



Wholesale Business Broadband

Reliable, scalable and affordable broadband service throughout Ireland

Definition

The Enet **Wholesale Business Broadband** product provides Retail Service Providers' (RSPs) with the opportunity to significantly develop their SME and Retail market by providing internet connectivity from the End-User premises throughout Ireland.

With it an RSP can offer a range of broadband speeds using multiple Access Providers' networks. This provides RSPs with access to several Access Service Provider (ASP) networks to ensure maximum geographic penetration.

Wholesale Business Broadband is a Layer 3 service provided by Enet through our Aggregation Platform (known as **Enet Connect**). Partnering with Enet permits an RSP access to our Broadband Aggregation Portfolio which provides:

- Access to the open eir and SIRO's FTTx networks (c.2 million locations) through a single integration point
- Reduced integration time and speed to market
- A common ordering and fault process irrespective of the FTTx access provider

This product provides a broadband internet connection with a Fixed IP address and Enet-provided CPE for self-installation. This is an end-to-end solution and is delivered using **FTTH** or **FTTC** Access Media types/Last Mile (herein referred to as **FTTx**) that Enet have available to its RSPs.

With this fully integrated product, the RSP avoids the need to own and manage a fibre network and involvement in multiple supplier relationships for access, interconnect, network and internet ISP services. This eliminates the need for the RSP to have up-front network investment to access this infrastructure.

Service Description

Wholesale Business Broadband is a Layer 3 end-to-end internet solution and includes the following key elements:

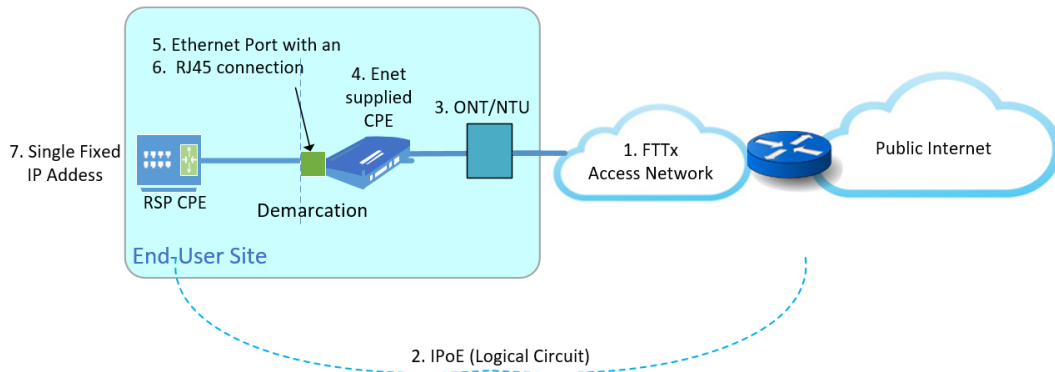
- FTTx Access: FTTC or FTTH access for the last mile to the End-User premises
- Asymmetric Bandwidths: on FTTH 150Mb-1Gb downstream; on FTTC "up to" 100Mb downstream
- End-user Traffic will utilise the Enet Network
- Enet manages the provision and delivery of an internet service for the RSP
- Internet access supplied to Enet using our Tier 1 providers
- Single Fixed IP address
- Enet supplied CPE for self-install
- Internal Wiring options also available

An RSP can self-serve by using **Enet Connect** for

- Address Search Facility
- Eligibility requests queries all ASPs and return a suitable set of products
- Ordering
- Order Management and Tracking (with *.csv output)
- Fault Reporting, Handling and Diagnostics etc.

This document is for illustrative purposes only, detailed specifications will be agreed at the time of purchase.

The Wholesale Business Broadband product is composed of the following key components:



1. FTTx Access Line
2. The logical connection is an IPoE session
3. ASP supplied ONT/NTU-Master Socket
4. Enet supplied CPE for self-install
5. An Ethernet Port on the Enet supplied CPE with an
6. RJ45 physical connection
7. The End-User equipment gets a single Fixed-IP Address assigned from Enet

The RSP is responsible for managing all aspects of the End-User delivery beyond the ONT/NTU-MasterSocket. This includes in-home equipment (CPE, RGW, modems) connection to and all cabling and equipment beyond the ONT / NTU-MasterSocket.

Summary

	FTTH	FTTC
Bandwidth	Asymmetrical 1Gb, 500Mb, 150Mb products	"Up to 100mb" Rate Adaptive Asymmetrical products
Access Network Technology	GPON	VDSL2
Splitter	Splitter: 1:32 (1:64 open eir IFN)	n/a: DSLAM
Maximum MTU	1950 (Siro & open eir)	1500 (open eir)
ONT/NTU installation by Access Provider	Yes (ONT)	Yes (NTU-Mater Socket)
N:1 or 1:1 service?	N:1	
Max. no. of MAC Addresses	1	
Connectivity	Single Unicast as standard and mandatory with Unicast bandwidth, downstream and upstream	
Class of Service 802.1p	Default is Best Efforts "0"	
Logical Connection	IPoE	
Managed Service	Yes (but with reactive fault handling)	
IP Addressing	One fixed IP address dynamically allocated by default using DHCP***	
Enet supplied CPE	Yes: Ownership transfers to the RSP on delivery	
Self-Installed	Yes	
Physical Interface	Ethernet Port	
Connector type	RJ45	
Physical Medium	G.993.2 (FTTC) / 1000Base T (FTTH)	
Demarcation point	Customer facing Ethernet port*	
Configuration	Specific to service and CPE: VLAN 10 and DCHP Enabled**	

*Any internal wiring, beyond the one-metre cable included with the Enet supplied CPE, does not form part of the service and once installed is owned and managed by the RSP / End-User.

** Customers connect to Port 4 on the Enet supplied CPE. Wi-Fi is disabled as part of the service.

*** This is Fixed IP dynamically allocated using DHCP. It is **not** a Static IP and the IP address/subnet/Gateway is not hard coded on the RSP's CPE.

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Service Delivery

Eligibility test

The RSP must run an *eligibility test* to determine:

- what products the End-User can avail of (FTTH and/or FTTC)
- which ASPs can provide the FTTx service

An RSP can move straight from a valid *eligibility result* to an order. The delivery process commences once an order has been placed.

The *eligibility test result* indicates the work required on the order. A line may be active, in-situ (inactive) or require a new connection. The *eligibility test result* is dependent on what the underlying ASP has previously delivered at that location:

- SIRO in-situ or Transfer connections typically have the required end-user premises' build work completed and can be electronically enabled.
- **open eir** is more complex. Users should refer to the Process Manual, particularly the Acceptance notification detail confirming the appointment type.
- Other orders may require an end-user appointment by the ASP.

Appointment

The Aggregation Platform will indicate to the RSP if an end-user appointment is required. An ASP technician may need to visit the RSP's end-user premises to make an FTTx connection both to and inside the premises. The end-user will need to be in attendance for this. The End-User must be advised that build work may be required at their premises, particularly for FTTH which requires installation of a passive external box and passive and active internal devices.

Service Types

FTTH: the access service is from the Optical Network Terminal (ONT) at the End-User premises via fibre to a splitter in the access network and on to an Optical Line Terminal (OLT) at the Colo or remote end.

FTTC: the access service is from the NTU-Master socket at the End-User premises via a copper pair to the cabinet DSLAM. Services are aggregated here before connecting via fibre to the Colo.

Bandwidths

- All Bandwidths are Asymmetric
- Copper **FTTC:** Rate Adaptive with line attaining the highest stable profile possible
 - Profiles range from 4Mb to 100Mb - [Full list available on request](#)
 - FTTC bandwidth attained can change (improve or deteriorate) in life
- Fibre **FTTH:** Several speed options available, varying by cost
- The choice of FTTH or FTTC is subject to availability

Internal wiring

At an additional cost, the RSP can order a data port extension from the ASP provider (open eir) at order entry or in some cases via the Enet order support team. This is at an additional cost. This or any internal wiring, beyond the 1 mtr cable included with the Enet supplied CPE, does not form part of the service and once installed is owned and managed by the RSP / End-User. The Carrier is responsible for internal wiring especially in Shopping centres etc and Enet can, on request, assist the Carrier in this regard.

CPE

Where Enet have supplied the CPE for the service the RSP should validate the actual "Serial number" and "CWMP" number, on the CPE at the End User site, compare to the data on the **Enet Connect** Platform to ensure they are aligned. This should be completed prior to order completion and placing a fault. If during fault isolation it is discovered there is a mismatch in the data the fault will be put on hold ("Waiting for Customer") while the RSP supplies Enet with the correct details including the CWMP number (See section 3 of the process manual).

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Enet Responsibilities

Enet is responsible for:

- Guiding and assisting RSPs during the Onboarding process (including the **Enet Connect** platform)
- Assisting RSP queries with our Order Support team
- Working with our ASP partners to ensure service provision from the End-User's premises
- Provision of an internet service including a single Fixed public IP Address
- Supplying the Enet CPE; shipped for End-User self-installation
- Effective Service Assurance through our NOC and Support Team
- Fault resolution up to the Enet supplied CPE (excluding any internal wiring beyond the ASP NTU / ONT)
- 2nd line support for RSP fault issues
- The operation and maintenance of the services purchased by the End-User

RSP Responsibilities

The RSP is responsible for:

- Supporting effective Onboarding by providing relevant points of contact
- Completing the VPN set-up to ensure access to **Enet Connect**
- Acting as the first point-of-contact for any End-User enquiries
- Owning the relationship with the End-User, including FTTx install appointment date(s)
- Performing eligibility requests via **Enet Connect**
- Selection and management of the inflight order via **Enet Connect**
- Arranging the installation or reconnection of devices beyond the ONT (Enet supplied CPE, end-users' computers and other devices)
- Shaping the traffic in line with the purchased traffic profile
- Ensuing power for the Enet supplied CPE (and the ASP supplied ONT, if using FTTH)
- Initial troubleshooting and logging service faults/incidents on **Enet Connect**
- 1st line support using **Enet Connect** diagnostics
- Ordering internal wiring requests at initial order entry. Wiring is done by the ASP, not by Enet
- The correct labelling and recording of the location of the ONT or NTU-Master Socket during ASP installation
- **The RSP must set the router to enable DHCP client on the WAN interface**
- **Shopping centres may require additional Enet "Professional Services" (internal cabling). This is an additional service which must be requested and is an additional charge.**

Glossary

• ASP	Access Service Provider
• DHCP	Dynamic Host Configuration Protocol
• GPON	Gigabit Passive Optic Network
• ISP	Internet Service Provider
• IPAM	IP Address Management
• MTU	Maximum Transmission Unit
• MAC	Media Access Control
• NTU	Network Terminating Unit
• ONT	Optical Network Termination
• OLT	Optical Line Terminal
• RGW	Retail GateWay / Residential GateWay
• S-VLAN	Service-Virtual Local Area Network
• VDSL	Very fast Digital Subscriber Line

Device Information:

FTTC: Service terminates on an Enet supplied CPE (Fritzbox) which connects to the open air installed **copper NTU Master Socket** as seen below. This Master socket has outputs for both a phone and Broadband (FTTC). This product uses the Broadband connection only. No power is required for this device.

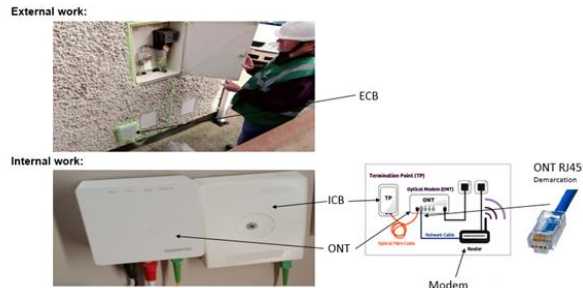


FTTC: Dual Interface Copper Pair NTU – Master Socket

FTTH: The ASP NTU for FTTH is an ONT (Optical Network Terminal) with an Ethernet port. This is suitable for connecting a RJ45 connector. The ONT requires power which must be supplied by the end-user. Responsibility for internal wiring and alarms will be with the RSP.



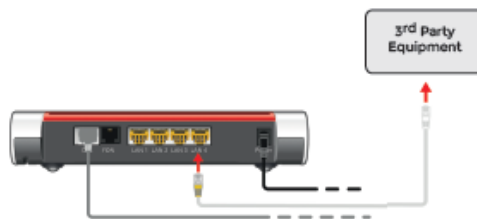
FTTH: Sample ONT connection points



FTTH: Sample external and Internal installation

Enet Supplied CPE: Enet supplied CPE is shipped to the End User or alternative location for installation at the site. This device requires power and the RSP/Carrier should their equipment on LAN Port 4.

You can also connect RSP/End User Equipment to the FRITZ!Box using the network cable to LAN4.



Business Broadband: Sample Enet supplied CPE

Please ensure the Technician labels the services as seen below using the 888x number.



Further Information

Contact your Enet Account Manager or contact us at:

Telephone: + 353 (0)61 274000

Webpage: www.Enet.ie

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