

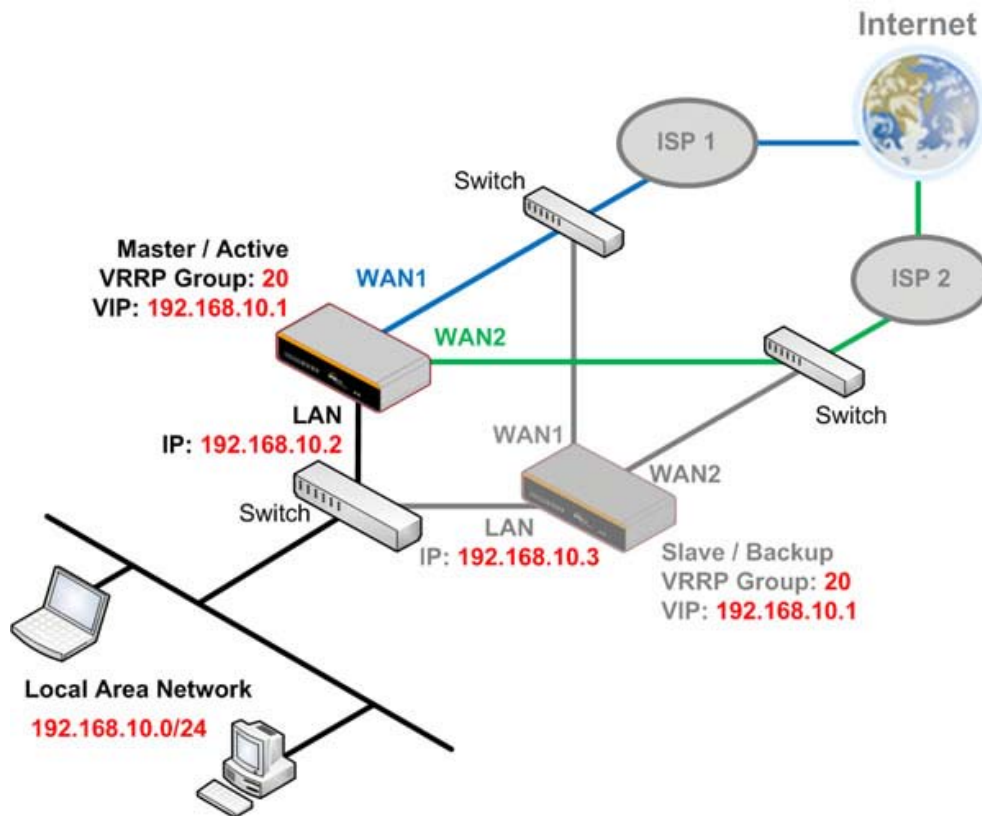
## How to Configure 1+1 Backup by VRRP?

Continuous Failover Support Using Master and Slave Setup

### Background

1+1 backup enables failover to happen when the master device goes out of service. This requires a pair of Peplink Balance devices operating in active-standby mode. When the master device is down, the slave device takes over and handles all the LAN traffic.

Peplink Balance series supports failover between two Balance devices based on Virtual Router Redundancy Protocol (VRRP). Periodic VRRP advertisement packets are sent out from the master device to VRRP-specific IP multicast addresses. The slave device assumes the master device's responsibilities when these messages have not been heard from for a pre-defined time interval.



Network Setup example in NAT mode

### Achieve Ultimate Network Uptime with Peplink Balance

In the above example, a VRRP Group **20** is assigned to the HA pair. The virtual IP address (VIP) **192.168.10.1** is the default gateway for all hosts sitting on the LAN segment, which means for those devices sitting behind the Balance, their default gateway should be set as the VIP. A unique VRRP group identifier is used for each HA pair subsequently set up on the same LAN. Balance devices have to be on the same subnet to support VRRP and the same VRRP group identifier must be used on the HA pair.

Additional Ethernet switches are required to separate each ISP connection so that Master and Slave Balance devices can both be connected. More than one Ethernet switch must be used in order to prevent a single point of failure, which would otherwise defeat the purpose of the 1+1 backup concept.

In this example, Master Peplink unit will use 192.168.10.2 as its LAN IP, Slave Peplink unit will use 192.168.10.3 as its LAN IP. Both Master and Slave units use the same VIP 192.168.10.1. This VIP 192.168.10.1 will be the default gateway for all hosts sitting on the LAN segment.

The failover takes place with a typical recovery time of 10-15 seconds. After the Slave unit changed its role to Master, all WAN connections will be re-established again.

## Configuration

### VRRP for Master Configuration

1. Go to **Network > Misc. Settings > High Availability** of the Master unit. Select **Enable**.
2. Enter the following and then click **Save**:
  - A. Group Number: (use the same number for HA pair)
  - B. Preferred Role: (select master or slave)
  - C. Virtual IP: (select an unused IP)

(Note: VIP and LAN Administration IP have to be from the same network. Devices behind the Balance liked firewall will need to configure their default gateway pointing towards VIP.)

3. Click **Apply Changes** to activate settings

High Availability Setup	
High Availability	<input checked="" type="checkbox"/> Enable
Group Number (1-255)	<input type="text" value="20"/>
Preferred Role	<input checked="" type="radio"/> Master <input type="radio"/> Slave
Virtual IP	<input type="text" value="192.168.10.1"/>
LAN Administration IP	<input type="text" value="192.168.10.2"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>

*Network Configuration Example in NAT mode*

### VRRP for Slave Configuration – configuration sync.

Alternatively, the feature **Configuration Sync.** can be used to configure the slave unit.

1. Click and choose **Slave** as the Preferred Role.
2. Check the box to enable the **Configuration Sync.** feature.
3. Enter the serial number of the master unit.
4. Before apply changes, it is required to change the LAN IP address and set it as a different one from Master unit. Go to **Network > LAN** of the Slave unit and change LAN IP address.
5. Click Save and then Apply Changes to activate settings.

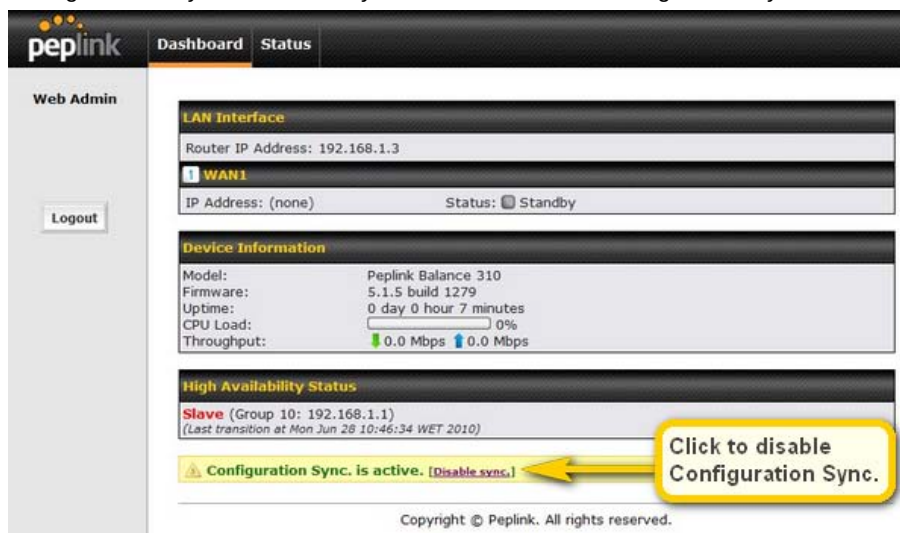
High Availability Setup	
High Availability	<input checked="" type="checkbox"/> Enable
Group Number (1-255)	20
Preferred Role	<input type="radio"/> Master <input checked="" type="radio"/> Slave
Configuration Sync.	<input checked="" type="checkbox"/> <span>Check to use the configuration sync. feature</span>
Master Serial Number	1824-1234-1234
Virtual IP	192.168.10.1
LAN Administration IP	192.168.10.3
Subnet Mask	255.255.255.0

6. Once the Configuration Sync succeeds, you will find the “successful” message in the event log of the slave unit.

```
Jun 28 10:46:23 HA Config Sync: Applying configuration sync'd from peer.
Jun 28 10:46:33 System: Changes Applied
```

### Note

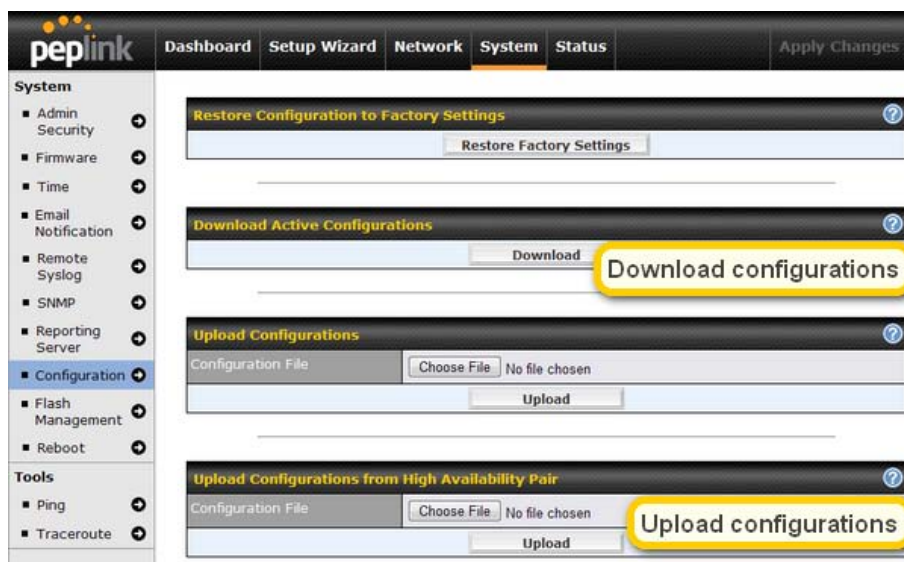
Once the slave unit is configured to automatically sync configuration from master unit, the web admin of slave unit will be locked. Changes can only be made after you have disabled the Configuration Sync function.



The screenshot shows the Peplink web admin interface. The top navigation bar includes 'Dashboard' and 'Status'. The left sidebar has a 'Logout' button. The main content area is divided into several sections: 'LAN Interface' showing Router IP Address (192.168.1.3) and WAN1 IP Address (none) with a Standby status; 'Device Information' showing Model (Peplink Balance 310), Firmware (5.1.5 build 1279), Uptime (0 day 0 hour 7 minutes), CPU Load (0%), and Throughput (0.0 Mbps); and 'High Availability Status' showing the unit is a Slave in Group 10 (192.168.1.1) and that Configuration Sync is active. A yellow callout box with an arrow points to the '[Disable sync.]' link in the High Availability Status section.

### VRRP for Slave Configuration - manual

1. Go to **System > Configuration** of the MASTER unit. Click **Download** under **Download Active Configurations** and save the configuration file for the Slave unit.
2. Go to **System > Configuration** of the SLAVE unit. Choose the configuration file exported in step 1 under the **Upload Configurations from High Availability Pair** and click **Upload**.



3. Before apply changes, it is required to change the LAN IP address and set it as a different one from Master unit. Go to **Network > LAN** of the Slave unit and change LAN IP address. Click **Save** to save changes.
4. Go to **Network > High Availability** and change the Preferred Role from **Master** to **Slave**.
5. Click **Save** and then **Apply Changes** to activate settings

The failover takes place with a typical recovery time of 10-15 seconds. After the Slave unit changed its role to Master, all WAN connections will be re-established again.

#### Note

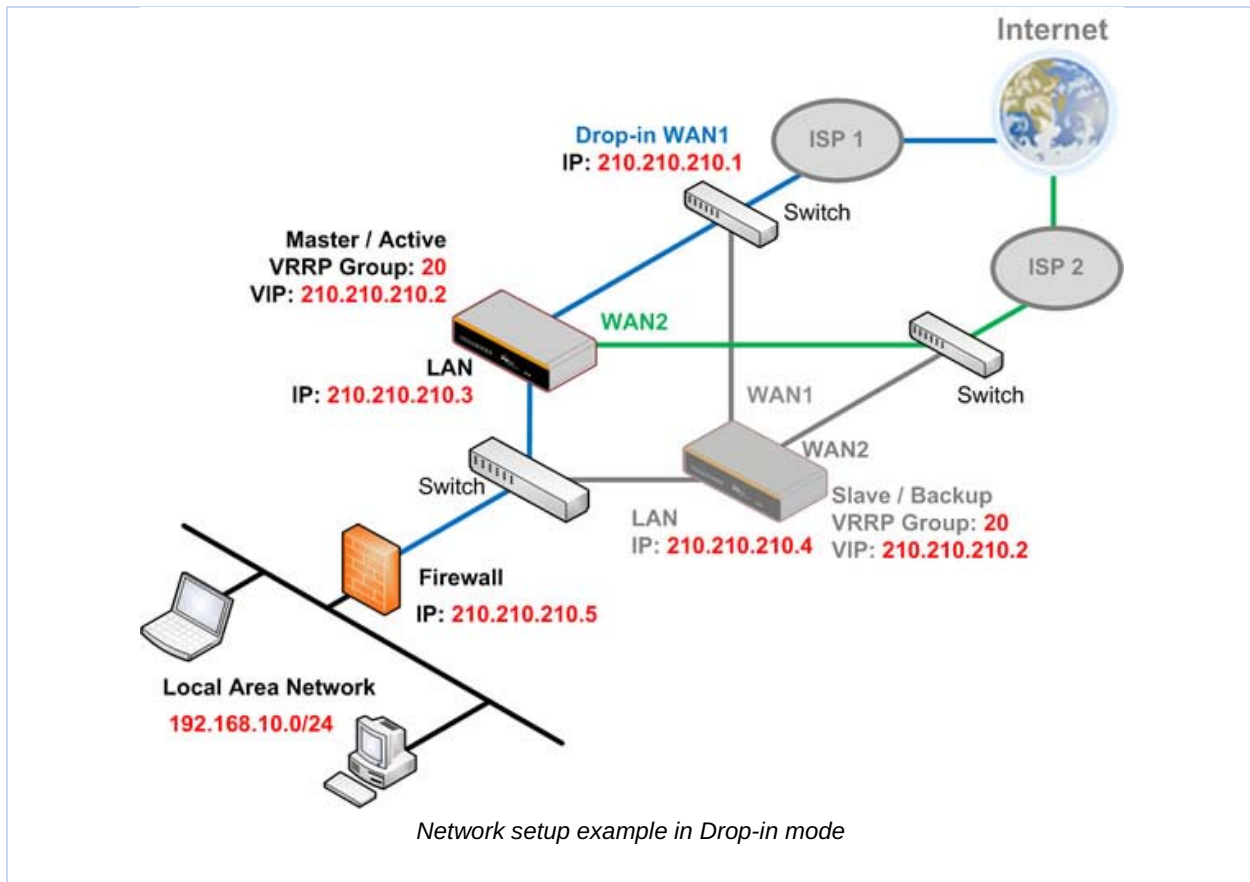
Two Balance units should connect to the Internet in the same mode. For example, they should be both in NAT mode or both in Drop-in mode.

For Balance in NAT mode, the VIP should be set as the default gateway for all hosts sitting on the LAN segment. For example, a firewall sitting behind the Balance, liked the network diagram illustrated above, is needed to set its default gateway as the VIP instead of the IP of Master Balance.

In Drop-in mode, there are no other configurations needed to be set.

High Availability Setup	
High Availability	<input checked="" type="checkbox"/> Enable
Group Number (1-255)	20
Preferred Role	<input checked="" type="radio"/> Master <input type="radio"/> Slave
Virtual IP	210.210.210.2
LAN Administration IP	210.210.210.3
Subnet Mask	255.255.255.0

*Configuration example in Drop-in mode*



## About Peplink

Peplink is the proven market leader in delivering Internet link load balancing solutions. Peplink's products have been deployed by service providers, public safety agencies, city governments and enterprise customers around the world. As an innovative creator of technology solutions, Peplink operates globally with offices in North America and Asia in cooperation with distributors, system integrators and strategic alliance partners.

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