

How to Configure the WAN Failover

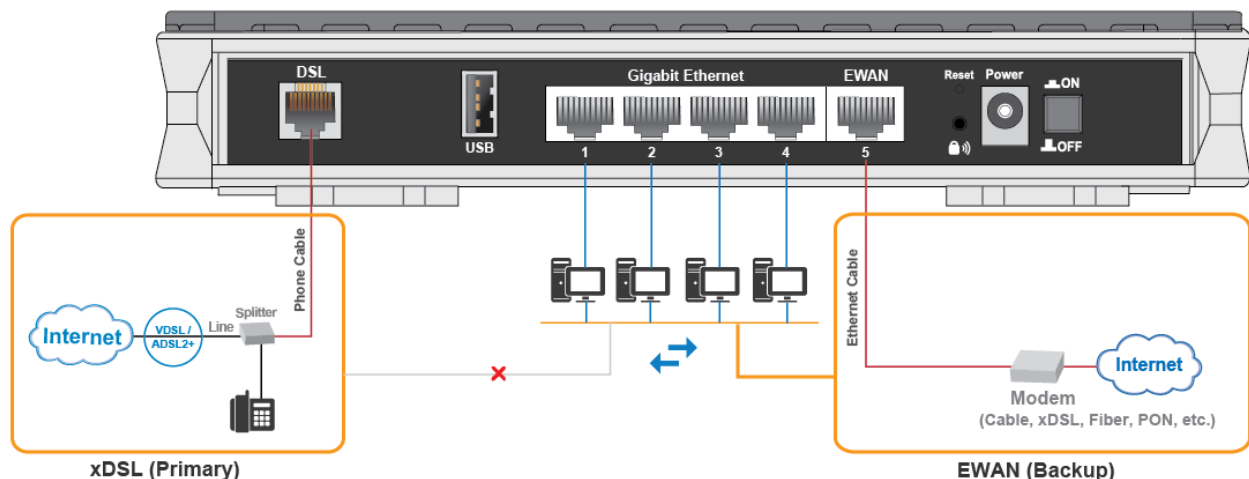
Summary

This Application Note provides detail steps on how to configure WAN failover between two (2) WAN connections, e.g. xDSL as Primary WAN and Ethernet-based connectivity such as cable modem or FTTH modem as a Backup. The WAN failover from Primary to Backup WAN ensures continued Internet connectivity to prevent services / critical applications from going down in the event of network failure or downtime.

Applied Models: BEC 8700 and 8920 series

Possible Internet Connection Options: xDSL / EWAN (Ethernet WAN) / Mobile USB

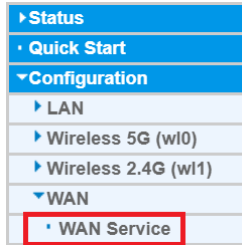
NOTE: Mobile USB not supported in BEC 8700



Configuration

Three (3) simple steps to setup and configure the dual WAN Failover.

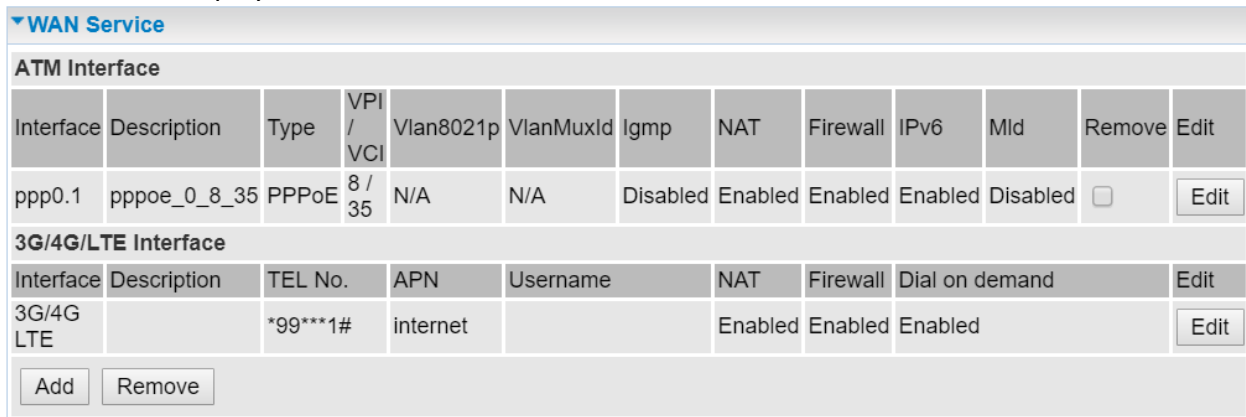
Log into BEC router's Web GUI page first.



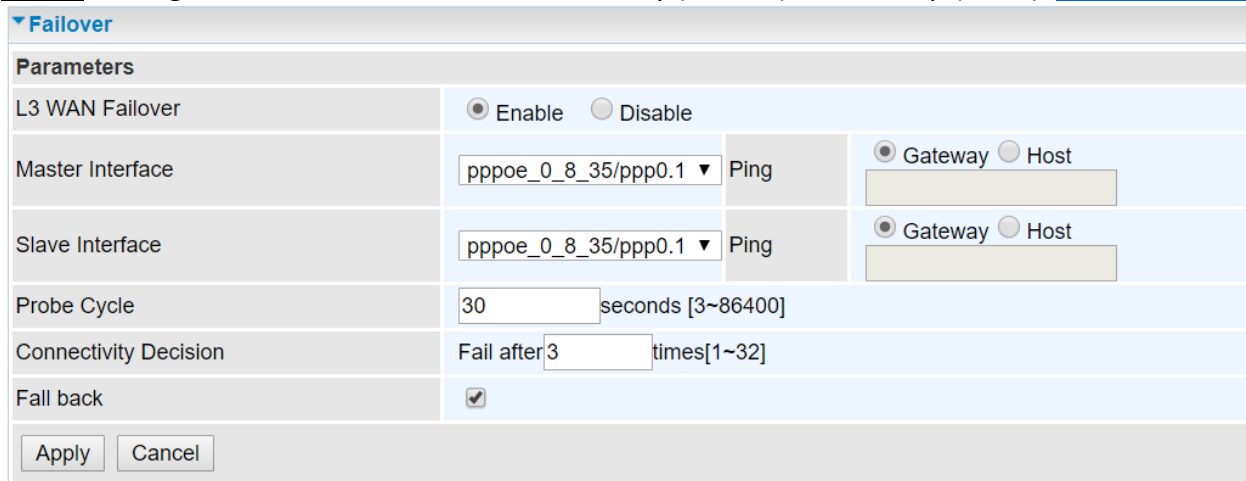
Step 1: Go to **Configuration / WAN / WAN Service**

Step 2: Configure **WAN Service**. [\(See Detail Here\)](#)

WAN Service displays all available WAN Connection Interfaces.



Step 3: Configure **Failover** WAN Interfaces, Primary (Master) and Backup (Slave). [\(See Detail Here\)](#)



(Step 2 - Continued)

Step 2: WAN Service displays all available WAN Connection Interfaces.

Setup a WAN interface by adding a new WAN profile or editing the existing profile.

- **ATM Interface**

- ADSL or VDSL Connection (RJ-11 Phone port)
- Ethernet Port for EWAN Broadband Connection (via RJ-45 EWAN port)


- **3G_4G LTE** – Via the USB port

NOTE: Only specific models of USB mobile dongle are supported. Contact BEC Tech Support for details.

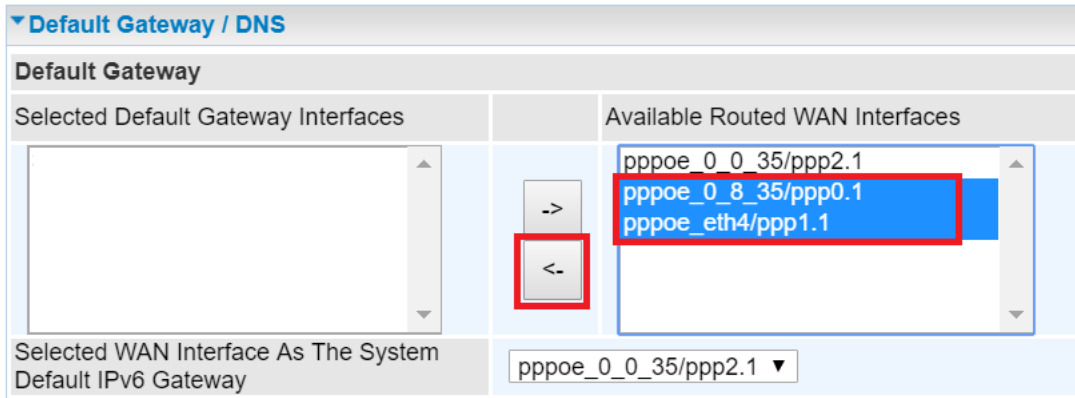
WAN Service												
ATM Interface												
Interface	Description	Type	VPI / VCI	Vlan8021p	VlanMuxId	Igmp	NAT	Firewall	IPv6	Mld	Remove	Edit
ppp0.1	pppoe_0_8_35	PPPoE	8 / 35	N/A	N/A	Disabled	Enabled	Enabled	Enabled	Disabled	<input type="checkbox"/>	Edit
3G/4G/LTE Interface												
Interface	Description	TEL No.	APN	Username	NAT	Firewall	Dial on demand	Edit				
3G/4G LTE		*99***1#	internet		Enabled	Enabled	Enabled	Edit				
Add		Remove										

To Add a New WAN Profile


- Click the **Add** button to create a new profile
- WAN Port** – pick an WAN interface.
 - DSL: ADSL or VDSL (via RJ-11 Port)
 - Layer2 Interface (ATM)** is known as ADSL
 - Layer2 Interface (PTM)** is known as VDSL
 - Ethernet: EWAN (via RJ-45 EWAN Port)
- Fill-in fields as necessary to establish an Internet service then click **Next** to define **Default Gateway & DNS**
- Default Gateway:** Select two (2) default gateway interfaces.

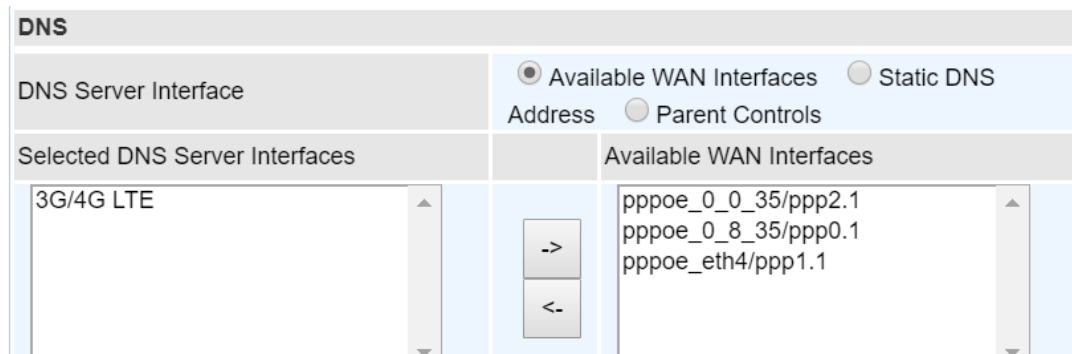
- Highlight two (2) WAN ports from the **Available Routed WAN Interface**
- Click  button to move to the right to the **Default Gateway Interface** box.

When primary WAN/gateway becomes unavailable, all traffic will be forwarded the next available gateway as known as the backup WAN/gateway interface.



e) **DNS Server Interface:** Pick a DNS service source. It can be:

- **Available WAN Interface:** Select desired WAN ports to act as DNS server by highlighting the WAN interfaces then click  button to move to the right.
- **Static DNS Address:** Specify and manually entering the primary and secondary DNS server IP addresses.
- **Parental Control:** Use DNS server from OpenDNS website, www.opendns.com. Signup and register an account with OpenDNS prior to using this feature.



- f) Click **Next** to create a new WAN profile. The new added WAN will be added to the WAN Connection Interface list

WAN Service

ATM Interface

Interface	Description	Type	VPI / VCI	Vlan8021p	VlanMuxId	Igmp	NAT	Firewall	IPv6	Mld	Remove	Edit
ppp0.1	pppoe_0_8_35	PPPoE	8 / 35	N/A	N/A	Disabled	Enabled	Enabled	Disabled	Disabled	<input type="checkbox"/>	Edit

ETH Interface ← ↓ (Newly Added)

Interface	Description	Type	Vlan8021p	VlanMuxId	Igmp	NAT	Firewall	IPv6	Mld	Remove	Edit
ppp1.1	pppoe_eth4	PPPoE	N/A	N/A	Disabled	Enabled	Enabled	Disabled	Disabled	<input type="checkbox"/>	Edit

3G/4G/LTE Interface

Interface	Description	TEL No.	APN	Username	NAT	Firewall	Dial on demand	Edit
3G/4G LTE		*99***1#	internet		Enabled	Enabled	Enabled	Edit

Add Remove

To Delete an Existing WAN Profile

- Select the check-box of the profile that you wish to remove.
- Click **Remove** button to remove the profile

ETH Interface

Interface	Description	Type	Vlan8021p	VlanMuxId	Igmp	NAT	Firewall	IPv6	Mld	Remove	Edit
ppp1.1	pppoe_eth4	PPPoE	N/A	N/A	Disabled	Enabled	Enabled	Disabled	Disabled	<input checked="" type="checkbox"/> a	Edit

3G/4G/LTE Interface

Interface	Description	TEL No.	APN	Username	NAT	Firewall	Dial on demand	Edit
3G/4G LTE		*99***1#	internet		Enabled	Enabled	Enabled	Edit

Add Remove b

To Edit an Existing WAN Profile

- Click the **Edit** button of the profile to update or change parameter settings

(Step 3 - Continued)

Step 3: Configure **Failover** WAN Interfaces, Primary (Master) and Backup (Slave).

1. Turn on the **L3 WAN Failover**
2. Click the drop-down box and choose a **Master** (Primary) WAN which was created and setup in Step 2.
 - Ping **Gateway**: Internal system will ping and wait for responses from the gateway of the WAN port.
 - Ping **Host**: Internal system will ping and wait for responses from the host IP address.
3. Click the drop-down box and choose a **Slave** (Backup) WAN
 - Ping **Gateway**: Internal system will ping and wait for responses from the gateway of the WAN port.
 - Ping **Host**: Internal system will ping and wait for responses from the host IP address.

Failover/Failback Rule Decisions (Step 4 to Step 6)

4. **Probe Cycle**: Set a time from 3 to 86400 seconds to determine when to switch to the backup link (WAN2) when primary link (WAN1) fails and vice versa.
5. **Connectivity Decision**: Configure an effective time for link failover.
6. **Failback**: Enable to handle over traffic to the primary/master WAN port when its connection is restored. Otherwise, the slave (backup) link will remain active until the condition/rule of WAN failure is triggered.

NOTE: Failover and Failback follow the same **Connectivity Decision & Probe Cycle** rule to failover from WAN1 to WAN2 or fallback from WAN2 to WAN1.


Failover / Failback Example

Auto failover takes place after straight **3** consecutive failures in every **30** seconds meaning all traffic will hand over to backup link (WAN2) after primary link fails to response in total of 90 seconds, 30 seconds for 3 consecutive failures.

▼ Failover

Parameters

L3 WAN Failover	1	<input type="radio"/> Enable <input type="radio"/> Disable
Master Interface	2	pppoe_0_8_35/ppp0.1 ▼ Ping <input type="radio"/> Gateway <input type="radio"/> Host
Slave Interface	3	pppoe_0_8_35/ppp0.1 ▼ Ping <input type="radio"/> Gateway <input type="radio"/> Host
Probe Cycle	4	30 seconds [3~86400]
Connectivity Decision	5	Fail after 3 times [1~32]
Fall back	6	<input checked="" type="checkbox"/>

Apply Cancel  7

7. Click **Apply** to activate by saving the settings. **Cancel** to start the configuration process again.