

## How to set up the Integrated DNS Server for Inbound Load Balancing

### Introduction

Peplink Balance has a built-in DNS server for inbound link load balancing. You can delegate a domain's NS/SOA records, e.g. "www.mycompany.com", to the Peplink Balance's WAN IP address(es). Peplink Balance will return healthy WAN IP addresses as an "A" record when a DNS query for the host name is received. It also supports acting as a generic DNS server for hosting "A", "CNAME", "MX", "TXT" and "NS" records.

### Getting Started

To define the DNS records to be hosted in Peplink Balance, go to the setup page **Network > Inbound Access > DNS Settings**. You will see the following screen:

[Network](#) > Inbound Access > DNS Settings

DNS Server (Function disabled) Edit

Zone Transfer (Function disabled) Edit

Default Connection Priority (Priority 1: WAN1 WAN2 WAN3) Edit

Domain Names

Domain Name:  Add Domain

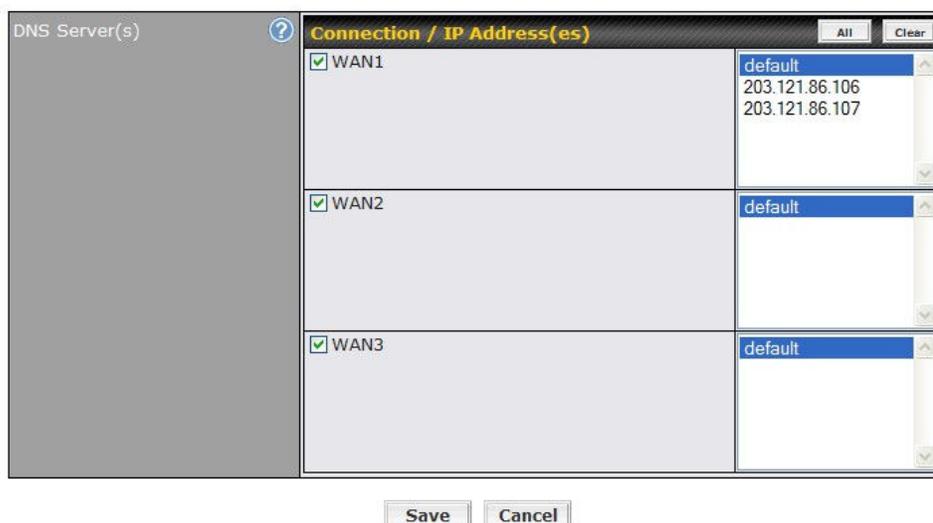
DNS Settings	
DNS Server	This setting specifies the WAN IP addresses on which the DNS server of Peplink Balance should listen.  If none of the address is selected, the Inbound Link Load Balancing feature will be disabled. No DNS requests will be responded.
Zone Transfer	This setting specifies the IP address(es) of secondary DNS server(s) that are to be allowed to retrieve zone records from the DNS server of Peplink Balance.

DNS Settings	
Default Connection Priority	Default Connection Priority defines the default priority group of each WAN connection in resolving A records. It applies to A records which have the Connection Priority set to "Default".
Domain name	<p>This section shows a list of domain names to be hosted by the Peplink Balance. Each domain can have its "NS", "MX" and "TXT" records, and its or its sub-domains' "A" and "CNAME" records.</p> <p>Input the domain name into the "Domain Name" field and click the <b>Add Domain</b> button to add a new one. Click on a domain name to edit. Click the Delete button on the right of a domain name to delete.</p>

### Step 1: Configure "DNS Server"

Click the **Edit** button for choosing the IP addresses that the DNS server should be listening on. You will see the following screen:

[Network](#) > [Inbound Access](#) > [DNS Settings](#) > DNS Server



Select the desired WAN link(s) and respective IP addresses. Multiple addresses in the list can be selected by holding the CTRL key while clicking on the addresses. Click **Save** to continue.

## Step 2: Select Connection Priority

From **Network > Inbound Access > DNS Settings**, click the **Edit** button for **Default Connection Priority**. You will see the following screen:

Default Connection Priority	
1. WAN1	Default Priority: 1 (Highest) ▼
2. WAN2	Default Priority: 6 ▼
3. WAN3	Default Priority: 10 (Lowest) ▼

Simply choose the desired WAN priorities and click **Save** to continue.

## Step 3: Creating DNS Records

From **Network > Inbound Access > DNS Settings**, enter a domain name in the **Domain Name** field and click the **Add New** button. Click on the newly created domain name and you will see the following screen:

**NS / SOA Records** (NS Record cannot be empty!)   ?

TTL(sec)	Refresh(sec)	Retry(sec)	Expire(sec)	Min time(sec)
E-mail: <input style="width: 100%;" type="text"/>				
Name Server		IP Address		

**MX Records** (Empty)   ?

TTL(sec): <input style="width: 100%;" type="text"/>	
Mail Server	Priority

**CNAME Records** (Empty) ?

Host	Reference	TTL(sec)
<input type="button" value="New CNAME Record"/>		

**A Records** (Empty) ?

Host	Included IP Address(es)	TTL(sec)
<input type="button" value="New A Record"/>		

**TXT Record** (Empty)   ?

TTL(sec)	<input style="width: 100%;" type="text"/>
Value	<input style="width: 100%;" type="text"/>

You can define the domain's NS, MX, CNAME, A and TXT records from this page.

## NS/SOA Records

To edit the NS record, click on the **Edit** button in the **NS Record** table. The table will show new text boxes:

TTL(sec)	Refresh(sec)	Retry(sec)	Expire(sec)	Min time(sec)
3600	16384	2048	1048576	2560
E-mail:		hostmaster		
Name Server	IP Address			
<input type="text"/>	<input type="text"/>	<input type="button" value="Add"/>		

Enter the name and IP address you wish to add into the text boxes. The host name can be a non-FQDN (fully qualified domain name). Click the Add button to the right of the text boxes. Once added, click the **Save** button to save the changes you made (Changes are not saved until you click the **Save** button).

## MX Record

To edit the MX record, click on the **Edit** button in the **MX Record** table. The table will allow you to add new records or delete existing records:

Mail Server	Priority	
mx1	10	<input type="button" value="Delete"/>
mx2	20	<input type="button" value="Delete"/>
<input type="text"/>	<input type="text"/>	<input type="button" value="Add"/>

To add a new record, enter a value for priority and enter the mail exchange server host name. Click the **Add** button to add the **record**. Click on the **Delete** button to delete the corresponding record. After all changes have been made, click the **Save** button for the changes to take place.

## CNAME Record

To add a new CNAME record, click on the **Add New** button in the **CNAME Record** table. The table will allow you to add new CNAME records:

Host	Reference	TTL(sec)	
<input type="text"/>	<input type="text"/>	3600	<input type="button" value="Save"/> <input type="button" value="Cancel"/>
<input type="button" value="New CNAME Record"/>			

If you want a sub-domain "secure" to have the same A record value(s) as "www", you can create a CNAME record for "secure" and reference it to "www". Enter the names of the **Host** and **Reference** in the text boxes. You may also change the TTL (time-to-live) value of the record in external DNS caches. Click the **Save** button to save the new CNAME record.

## A Record

To add or edit an A record, click on the **Add New** button or the **Edit** button in the **A Record** table. You will see the following form:

A Record	
Host Name	<input type="text"/>
TTL	5 second(s)
IP Mapping	<b>Connection Priority</b> <input checked="" type="radio"/> Default <input type="radio"/> Custom
	<b>Connection / IP Address(es)</b> <span>All Clear ?</span>
	<input checked="" type="checkbox"/> WAN1    default 11.22.33.44
	<input checked="" type="checkbox"/> WAN2    default
	<input checked="" type="checkbox"/> WAN3    default
<input checked="" type="checkbox"/> Custom IP	

The **Host Name** specifies the sub-domain for the A record. The **TTL** specifies the time-to-live of this record in external DNS caches.

The **IP Mapping** setting specifies lists of WAN-specific Internet IP addresses that are candidates to be returned when Peplink Balance responds to DNS queries for the domain name specified by **Host Name**.

The IP addresses listed in each box as **Default** are the Internet IP addresses associated with each of the WAN links.

For WAN links that operate under IP Forwarding mode, there may be other routable IP addresses in addition to the default IP address. Therefore, Peplink Balance allows custom Internet IP addresses to be added manually via filling the text box on the right-hand side and clicking the << button.

Only the highlighted IP addresses in the lists are candidates to be returned when

responding to a DNS query. (Multiple items in a list can be selected by holding CTRL and clicking on the items.)

In case of a WAN link is down, the corresponding set of IP addresses will not be returned. However, the IP addresses in the Custom IP field will always be returned.

### TXT Record

To edit the TXT Record, click on the **Edit** button in the TXT Record table. You may edit the time-to-live value and the TXT record's value. Click the **Save** button to finish.

## DNS Registration and Hosting

### Domain Delegation

These are the steps to be used when you host your domain at your ISP or a domain registrar and want to delegate a sub-domain to be resolved and managed at Peplink Balance. In order for Internet users to look up the host name, say, "www.mycompany.com", using Peplink Balance, you have to point NS records of it in the domain, "mycompany.com", to the Peplink Balance's WAN IP addresses. If you are using ISC BIND 8 or 9, add these lines in the zone file of "mycompany.com":

www	IN	NS	balancewan1
www	IN	NS	balancewan2
balancewan1	IN	A	202.153.122.108
balancewan2	IN	A	67.38.212.18

where 202.153.122.108 and 67.38.212.18 are the WAN IP addresses of the Peplink Balance in this example. The IP values here are for illustration only and would likely be different for you.

### Hosting the complete domain at Peplink Balance

To host your own DNS server, contact the DNS registrar to have the NS records of the domain (eg. "mycompany.com") point to your Balance's WAN IP addresses.

Under **Advanced Setup > Inbound Access > DNS Settings**, create a new domain, for example "mycompany.com", and create an NS record under it. NS server names are typically "ns1" and "ns2" and the IP addresses are the same as that submitted to the registrar.

Create the corresponding MX, CNAME, A and TXT records as you wish.

## Testing

From a host on the Internet, use an IP address of Peplink Balance and nslookup to lookup the corresponding hostname. Check if the returned IP addresses are the desired addresses for the host name. The following is a sample Windows nslookup:

```
C:\Documents and Settings\User Name>nslookup
Default Server: ns1.myisp.com
Address: 147.22.11.2

> server 202.153.122.108      <-- PePLink Balance's WAN IP address
Default Server: balance.mycompany.com
Address: 202.153.122.108

> www.mycompany.com         <-- Host name to look up
Default Server: balance.mycompany.com
Address: 202.153.122.108

Name: www.mycompany.com
Address: 202.153.122.109, 67.38.212.19
```

The IP values here are for illustration only and would likely be different for you.

### **Disclaimer:**

***This how-to is distributed without any warranty. You should read the latest user's manual for official information regarding the functionality of Peplink Balance.***