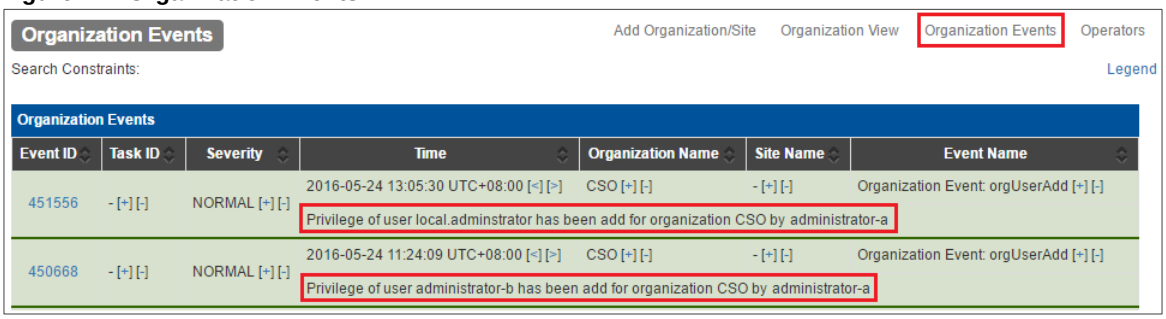
Note: Accounts with "Read-Only" organization privilege and "Read-Only" site privilege have limited functions and access. Restricted functions are greyed-out and will not be clickable.

Accounts with "Read-Only" organization privilege and "Monitor-Only" site privilege can only check whether devices are currently in an **active** or **inactive** status.

2.2 Verify that Accounts are Granted Privilege

1 Go to **Organization Events**. Event should indicate that privilege of users have been added by the administrator.

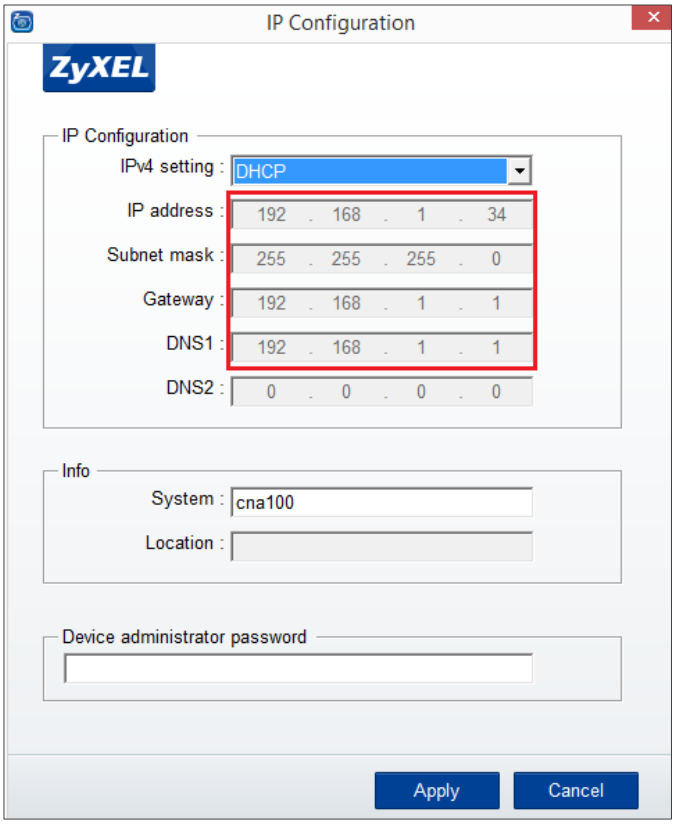
Figure 14 Organization Events



2.3 What Can Go Wrong?

1 If CNC does not display the CNA, CNA may be receiving an incorrect **DHCP configuration**. Use the **ZON utility** through the local network to verify the DHCP configurations. IP address configurations should be able to provide CNA access to the Internet.

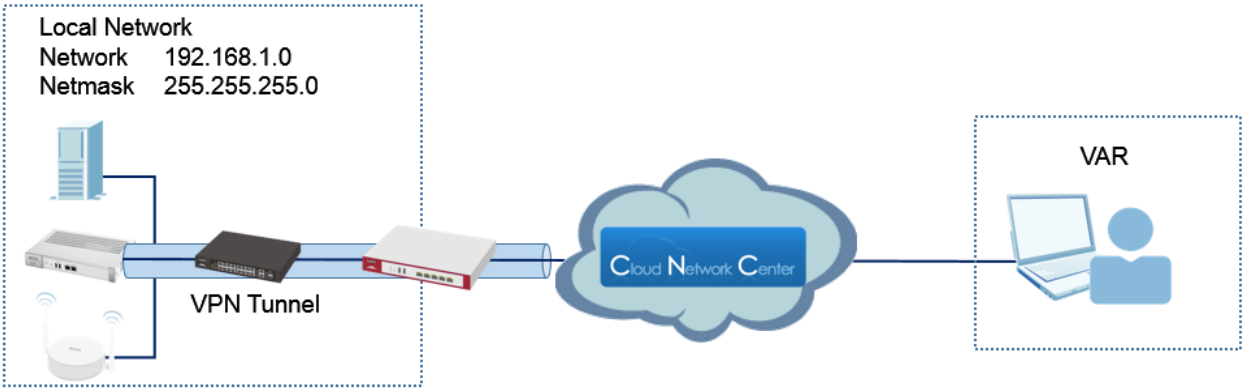
Figure 14 ZON > IP Configuration



3 How to Provide Value Added Service using CNC

This example shows how to perform value added services to customer site through **ZyXEL's Cloud Network Center (CNC)**. This example showcases the various value added services that CNC provides to remote sites.

Figure 15 Applying Value Added Service to Remote Site

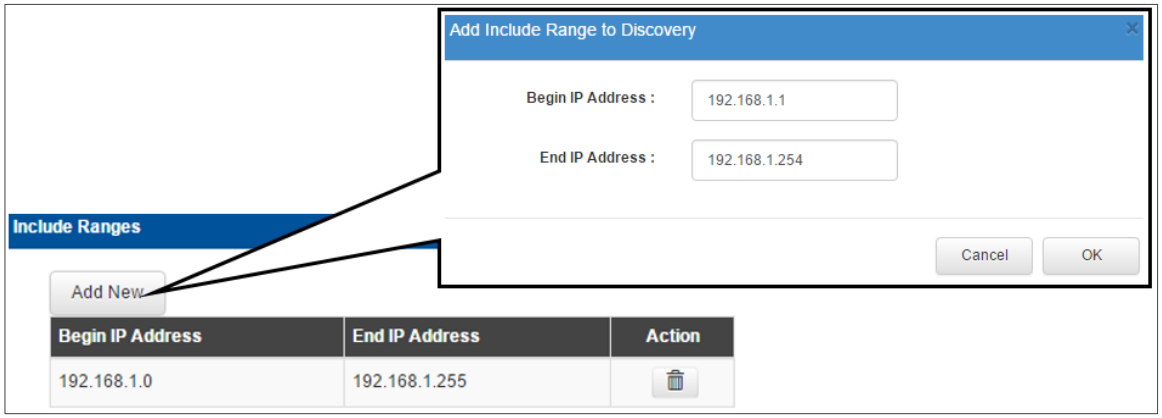


Note: All network IP addresses and subnet masks are used as examples in this article. Please replace them with your actual network IP addresses and subnet masks. This example was tested using USG110, GS1920-24HP, NWA5123-NI, and CNA100.

3.1 Discover ZyXEL Devices in the Local Network

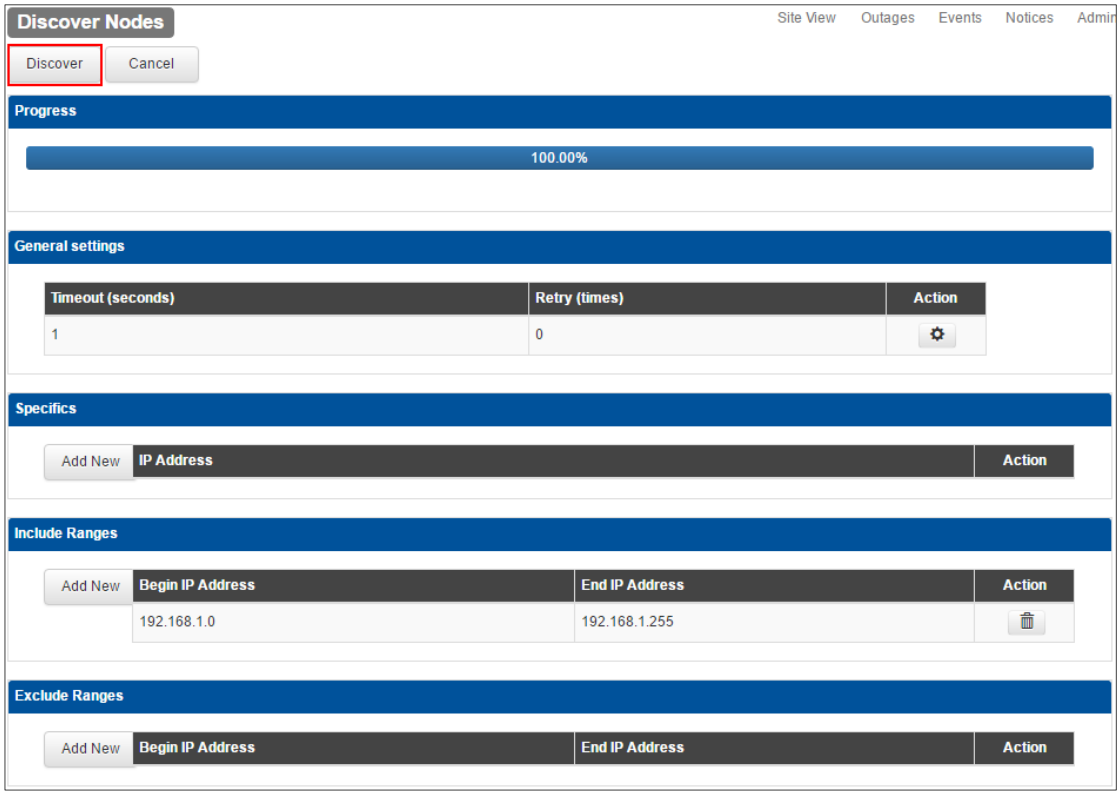
1 Log in to the ZyXEL CNC, go to **Site View > Admin > Discover Nodes**, Click **Add New** to input the first and last IP address of the CNA100's network.

Figure 16 Site View > Admin > Discover Nodes



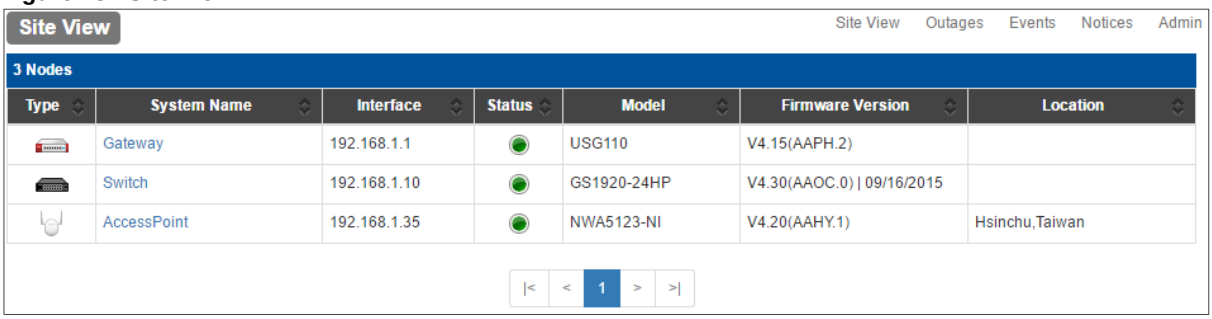
2 Clicking the **Discover** button initiates the discovery of ZyXEL devices. Wait for a few seconds for CNC to register all devices.

Figure 17 Site View > Admin > Discover Nodes



3 Go to **Site View** to verify that all ZyXEL devices are discovered.

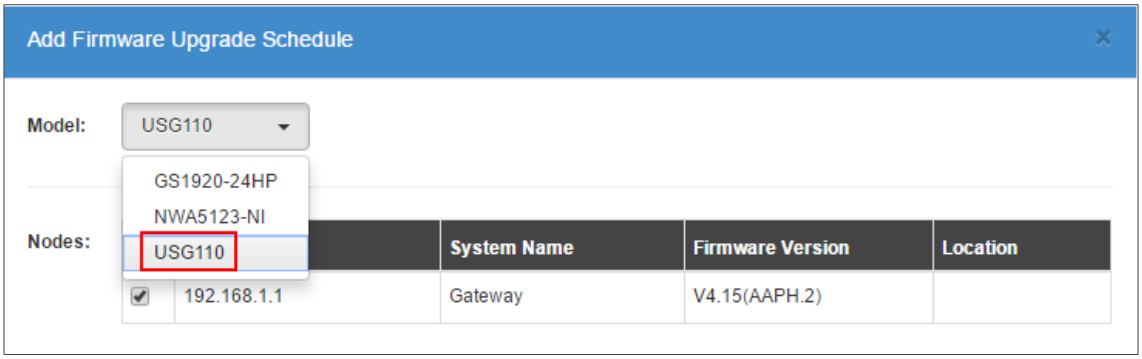
Figure 18 Site View



3.2 Schedule Firmware Upgrade

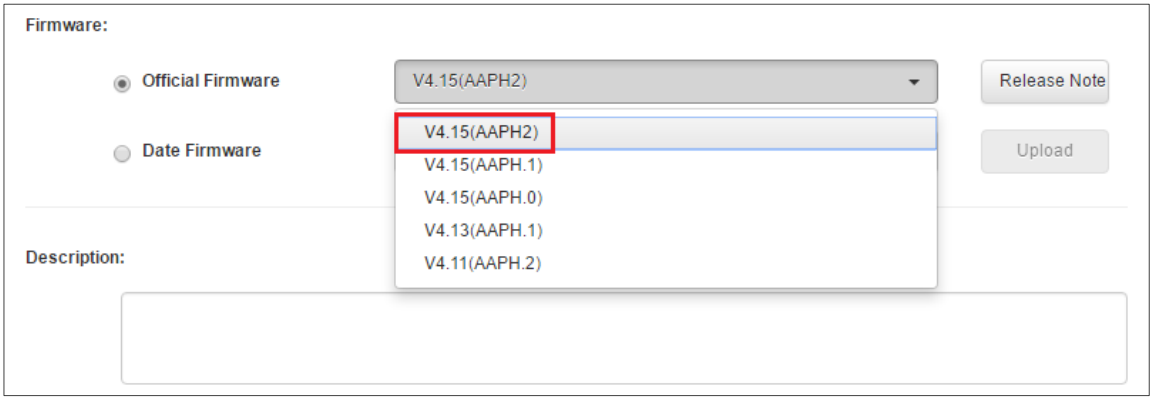
1 Log in to the ZyXEL CNC, go to **Site > Admin > Device Firmware Upgrade > Add New Schedule**. Select which model on the **Model** tab and check the IP address of devices ready for firmware upgrade.

Figure 19 Site > Admin > Device Firmware Upgrade > Add New Schedule



2 Select the latest firmware on the **Official Firmware** tab.

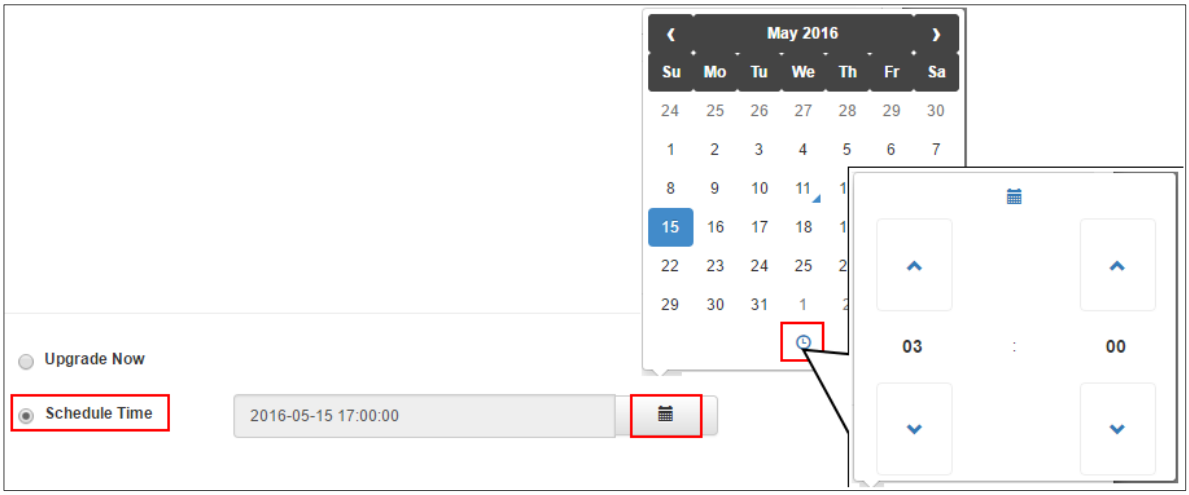
Figure 20 Site > Admin > Device Firmware Upgrade > Add New Schedule



Note: CNC automatically updates the **Official Firmware** list from the FTP servers. Administrators can upload a **Date Firmware** from their PC to the cloud server and select this firmware to upload to device.

3 Select **Upgrade Now** to initiate firmware upgrade immediately after clicking the **OK** button, or select **Scheduled Time** to initiate firmware upgrade on a specific date and time.

Figure 21 Site > Admin > Device Firmware Upgrade > Add New Schedule



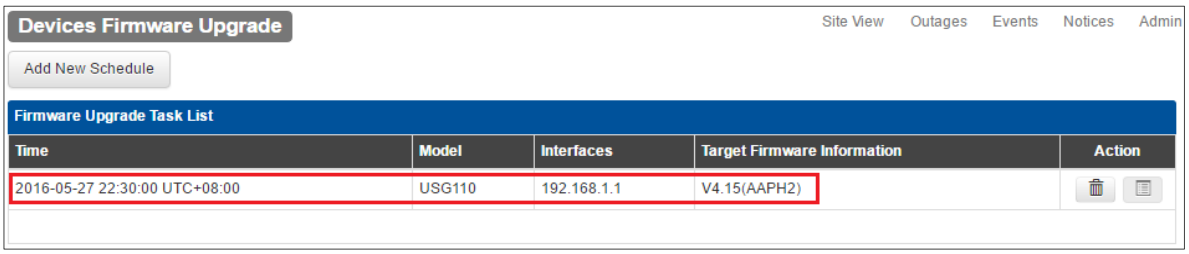
4 Check the **Reboot after firmware upgrade** box and click the **OK** button.

Figure 22 Site > Admin > Device Firmware Upgrade > Add New Schedule

Note: Successfully uploading a firmware does not mean device is already using that firmware. New firmware is only applied after a device's successful reboot.

5 Go to **Site > Admin > Device Firmware Upgrade > Add New Schedule.** An entry should display indicating a pending firmware upgrade schedule.

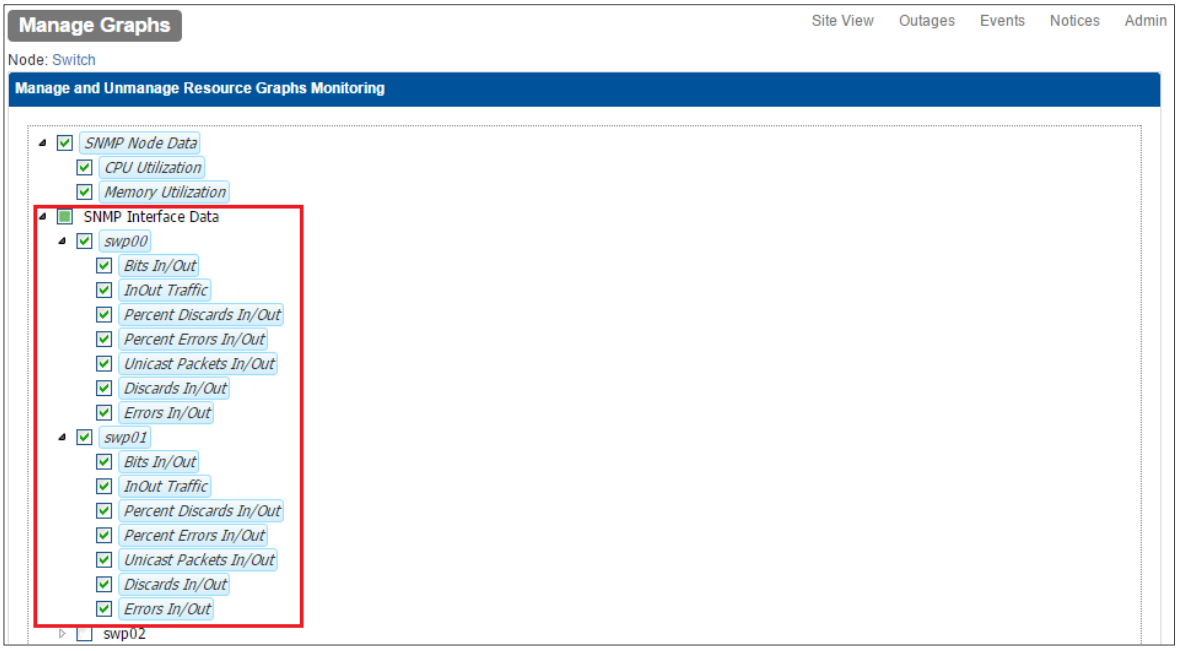
Figure 23 Site > Admin > Device Firmware Upgrade



3.3 Interpreting Graphs and Node Performance

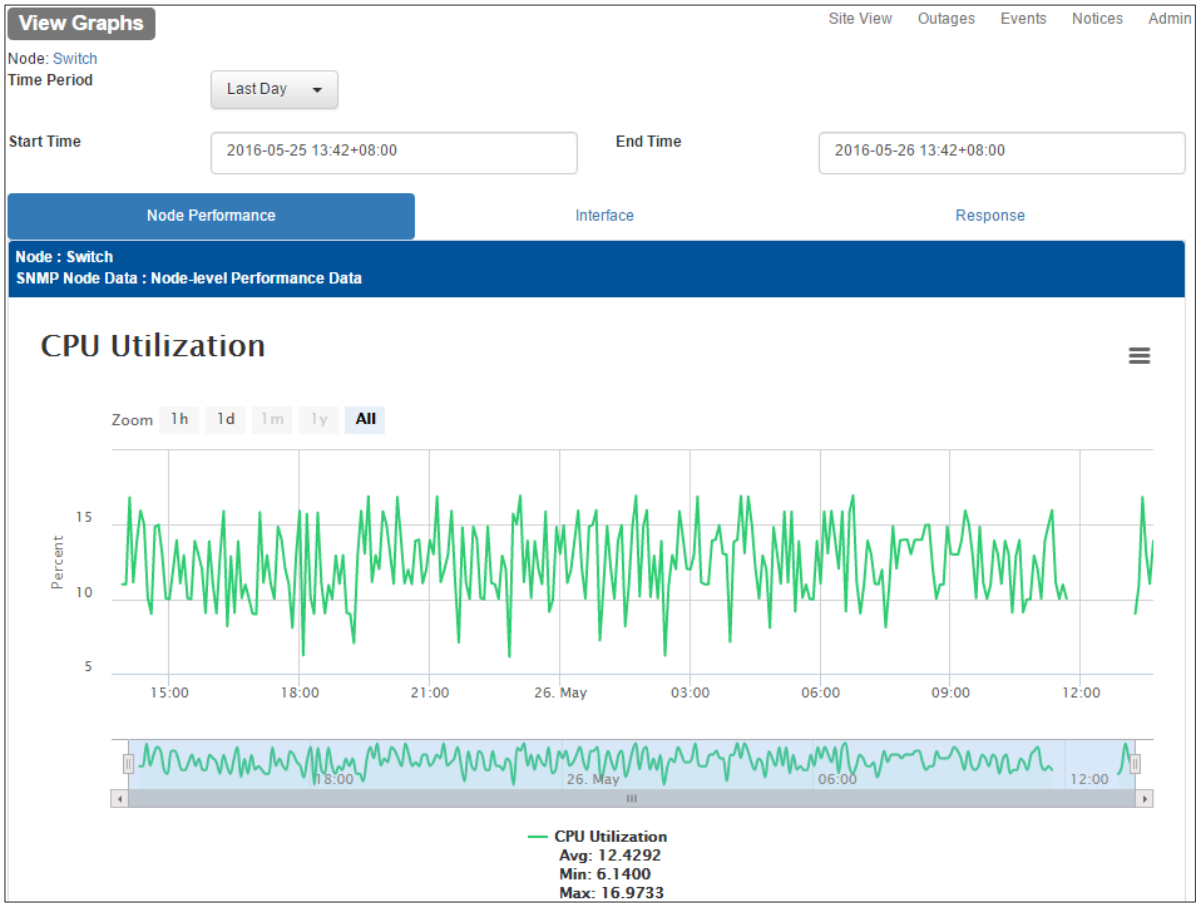
1 Log in to the ZyXEL CNC, go to **Site > System Name > Manage Graphs**. Check **SNMP Interface Data** on interfaces to core network resources (ex: uplink port, servers).

Figure 24 Site > System Name > Manage Graphs



2 Go to **Site View > System Name > View Graphs** to view the various graphs and statistics.

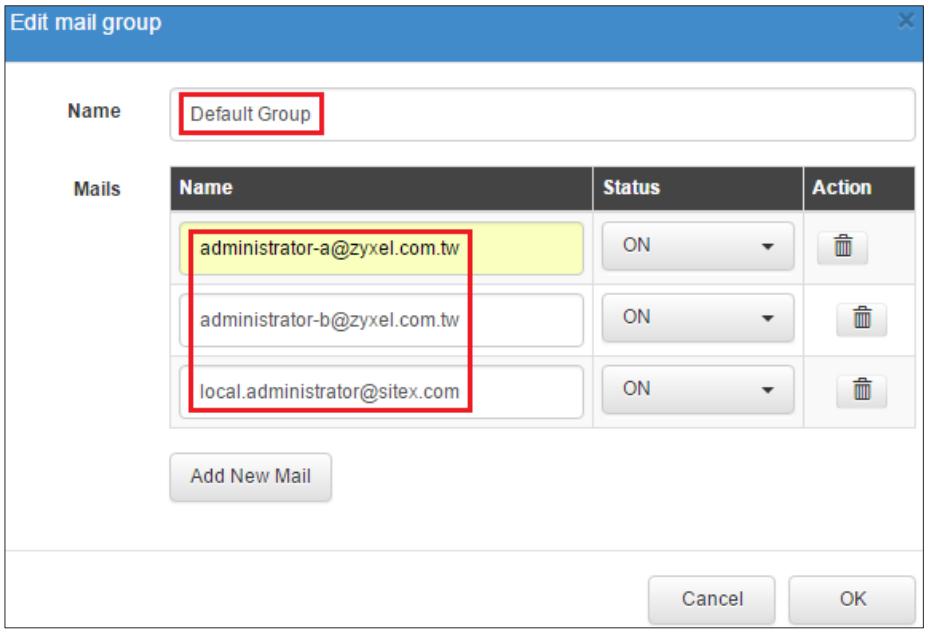
Figure 25 Site View > System Name > View Graphs



3.4 Receiving Email Notifications and Alerts during Link Failures

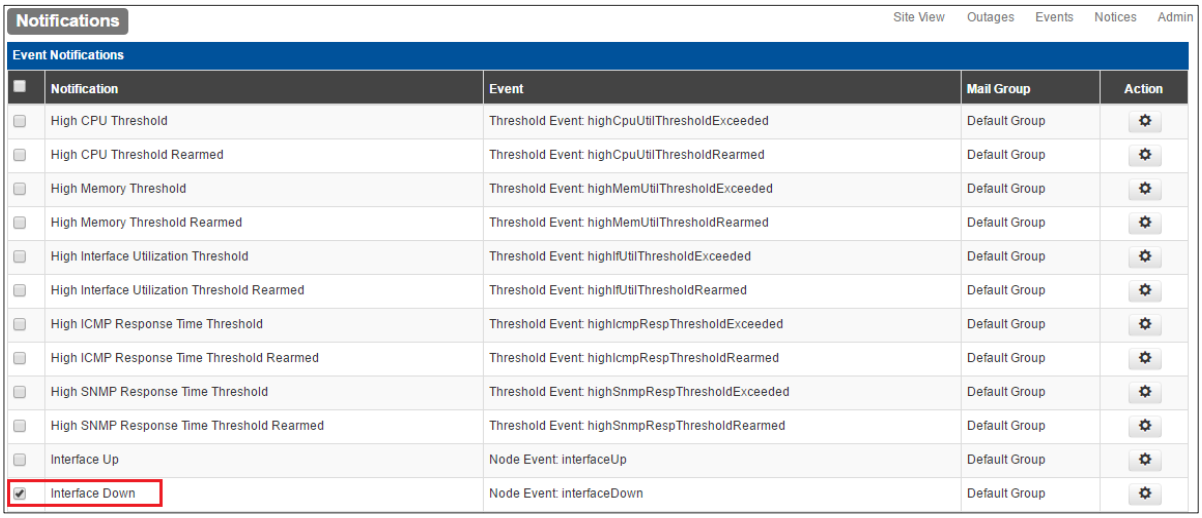
1 Log in to the ZyXEL CNC, go to **Site View > Admin > Mail Groups**. Add the email addresses of site administrators for **Default Group**.

Figure 26 Site View > Admin > Mail Groups > Settings



2 Go **Site View > Admin > Notifications**. Check the **Interface Down** notification and click the **Apply** button, afterwards.

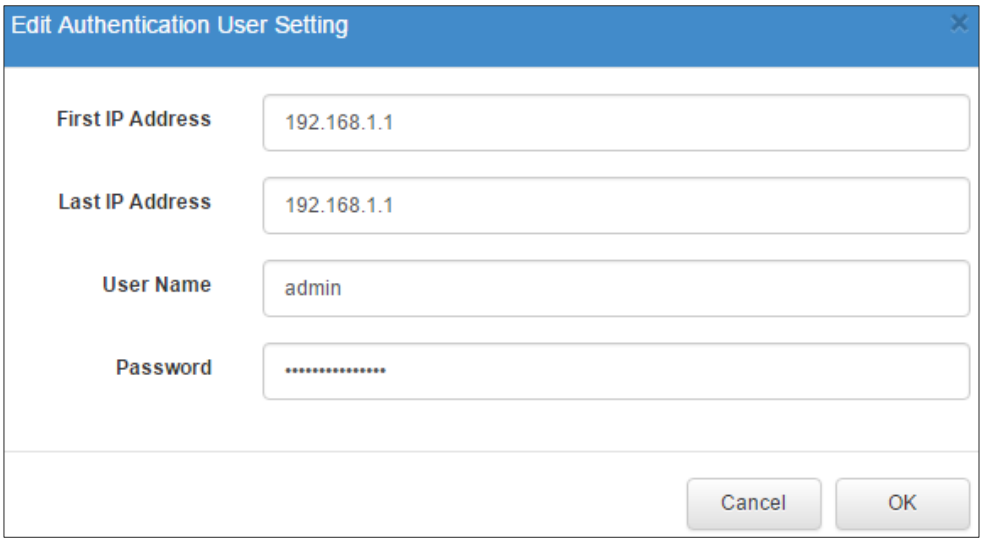
Figure 27 Site View > Admin > Notifications



3.5 Backing-Up and Restoring Device Configurations

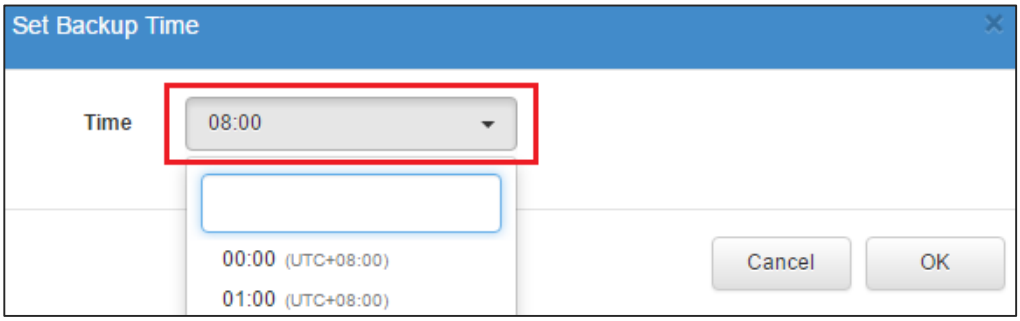
1 Log in to the ZyXEL CNC, go to **Site View > Admin > User Name/Password > Add New Setting**. Backing-up and restoring configurations requires the device's valid username and password. Edit the Authentication User Setting by setting the device's IP address, valid username, and valid password. The default User Name/Password profile is "**admin/1234**" for all IP addresses.

Figure 28 Site View > Admin > User Name/Password > Add New Setting



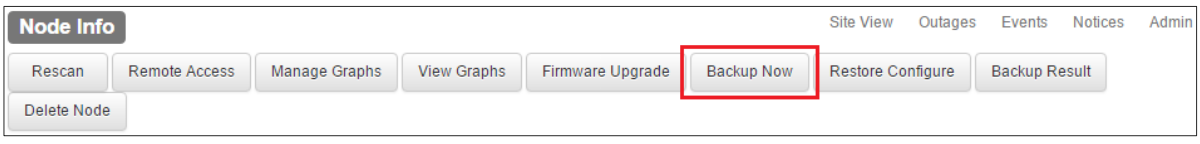
2 Go to **Site View > Admin > Backup Time Frame Setting** to set the time CNC saves and stores the device's daily running configurations. Click the **Setting** button under the **Action** column to edit the time.

Figure 29 Site View > Admin > Backup Time Frame Setting > Setting



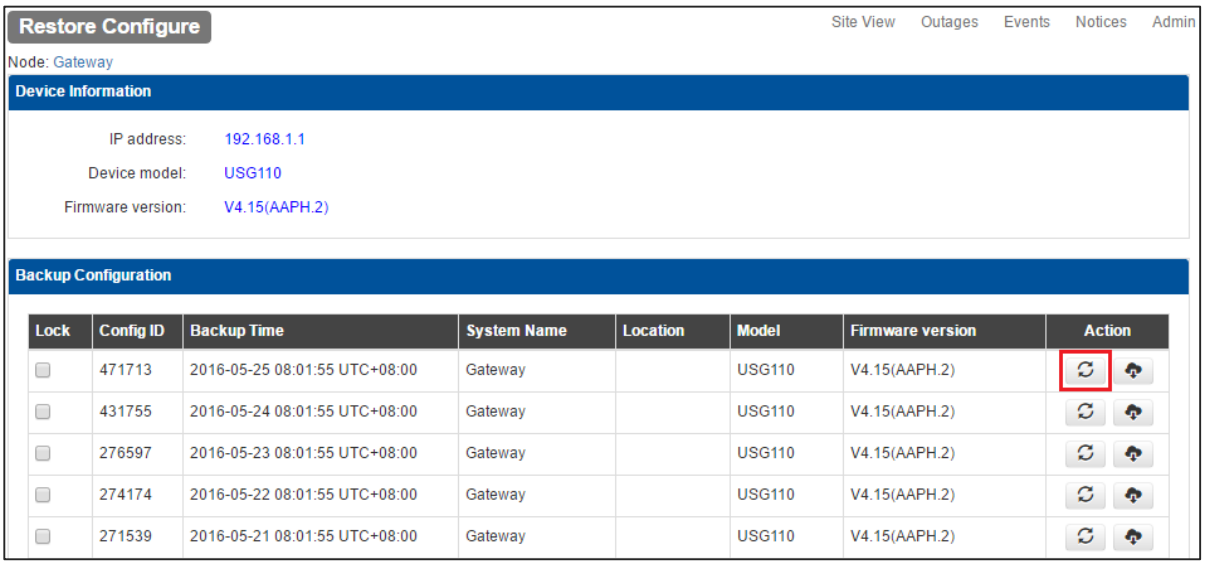
3 If you wish to manually back up a device's running configurations, go to **Site View > Device**. Click on the **Backup Now** button to save the device's running configurations to CNC.

Figure 30 Site View > Device



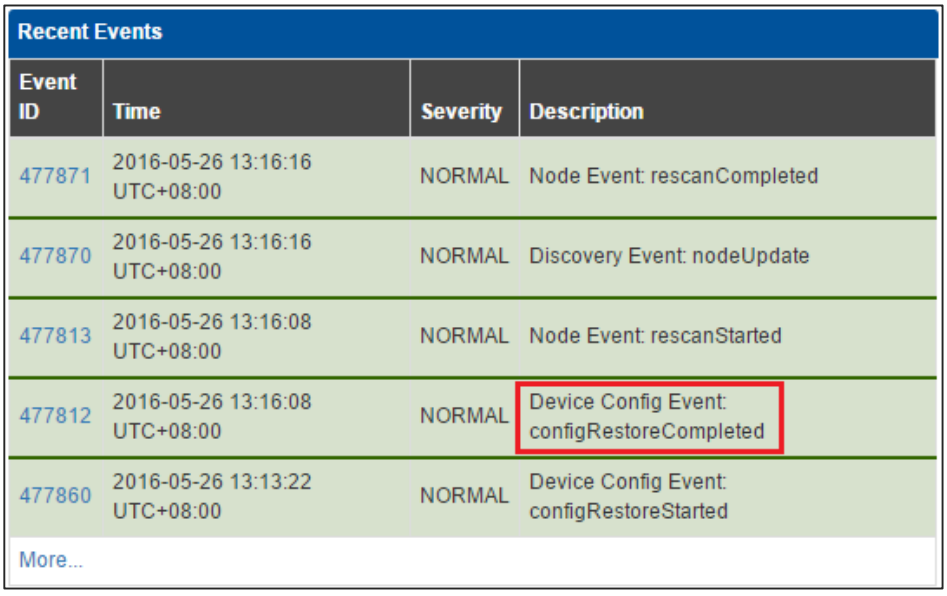
4 To restore running configurations of devices, go to **Site View > Device > Restore Configure**. Click the **Restore** button under the Action column of the specific Backup Time to upload this configuration.

Figure 31 Site View > Device > Restore Configure



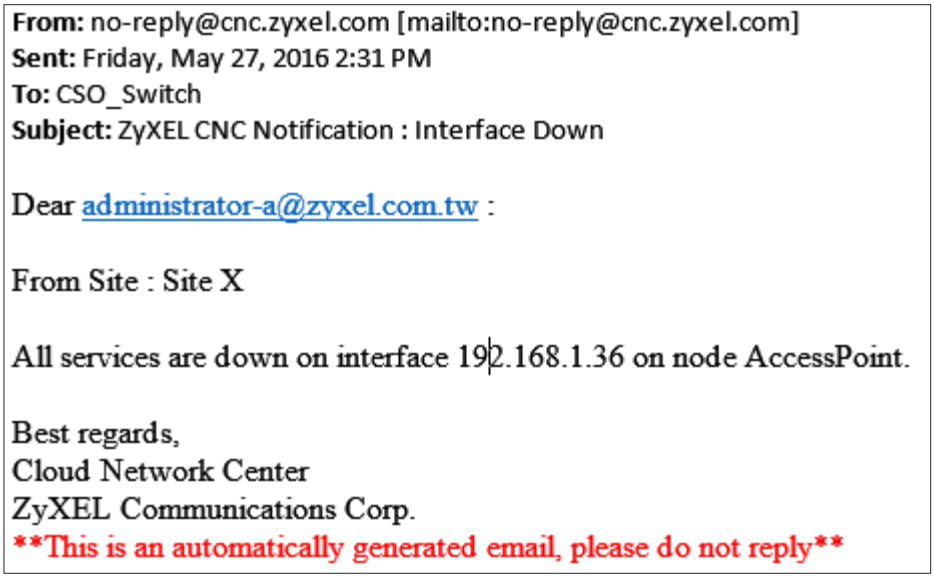
5 Go to **Site View > Device**. Recent Events should show a "**configRestoreCompleted**" message to indicate configuration upload is successful.

Figure 32 Site View > Device



6 Disconnect any non-uplink interface. CNC will send notifications to all accounts in the mail group. Access the mail box check if CNC has sent a notification.

Figure 33 Email Message


From: no-reply@cnc.zyxel.com [mailto:no-reply@cnc.zyxel.com]
Sent: Friday, May 27, 2016 2:31 PM
To: CSO_Switch
Subject: ZyXEL CNC Notification : Interface Down

Dear administrator-a@zyxel.com.tw :

From Site : Site X

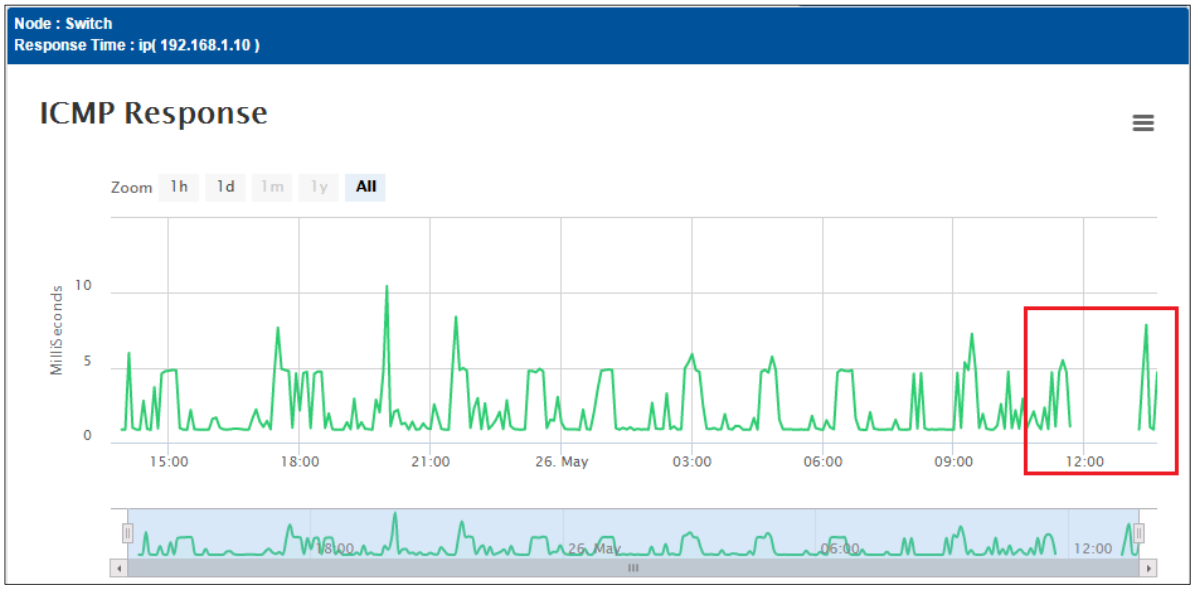
All services are down on interface 192.168.1.36 on node AccessPoint.

Best regards,
Cloud Network Center
ZyXEL Communications Corp.
This is an automatically generated email, please do not reply

3.6 What Can Go Wrong?

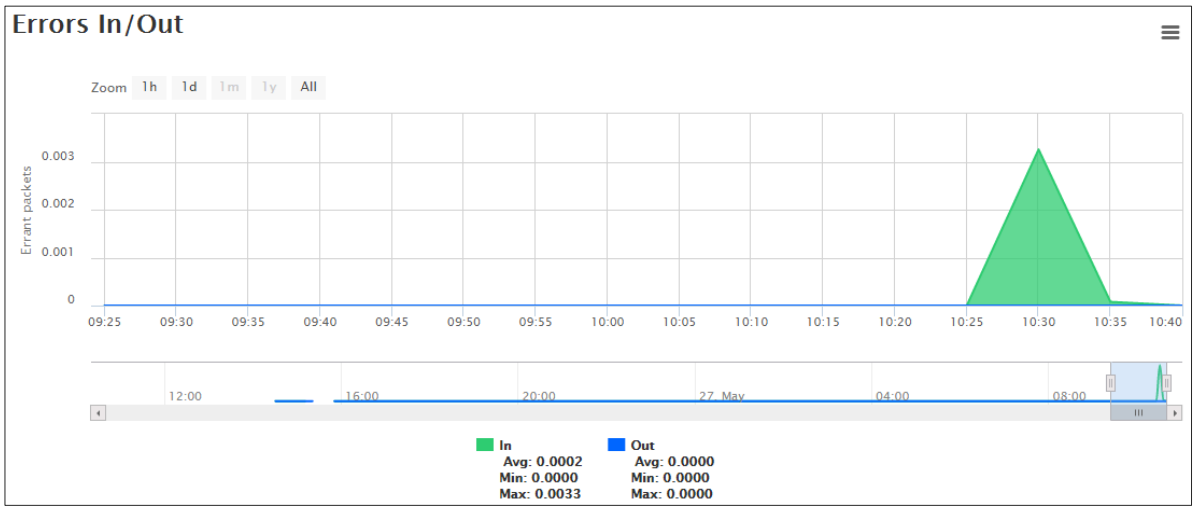
1 If the **ICMP Response** graph shows missing statistics, the following events may have occurred:
   a. CNC lost connection to CNA.
   b. CNA lost connection to this device.
   c. Network is under the influence of a broadcast storm.

Figure 34 Site View > System Name > View Graphs > Response



2 If the **Errors In/Out** interface graph shows any rise in counter, Ethernet cable may be damaged and require replacement.

Figure 35 Site View > System Name > View Graphs > Interface

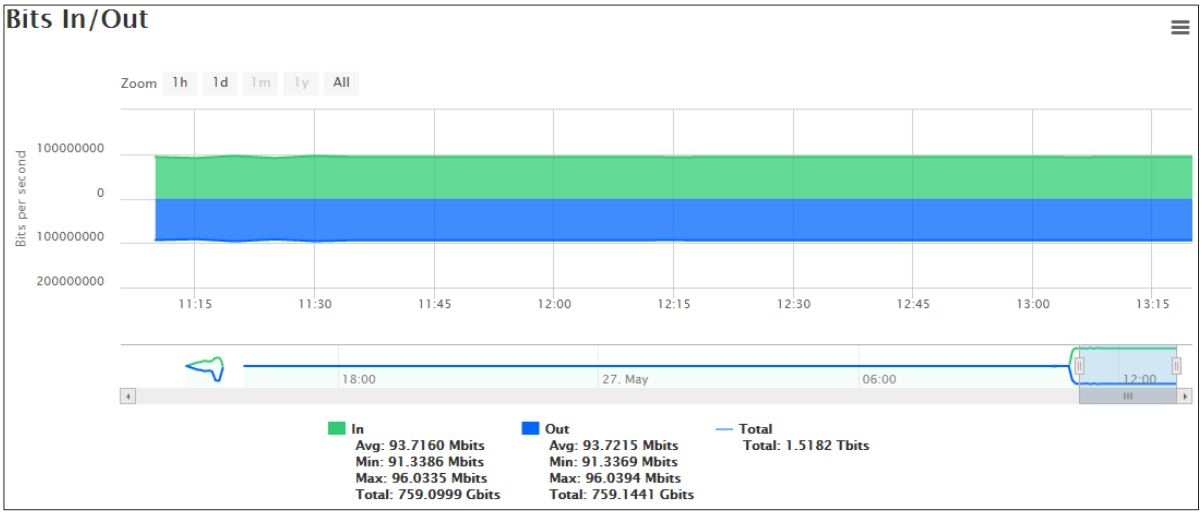


3 If the Bits In/Out graph of an interface shows a cutoff, the following may have occurred:

a. Link bandwidth is in overcapacity. Consider load balancing traffic.

b. Network is under the influence of a Broadcast storm. Determine if network has connected loops.

Figure 36 Site View > System Name > View Graphs > Interface



4 If the device Recent Events shows "**Device Config Event: configBackupFailed**", make sure that CNC is using the correct user name and password in **Site View > Admin > User Name/Password > Add New Setting** for this device's IP address.

Figure 37 Site View > Device

Recent Events

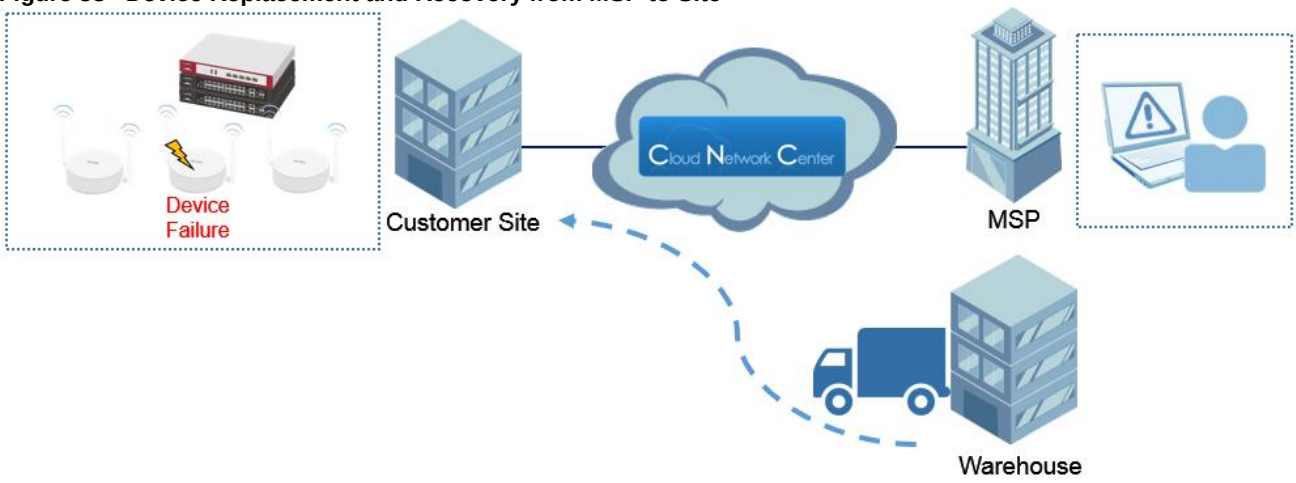
Event ID	Time	Severity	Description
473879	2016-05-25 13:51:44 UTC+08:00	MAJOR	Device Config Event: configBackupFailed
473877	2016-05-25 13:51:15 UTC+08:00	MAJOR	Device Config Event: configBackupFailed
473876	2016-05-25 13:26:49 UTC+08:00	MAJOR	Device Config Event: configBackupFailed
473874	2016-05-25 13:22:03 UTC+08:00	NORMAL	Node Event: manageGraphsEdited
471541	2016-05-25 08:02:16 UTC+08:00	NORMAL	Device Config Event: configBackupCompleted

More...

4 How to Replace and Recover Failed Devices

This example shows the general replacement process when a device is discovered to no longer able to power-on or perform any basic management or service on a remote site. The replacement process considers both **Centralized** and **Remote Site** management architecture. CNC provides a special feature called **Auto Restore** that allows convenient configurations and firmware recovery for replacement devices.

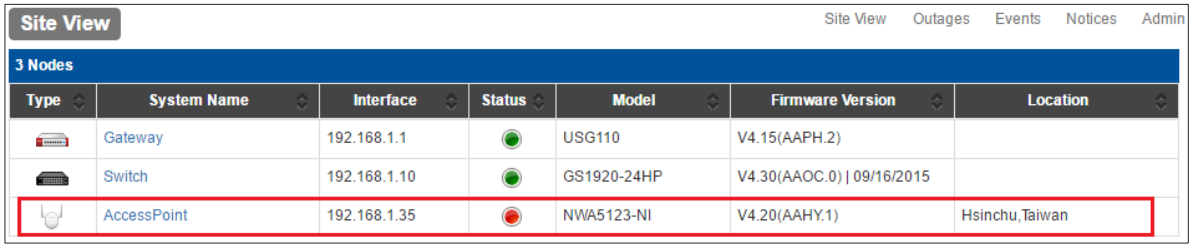
Figure 38 Device Replacement and Recovery from MSP to Site



4.1 Replacing Devices through Centralized Management

1 Log in to the ZyXEL CNC, go to **Site View**. The damaged or malfunctioning device will be indicated as **offline** status.

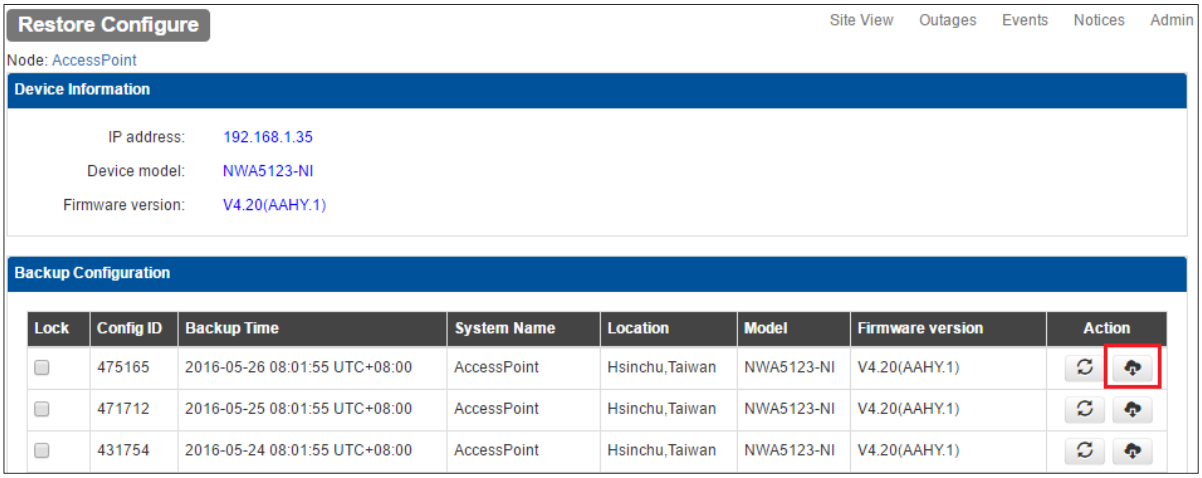
Figure 39 Site



Type	System Name	Interface	Status	Model	Firmware Version	Location
	Gateway	192.168.1.1		USG110	V4.15(AAPH.2)	
	Switch	192.168.1.10		GS1920-24HP	V4.30(AAOC.0) | 09/16/2015	
	AccessPoint	192.168.1.35		NWA5123-NI	V4.20(AAHY.1)	Hsinchu,Taiwan

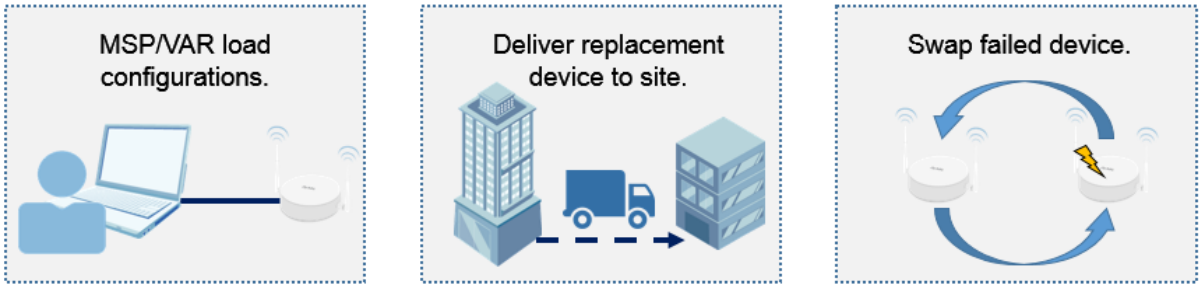
2 Go to **Site View > Device > Restore Configure**. Download the last good configuration by clicking on the **Download** button below the Action column.

Figure 40 Site View > Device > Restore Configure



3 Prepare replacement device in MSP office and upload the last good configuration. After uploading and saving configurations, deploy device back to remote site.

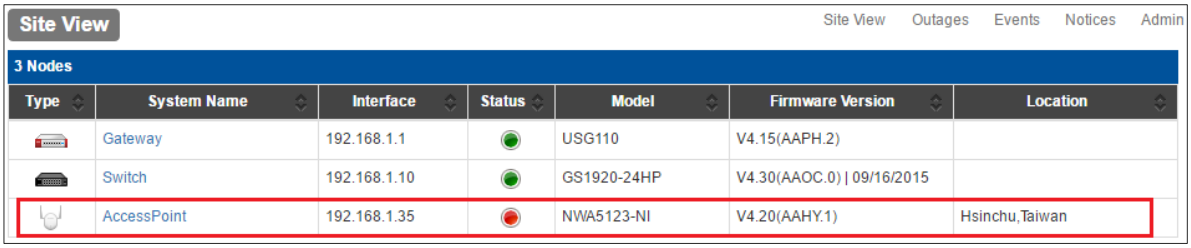
Figure 41 Centralized Restoration



4.2 Replacing Devices through Remote Site Management

1 Log in to the ZyXEL CNC, go to **Site View**. The damaged or malfunctioning device will be indicated as **offline** status.

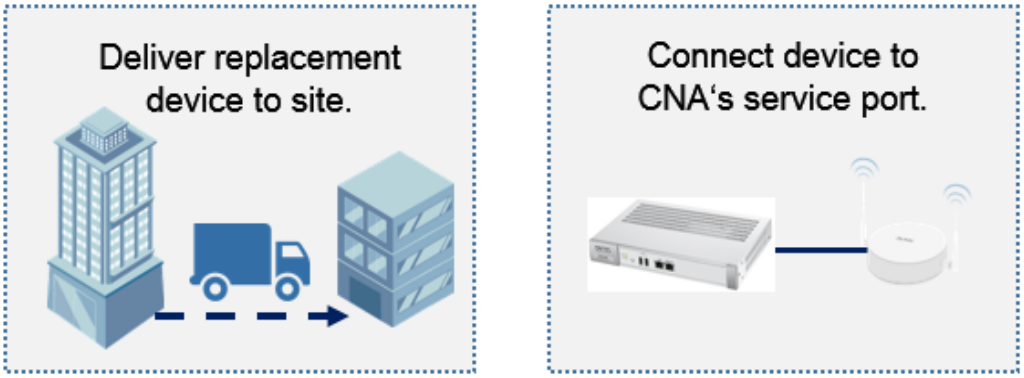
Figure 42 Site View



Type	System Name	Interface	Status	Model	Firmware Version	Location
	Gateway	192.168.1.1		USG110	V4.15(AAPH.2)	
	Switch	192.168.1.10		GS1920-24HP	V4.30(AAOC.0) | 09/16/2015	
	AccessPoint	192.168.1.35		NWA5123-NI	V4.20(AAHY.1)	Hsinchu,Taiwan

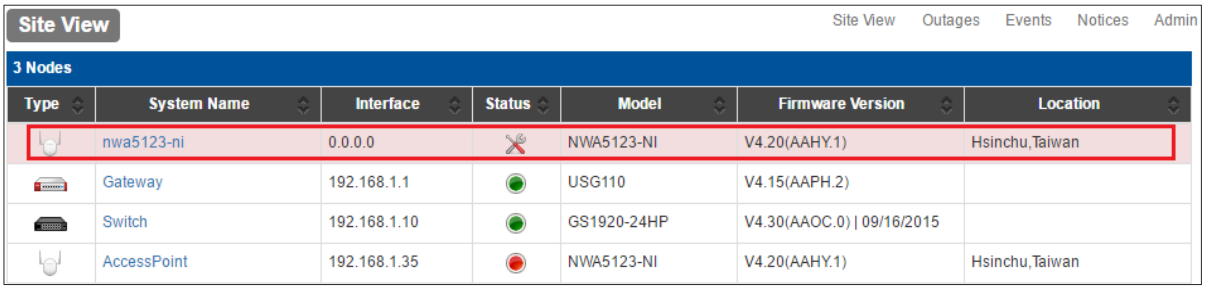
2 Deploy replacement device to remote site. Have the local administrator connect replacement device to the CNA's service port.

Figure 43 Remote Site Restoration



3 Log in to the ZyXEL CNC, go to **Site View**. Click on the **System Name** of the device with the unique icon ( ) that appears.

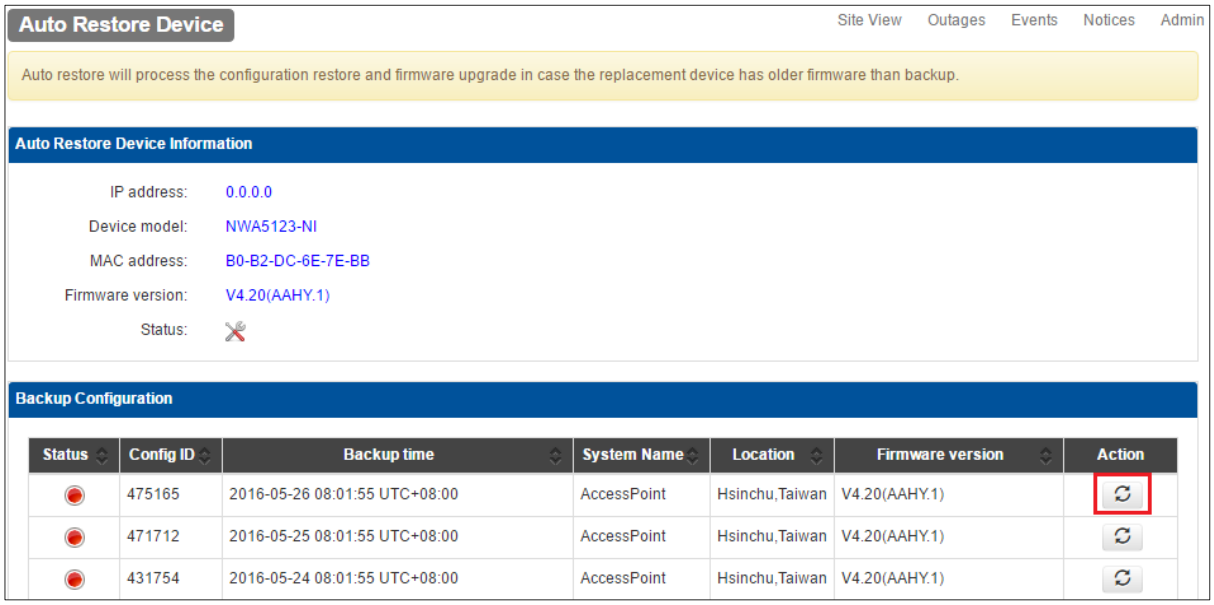
Figure 44 Site View



Type	System Name	Interface	Status	Model	Firmware Version	Location
	nwa5123-ni	0.0.0.0		NWA5123-NI	V4.20(AAHY.1)	Hsinchu,Taiwan
	Gateway	192.168.1.1		USG110	V4.15(AAPH.2)	
	Switch	192.168.1.10		GS1920-24HP	V4.30(AAOC.0) | 09/16/2015	
	AccessPoint	192.168.1.35		NWA5123-NI	V4.20(AAHY.1)	Hsinchu,Taiwan

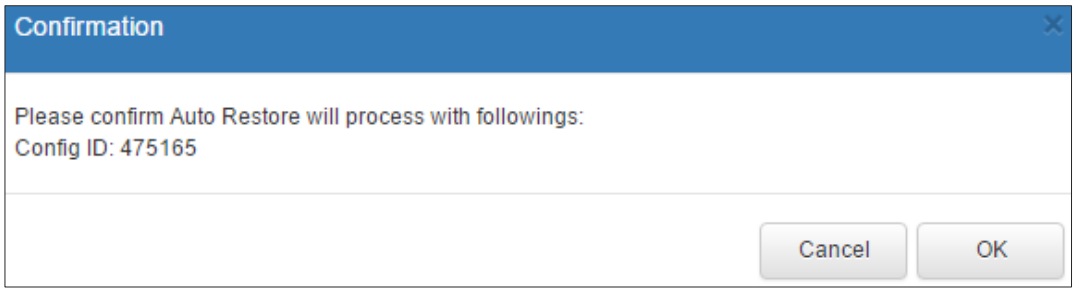
4 Click on the **Restore** icon of the last known good configuration under the Action column.

Figure 45 Site View > Auto Restore Device



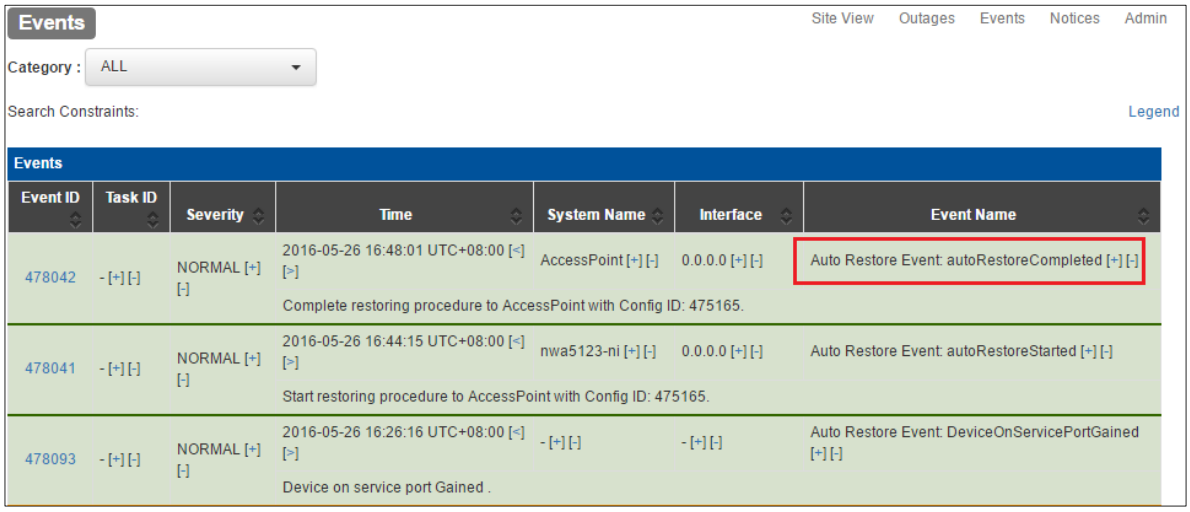
5 Click on the OK button to confirm that device will perform Auto Restore using the selected configurations and firmware. Wait for a few minutes until

Figure 46 Site View > Auto Restore Device > Confirmation



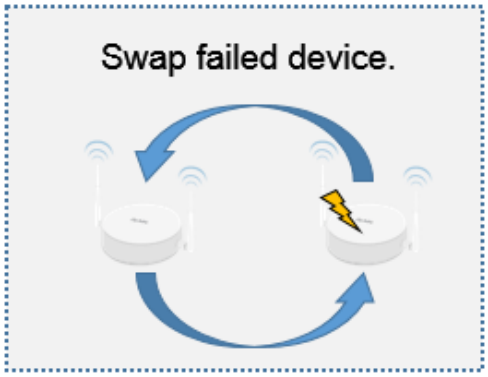
6 Go to Site > Events. Wait for **Event Name** "**autoRestoreCompleted**" message to appear. This will indicate that device has been successfully recovered and can now be disconnected from the CNA's service port.

Figure 47 Site > Events



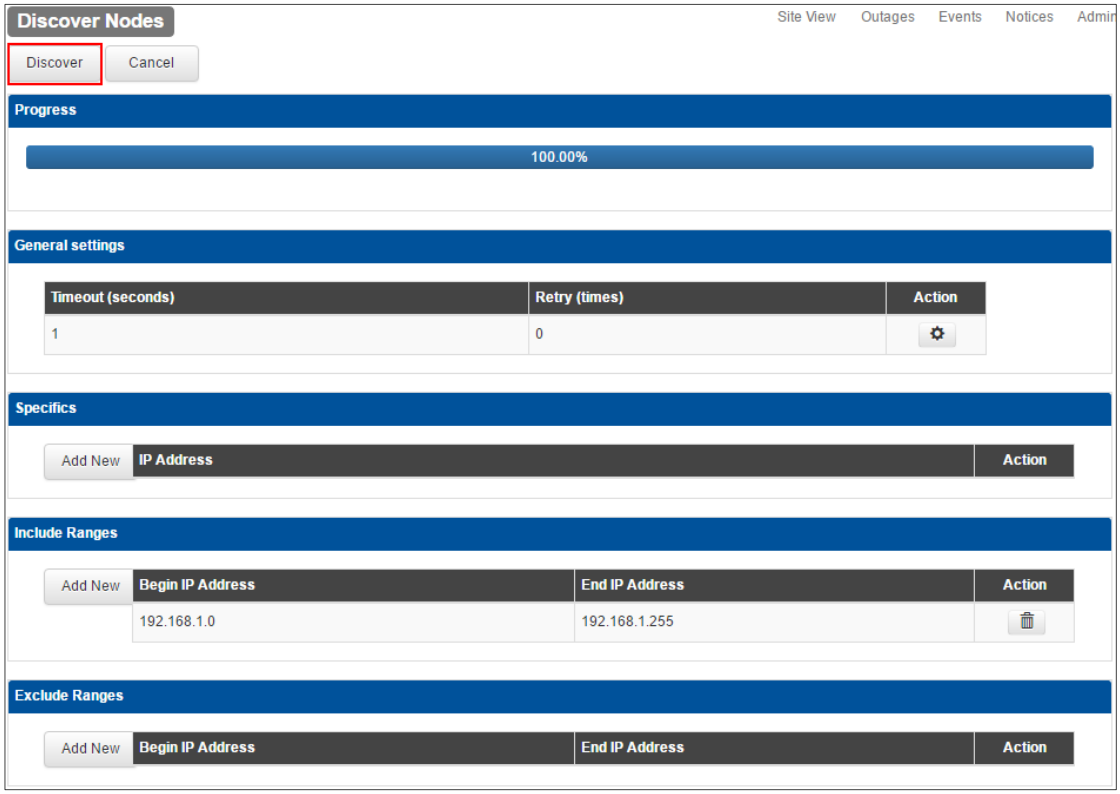
7 Contact the local administrator to swap the damaged or malfunctioning device with the replacement device.

Figure 48 Swap Replacement Device



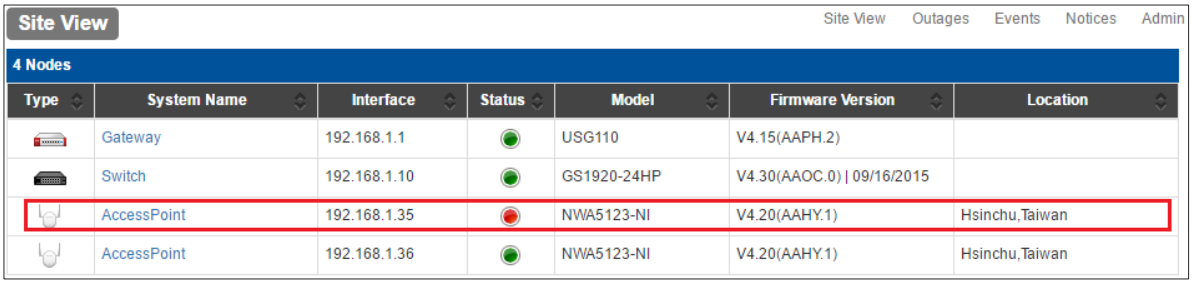
8 If the malfunctioning or damaged device was using dynamic IP address configurations, go to **Site View > Admin > Discover Nodes**. Re-discover all the ZyXEL devices in the site's local network.

Figure 49 Site View > Admin > Discover Nodes



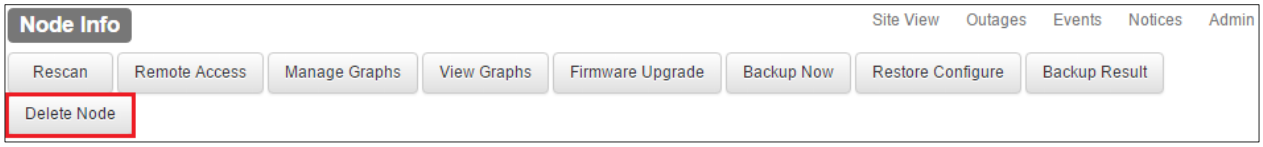
9 Go to **Site View**. If the replacement device is now indicated as an online device, click the System Name of the old entry.

Figure 50 Site View



10 After going to **Site View > Device**, click the Delete Node button to remove this node from the site device list.

Figure 51 Site View > Device

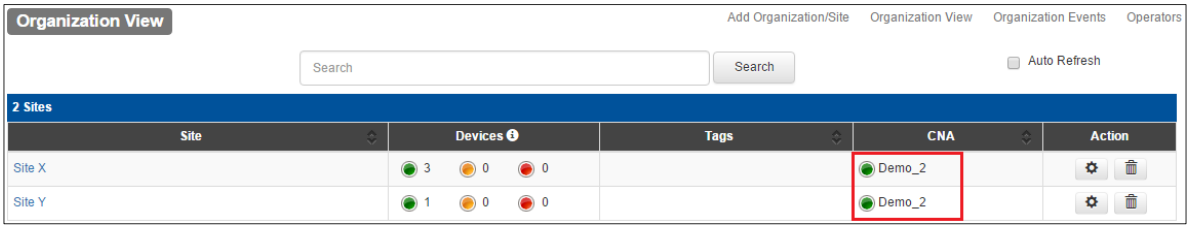


Note: Removing a node permanently removes the all the node's historic data. This includes the monitoring data, threshold status, and backup configurations.

4.3 What Can Go Wrong?

1 If the CNC does not display the device connected to the service port, go to **Organization View** to verify how many sites are being managed by this CNA. Auto Restore is disabled if the CNA is managing more than one site.

Figure 52 Organization View



2 If the replacement device did not match the **Backup Configuration**'s firmware after undergoing auto restore, verify which firmware the replacement device was using. **Auto Restore** only updates firmware if the replacement device's firmware is older than the **Backup Configuration**.

Figure 53 Site View > Auto Restore Device