
August 2010

Enhanced UBA Set Up Guide



telecom[™]

Wholesale

The following are a summary of steps needed to get set up on Enhanced UBA. This is a guide for service providers only and does not replace or vary the information in the UBA Standard Terms Determination, the EUBA0 service description, or the Enhanced UBA Service Provider Guide. For further details refer to the Enhanced UBA Service Provider Guide.

SET UP CHECKLIST

- Pre-Implementation Design**
 - Identify Where Your End-Users Are
 - Determine Handover Locations
 - Application and Content
 - Calculate Backhaul Requirements
- Order Handover/Backhaul**
- Order First Enhanced UBA Connection**
 - Install Edge device
- Install and Test First End-User Connection**

TROUBLESHOOTING FIRST CONNECTION

- Handover Connection**
 - Configured for RFC 2516 (PPPoE)
 - VLAN Matches Handover
 - PPPoA VLAN
 - 802.1ad vs. Q-in-Q
 - 802.1ad – 802.1p Mismatch
 - Control Frames
- End-User Connection**
 - PPPoA or Bridged Ethernet mode
 - Ethernet configuration
 - ATM Configuration
 - 802.1p tag marking



Setup Checklist

Pre-Implementation Design

A number of key pre-implementation aspects are recommended for consideration by service providers to plan how end-users will be accessing the Enhanced UBA services and applications.

Identify Where Your End-Users Are

Enhanced UBA is divided into multi-tier geographical coverage areas. For information on Enhanced UBA coverage areas please visit www.telecomwholesale.co.nz/euba

Determine Handover Locations

The key considerations for determining where the Handovers are include:

- > Number of end-users to be supported from a particular region. All end-users in a coverage area must go to the same handover point.
- > Capital costs of hardware and benefits of local aggregation and backhaul against operational cost, performance cost and complexity of backhaul.

Service providers will also need to identify how to get from the Handover Point to their edge device, which may be located in a Commercial Co-location space or a remote site. Options for remote site include:

- > Telecom fibre
- > Service provider or third party fibre.

Application and Content

Each service provider will have their own requirements for supporting their services. The following is an example of elements to be considered:

- > Authentication and authorisation rules and systems
- > Application servers, such as email, voice services
- > Interconnect and peering requirements
- > Cache servers
- > National transport (between handover points). For more information on Telecom Wholesale's backhaul services please visit www.telecomwholesale.co.nz/backhaul_services
- > International transport.

Calculate Backhaul Requirements

Backhaul is used to connect the end-user Coverage Areas to the appropriate Handover Point.

Possible backhaul options are:

- > Tail extension service, a per tail backhaul service
- > Regulated UBA Backhaul (refer to the UBA Backhaul Service Provider Guide)
- > Commercial Point to Point (P2P) Backhaul (refer to the P2P Backhaul Service Provider guide).



Order Handover/backhaul

Order the required backhaul product and handovers and if required, handover fibres, Commercial Co-location. For more information refer to the relevant Service Provider Guides.

Order First Enhanced UBA Connection

Once the handover and any appropriate backhaul have been provisioned, the first Enhanced UBA connection for a valid Coverage Area can be requested.

Install Edge device

The Edge device manages traffic from the service provider domain into the Telecom Enhanced UBA network.

Install and test first End User connection

It is recommended the first connection is used to test end to end connectivity including end-user equipment and applications are working as expected.



Troubleshooting First Connection

If the first connection does not have service, here are key elements to check:

Handover Connection

Configured for RFC (PPPoE)

If the PPPoA channel is used that service provider needs to make sure PPPoE is supported on their IP Edge device.

If the bridged Ethernet end-user channel is used, service providers need to confirm the IP edge protocols match the device protocols, e.g. they are both configured with compatible PPPoE, DHCP.

VLAN matches Handover

Has the end-user VLAN been set up correctly? This should match what is returned in OO&T. Note that it may have been necessary to change the port at installation time, if the port was identified as faulty. This will result in a change of VLAN id (updated in OO&T)

PPPoA VLAN

If the end-user is using the PPPoA channel then the CVID will be offset by 1600 from that reported in OO&T. All frames on this vlan need to have their 802.1p bits set to '0'.

802.1ad vs. Q-in-Q

Some Edge devices do not support the 802.1ad standard and may require the Handover to be configured for Cisco Q-in-Q. If required, you can request this configuration change to your Handover Link via OO&T or your Service Delivery Manager.

802.1ad – 802.1p mismatch

Some Edge devices will not allow 802.1p settings to be applied correctly in both inner and outer tags if configured for 802.1ad. Incorrectly tagged traffic will be discarded on ingress to the Telecom Network.

Control Frames

BRAS/BNG edge devices often default mark PPP PADI/DHCP Response packets with an 802.1p setting of '7'. This must be changed as Enhanced UBA only accepts 802.1p values of '0' or '6'.

End User Connection

PPPoA or Bridged Ethernet mode

Has the end-user equipment been configured to work in the appropriate mode?



Ethernet configuration

Has the VLAN marking (802.1q VLAN ID of 10) been assigned correctly?

ATM configuration

The end-user equipment needs to be configured for vpi/vci 0/110 for Bridged Ethernet and vpi/vci 0/110 for PPPoA.

802.1p tag marking

Is the 802.1p setting correct (0 for Best Efforts, 6 for Real Time)? Some end-user equipment defaults to different values.

