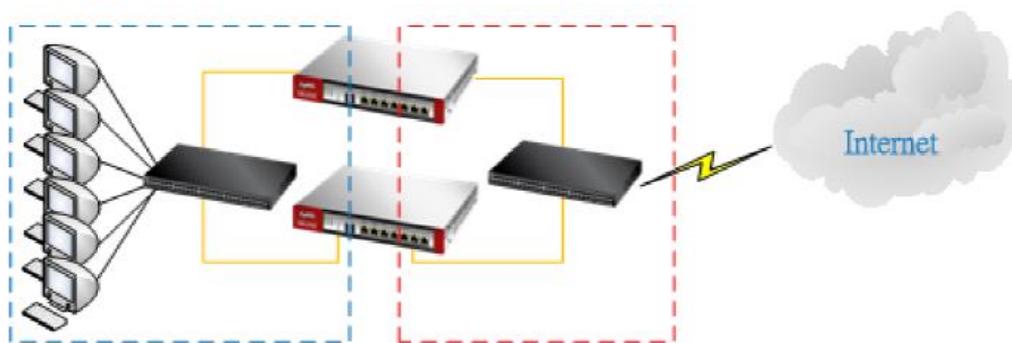**ZYXEL**

Device HA Setup

Supported Devices

ZyWALL 110
ZyWALL 310
ZyWALL 1100
USG40/40W/40HE
USG60/60W
USG110
USG210
USG310
USG1100
USG1900

Overview

Device High Availability (Device HA) adds network/internet redundancy by allowing a backup ZyWALL/USG automatically take over if the master ZyWALL/USG fails.

Scenario

Equipment Needed:

1) Two+ same model ZyWALL/USG devices (running the same firmware version)

2) Two switches (one for WAN connection and the second for the LAN)

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Master Device Setup

WAN IP: 65.65.65.65 (static IP)

LAN IP: 192.168.25.254

LAN Mask: 255.255.255.192

Port Roles: All ports configured as LAN1

Management IP: 192.168.25.253

Backup Device Setup

WAN IP: same as master

LAN IP: same as master

LAN Mask: same as master

Port Roles: same as master

Management IP: 192.168.25.252

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Master Device HA Setup

The following steps are based on the assumption that the ZyWALL/USG has already been configured and are now attempting to setup device high availability.   Make sure that both ZyWALL/USG routers are the same model number and are running the same firmware version. Update the firmware on the device to latest firmware patch, if available, before running the Device HA setup.

From the device WebGUI go to menu, **Configuration → Device HA** and click on the "*Active-Passive Mode*" tab and check the following:

- Device Role – Set to Master

- Cluster ID – Set to 1

- Edit the LAN1 interface and setup a management IP address, the management IP address for the Master device will be 192.168.25.253 (based on the example scenario described above).   Check the box to "Enable Monitored Interface" and click the "**OK**" button to save/apply the settings.
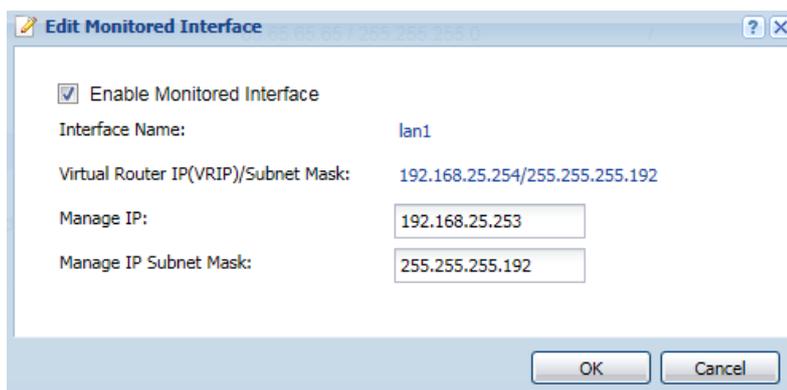
- Click the "**Apply**" button at the bottom of the screen to save changes to the menu.

- Edit the WAN interface and check the box to "Enable Monitored Interface" and click the "**OK**" button to save/apply the settings.
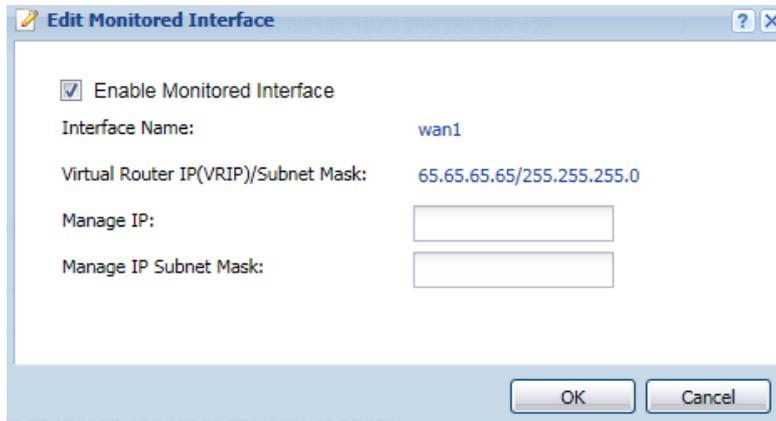
Note: If you have a block of public IP addresses and wish to use a different public IP address to manage the device from the internet, set the Managed IP.

- Under the Synchronization settings setup a password.

- Click the "**Apply**" button at the bottom of the screen to save changes to the menu.

Now click on the "*General*" tab (**Configuration → Device HA → General**) and check the box to "Enable Device HA".

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General Settings

☑ Enable Device HA

Device HA Mode: Active-Passive Mode

Monitored Interface Summary

#	Interface ▲	Virtual Router IP/Netmask	Management IP / Netmask	Link Status	HA Status
1	wan1	65.65.65.65 / 255.255.255.0	/	Up	Master / Active
2	lan1	192.168.25.254 / 255.255.255.192	192.168.25.253 / 255.255.255.192	Up	Master / Active

|◀ ◀ | Page 1 of 1 | ▶ ▶| | Show 50 ▼ items   Displaying 1 - 2 of 2

Click the "**Apply**" button at the bottom of the screen to save the settings.

Verify Time/Date

From the ZyWALL/USG WebGUI go to menu, **Configuration → System → Date/Time** and set the correct time manually or set it to sync with NTP time server.

Current Time and Date

Current Time: 10:49:21 GMT-07:00

Current Date: 2015-09-02

Time and Date Setup

◯ Manual

New Time (hh:mm:ss):   10 : 49 : 00

New Date (yyyy-mm-dd):   2015-09-02

⦿ Get from Time Server

Time Server Address*:   0.pool.ntp.org   [Sync. Now]

*Optional. There is a pre-defined NTP time server list.

Time Zone Setup

Time Zone: (GMT-08:00) Pacific Time (US & Canada), Tijuana ▼

☑ Enable Daylight Savings

Start Date: Second ▼ Sunday ▼ of March ▼ at 02 : 00

End Date: First ▼   Sunday ▼ of November ▼ at 02 : 00

Offset: 1   Hours

Backup Configuration

From the ZyWALL/USG WebGUI go to menu, **Maintenance → File Manager** and download a copy of the startup-config.conf file from the "*Configuration File*" tab.
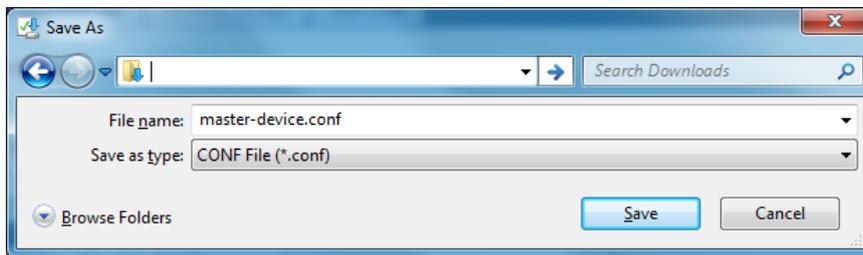
Configuration Files

	Rename	Remove	Download	Copy	Apply			
#	**File Name**					**Size**	**Last Modified**	
1	system-default.conf					67664	2015-08-24 10:47:30	
2	lastgood.conf					21134	2015-09-01 08:49:24	
3	startup-config.conf					71496	2015-09-02 07:58:09	
4	htm-default.conf					20	2013-11-27 04:46:47	
5	413AAPI1C0.conf					67664	2015-09-01 08:44:14	
6	413AAPI0-2015-09-01-15-45-40.conf					21134	2015-09-01 08:45:40	

Page 1 of 1 | Show 50 items | Displaying 1 - 6 of 6

Be sure to rename the file before saving to your computer.

Save As

Search Downloads

File name: master-device.conf

Save as type: CONF File (*.conf)

Browse Folders   Save   Cancel

Backup Device HA Setup

Login to the second ZyWALL/USG WebGUI (device that will be backup/slave/stand-by) and go to menu, **Maintenance → File Manager** and upload the backup configuration file that was saved from the master device.

Upload Configuration File

To upload a configuration file, browse to the location of the file (.conf) and then click Upload.

File Path: C:\fakepath\master-device.conf   Browse...   Upload

Once the configuratino file has been uploaded apply the configuration file.

Configuration Files

Rename | Remove | Download | Copy | Apply

#	File Name	Size	Last Modified
1	system-default.conf	67664	2015-08-24 10:47:30
2	lastgood.conf	21134	2015-09-01 08:49:24
3	startup-config.conf	71496	2015-09-02 10:59:41
4	htm-default.conf	20	2013-11-27 04:46:47
5	master-device.conf	71496	2015-09-02 11:01:17

Page 1 of 1 | Show 50 items   Displaying 1 - 5 of 5

Once the configuration is applied, go to menu **Configuration → Device HA** to make changes for the backup device setup.   Click the "*Active-Passive Mode*" tab and make the following changes:

- Device Role – Set to Backup

- Click the "Apply" button at the bottom of the screen to save the changes/settings.

- Edit the LAN1 interface and change the management IP address to 192.168.25.252 (based on example scenario).   Click the "**OK**" button to save/apply the settings.

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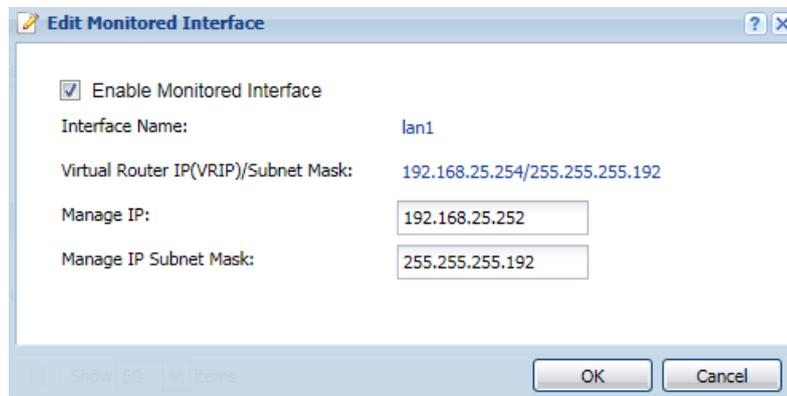
Note: If a management IP address was created for the WAN connection, edit the backup ZyWALL/USG with a differnet management IP.

- Configure the Synchronization settings to sync with the master device:

    a) Server Address – Enter master device management IP address (192.168.25.253 based on example scenario)

    b) Server Port – Set to 21 (based on master device Synchronization setup)

    c) Password – Type in the password that was setup in the master device synchronization setup

    d) Auto Synchronize – Check the box to have the backup device automatically sync with master device and set a sync interval (in minutes)

Synchronization

Server Address:	192.168.25.253	(IP or FQDN)	Sync. Now
Server Port:	21		
Password:	••••••••		
Retype to Confirm:	••••••••		
☑ Auto Synchronize			
Interval:	30	minutes (5-1440)	
Next Sync Time:	N/A		

Note: Backup device's configuration can synchronize with master device's.

- Click the "**Apply**" button at the bottom of the screen to save changes to the menu.

Completing the Setup

To finalize the setup:

- Connect the internet source (xDSL/Cable/Ethernet/FTTH) to the first switch.

- Connect the WAN port on both the Master and Backup ZyWALL/USG to the first switch.

- Connect the LAN port from both the Master and Backup ZyWALL/USG to the second switch.

- Connect all your network devices to the second switch

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Troubleshooting

Internet connection to master device has seized but backup does not seem to be working either.   What can I check for?

- Check the physical connections.

- Bypass the ZyWALL/USG.   Unplug the WAN connections to both master and backup or power down the devices.   Connect a computer directly to the first switch (connected to modem) and verify there is an internet connection.   If there is not internet connection, bypass the switch and connect computer directly to the modem and test again.   If there is still no internet when connected directly to modem, contact ISP.

- Make sure that "Connectivity Check" is enabled for the WAN interface(s).   If connectivity check is not enabled the USG will not be able to test the internet connection to determine whether it's active or inactive.   To enable this feature please login to the ZyWALL/USG WebGUI and go to menu, **Configuration → Network → Interface** and select the "*Ethernet*" or "*PPP*" tab (depending on your internet connection type).   Edit the appropriate WAN connection and scroll down to the "Connectivity Check" section and do the following:

  a) Enable Connectivity Check – Check the box to enable the feature

  b) Check Method – Select a test method, by default the ZyWALL/USG will test using ICMP/PING traffic (options are: ICMP or TCP)

     Note: If TCP is selected a new option will appear to specify the TCP port to test against.

c) Check Period – Time period between connection check attempts (in seconds)

d) Check Timeout – Time to wait for response before attempt is considered a failure (in seconds)

e) Check Fail Tolerance – Number of consecutive failures before the ZyWALL/USG stops routing through the gateway

f) Specify the internet address to run the test against.   By default the ZyWALL/USG will attempt to test against the default gateway provided by the ISP.   It is highly recommended that the test be ran against a reliable external (internet) address.

Connectivity Check

☑ Enable Connectivity Check

Check Method:	icmp	
Check Period:	30	(5-600 seconds)
Check Timeout:	5	(1-10 seconds)
Check Fail Tolerance:	5	(1-10)
○ Check Default Gateway	65.65.65.1	
◉ Check this address	4.2.2.1	(Domain Name or IP Address)

- Make sure you have waited enough time.   If the issue is in regards to hardware (whether hardware failure or physical link is down) the backup device will start routing traffic faster.   If the issue is related to traffic flow seizing for the master device, the connectivity check period must be taken into account and will impact the amount of time it takes for the switch between master and backup device.

Master device has rules configured that stop working when backup device takes over.   Or, devices are not synching.   What can I do?

- Make sure Synchronization is configured on both Master and Backup devices.

- Make sure the synchronization port is the same.   Check the master device to see what the sync port is set to.

- Make sure the synchronization password is the same on both devices (Master and Backup).

- Make sure the Backup device is configured with the correct synchronization server IP.   The Backup device should be attempting to sync with the management IP address, not the public IP or real LAN interface IP.

- Make sure Auto Synchronize is enabled.

- Check the Backup device to see when the next sync time will take place.   If changes have been made on the master device and fails before auto sync runs, any changes that were made on the master device will not be reflected on the backup device.