

Reseller Ethernet Services Schedule

Zen Internet

Channel Division

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Contents

1	Service Overview	4
2	Managed and Wires-only	4
2.1	Managed	4
2.2	Wires-only	5
3	Assurance Back-up	5
3.1	Broadband Assurance Back-up	5
3.2	Ethernet Assurance Back-up	6
4	Quoting, Pricing & Ordering	6
5	Provisioning Schedule & Lead Times	7
5.1	Order confirmation	7
5.2	Site Visits and Surveys	7
5.3	Potential Delays	7
5.4	Customer Delivery Date	8
6	Regrades	8
6.1	Bandwidth Regrades	8
6.2	Bearer Regrades	9
7	Hardware	9
7.1	EoFTTC NTE	9
7.2	EFM NTE	9
7.3	Ethernet NTE	10
7.4	Customer Premise Equipment	10
8	Security	10
9	IP Addressing	10
10	Fault Handling	11
10.1	Fault Types	11
11	Availability & Performance Service Levels	11
11.1	Circuit Performance Service Level	12
11.2	Zen Supplied Router Service Levels	12
11.3	Availability Service Levels	12
12	Cancelling a service	12
12.1	EoFTTC Cancellation Charges for orders in flight	13
12.2	EFM Cancellation Charges for orders in flight	13
12.3	Fibre Ethernet Cancellation Charges for orders in flight	14

12.4 Returning the Zen Supplied Router14

13 Signature15

1 Service Overview

Services within the ‘Ethernet’ portfolio include Ethernet over FTTC (EoFTTC), Ethernet First Mile (EFM), Ethernet and Wireless Ethernet – each can be selected as a Managed service or Wires-only and with or without Assurance Back-up options. They are dedicated, uncontended internet access circuits, backed with comprehensive Service Level Agreements and are scalable to meet ongoing bandwidth requirements.

Ethernet Service Type	Speed Availability	Delivery Method
EoFTTC	From 2Mbps to 20Mbps	Delivered over copper using FTTC infrastructure, requires a WLR3 line.
EFM	From 2Mbps to 35Mbps	Utilises aggregated copper pairs to provide Ethernet connectivity over copper, rather than fibre
Ethernet	From 10Mbps to 1Gbps	Fibre optic cable is delivered directly to customer premises via 100Mbps or 1Gbps bearers
Wireless Ethernet	From 10Mbps to 1Gbps	Delivered via high-rise POP’s to a radio dish at customer premises

2 Managed and Wires-only

2.1 Managed

For Managed Ethernet services, we are responsible for the service up until the customer-side port of the router which we have provided. Equipment, cabling, security and networking beyond the router remains your/ your end-users responsibility. For Managed Ethernet services, we will;

- **Provide a suitable router** – to act as a termination device for the Ethernet service, and we will manage any ongoing changes to the configuration as required.
- **Install a base-line configuration on the router** - once connected at customer premises, it will automatically retrieve the necessary configuration.
- **Replace the device** – Where a device has been confirmed to be faulty beyond repair, or needs to be upgraded, a replacement device will be provided. The device being replaced is to be returned to Zen.

- **Monitor the circuit** – We will remotely manage and monitor the router using both the primary and secondary connection, where Assurance back-up is provided. Where Assurance back-up is not provided, we will manage and monitor the router via the primary Ethernet service. Should a circuit become unavailable / unreachable, we will make contact with your appointed contact.
- **Perform fault diagnostics** – Where a problem with the Ethernet service or router has been identified, we will undertake diagnostic work to identify the nature of the fault.
- You, or your appointed on-site contact, will be required to perform diagnostics in cooperation with our support teams. Diagnostics may include, but not limited to, checking power supply, cabling etcetera.

2.2 Wires-only

Wires-only means that we are simply providing you with the circuit; we will not provide a router, Assurance back-up or any of the management features detailed above. It is your, or your end-users, responsibility to ensure any hardware connected to the service is suitable and compatible. Zen Internet cannot provide any guarantees or assurances that hardware we have not provided will be suitable with the Ethernet service. For Wires-only, we are responsible for the service up until the customer-side port of the Network Terminating Equipment. You, or your end user, will be responsible for the service beyond this point and will;

- Provide, test and configure a terminating device
- Manage, maintain and replace the device as necessary
- Monitor the circuit
- Perform fault diagnostics

3 Assurance Back-up

Assurance back-up is an optional service for Managed EFM, EoFTTC and Ethernet. It is delivered as a secondary circuit to provide a degree of resilience, acting as a *pilot light* service to provide temporary access to the internet in the event the primary circuit is unavailable.

Where Assurance Back-up has been provided, the primary circuit will automatically fail over to the secondary circuit when a line fault has been detected, typically within a matter of minutes. Traffic will automatically move back once the primary circuit has been re-established. In addition to providing internet access in the event of primary circuit unavailability, this option facilitates a secondary route for remote management and monitoring of the router, and therefore is not applicable to Wires-only services. We provide a 100% service level agreement for Ethernet services where an Assurance back-up service is provided and a 99.9% service level agreement where no Assurance back-up is being provided.

3.1 Broadband Assurance Back-up

Broadband Assurance options include ADSL2+ and (where available) FTTC broadband, which can be selected and ordered via the Ethernet Quote Tool. Adding Broadband Assurance Back-up to an existing circuit can be achieved by contacting your Account Manager.

- The WLR3 line and ADSL2+ / FTTC service used for Assurance back-up must be provided by Zen Internet – these cannot be provided by a 3rd Party.
- We recommend a new installation of WLR3 and ADSL2+ / FTTC service for the purposes of Assurance back-up, however where these already exist at the premises, and provided by Zen Internet, we can convert for use as Assurance back-up if preferred - assuming the NTE5 is within a 3m radius of where the router is to be situated and the primary circuit is to be terminated.
- If there is an existing WLR3 line and ADSL2+ / FTTC service provided by a 3rd Party at the premises, both services can be migrated to Zen Internet in order to be used for the Assurance back-up circuit.
- Where there is no existing WLR3 line at the premises, the Partner can select for a new WLR3 line and Assurance back-up circuit to be installed when submitting an order via the Ethernet Quote Tool.
- Where there is an existing WLR3 line at the premises, but no existing ADSL2+ / FTTC service, the Partner can select for only the Assurance back-up service to be installed when submitting an order via the Ethernet Quote Tool.
- Where ADSL2+ Assurance back-up is taken alongside EFM, diversity of routing and ducting to the premises is not guaranteed given these technologies both operate over copper within the same duct.
- Where FTTC Assurance back-up is taken alongside EFM, each service will terminate on different equipment in the exchange and across Zen Internet's core network.
- ADSL2+ and (where available) FTTC services can be selected as Assurance back-up for Managed EFM, Managed EoFTTC and Managed Ethernet 100Mb & 1Gbps.

3.2 Ethernet Assurance Back-up

For robust resilience, and where service level guarantees are required for the Assurance back-up, we offer EFM, EoFTTC, Fibre Ethernet and Wireless Ethernet options. These cannot be ordered via the Ethernet Quote Tool and, where there is a requirement for Ethernet Assurance Back-up (for both new and existing circuits), this should be discussed with the Account Manager.

4 Quoting, Pricing & Ordering

Partners are provided with access to the Ethernet Quotation Tool (EQT), accessible via the Partner Portal, and are able to obtain pricing, and submit orders for new service activations, including;

- Wires Only EFM, EoFTTC, Ethernet & Wireless Ethernet
- Managed EFM, EoFTTC, Ethernet & Wireless Ethernet - with or without ADSL2+ or FTTC Assurance back-up

Partners should contact their Account Manager to obtain pricing and submit orders for Ethernet services with the following features;

- EoFTTC Assurance back-up

- EFM Assurance back-up
- Ethernet Assurance back-up
- Wireless Ethernet Assurance back-up
- HSRP options
- Upgrades/ amendments to an active service

By using the EQT to obtain pricing, submit an order and use a service provided as a result of an order having been placed, you confirm that you have read and accept Zen Internet's General Terms and Conditions of Supply, the Leased Lines Specific Terms and Conditions and (where Assurance over a Zen Line has been selected) the Zen Business Talk Specific Terms and Conditions all as detailed online at www.zen.co.uk/policies.aspx

5 Provisioning Schedule & Lead Times

5.1 Order confirmation

Once an order has been submitted, it will be processed typically within 24-48 working hours and a confirmation email will be issued to the appointed contact acknowledging the order is in progress. If there are any issues preventing us from progressing an order, we will advise the appointed contact. Prior to placing an order with our suppliers we need to ensure that the installation premises is ready.

5.2 Site Visits and Surveys

We notify the appointed contact to confirm dates and times for any on-site engineer visits to ensure it is convenient, and also to ensure access can be arranged. If the proposed dates and times are not convenient, you can contact the Provisioning team within three working days of the initial dates being issued to rearrange. If we have not received a request to change the date & time, the installation will go ahead on the day as scheduled. We will provide results of any site surveys once we have received them - usually within 5-10 days of the survey date.

- Site Engineer Visits are typically only required for EFM and Ethernet – and not EoFTTC.
- Site surveys are typically only required for Ethernet – and not EoFTTC and EFM.

5.3 Potential Delays

We will advise of any delays impacting delivery of an order. Depending on the type of service being provided, the following potential delays could include;

- **Abortive Visit** - Where an engineer arrives within the appointment slot but is unable to carry out the work at, or gain access to, your premises. This may be because entry to your premises is refused or no access can be gained or where the person who placed the order or their representative is not available to provide detailed work instruction (i.e. socket location). In this instance, an Abortive Visit Charge will be raised.

- **Credit approval** – Where a credit limit is required or needs to be increased to progress an order, and/ or where additional information is required from the Partner before the order can be put into progress.
- **Wayleave** – Which is the consent in writing that allows our supplier to carry out work on privately-owned land. It's a written legal agreement between the supplier and the land/property owner that grants access to install, maintain or repair equipment. This requirement is bound by UK Law before starting any physical work.
- **Excess Construction Charges (ECC's)** - These may be incurred in the event of wayleave and for the provision of any additional physical work. ECC's are identified after the site survey and presented to us in the planning results.
- **Noticing** - Our supplier may need to work with local authorities/councils to carry out any physical work as it may involve a temporary road closure or parking bay suspension. This is referred to as 'noticing' because they require permission from the local authority before proceeding. The time frame for these approvals varies regionally, and can be up to three months.
- **Driver circuit** - When another circuit is the first one to be provisioned within the same local area. Any core dependencies will be carried out on the driver circuit along with any ECC's. Our circuit is reliant on ECC acceptance and all external work being completed before our order can progress.
- **New customer lead-in requirement** - If existing lead-in at the customer site is blocked or at full capacity
- **Requirement for supplier /core infrastructure build** – Spine cable / core cable
- **Force Majeure** - Any circumstances beyond our control such as extreme weather conditions, power failures and natural disasters.
- **Permission to dig/work (PTD/W)** - This is a document that needs to be signed by a private land owner in the event that an official wayleave document is not required.

5.4 Customer Delivery Date

This is the anticipated date we expect the order to be fulfilled and delivered to you in a fully functional state following the survey. It is a reasonable estimate only, and in some instances can be altered as the order progresses. We will notify you of any changes to the CDD.

6 Regrades

6.1 Bandwidth Regrades

Bandwidth can be upgraded for all Ethernet services at any time during the service period, subject to availability and the payment any of revised charges as notified to you. Once upgraded, the new bandwidth will be subject to a minimum term of 12 months, or for the remainder of the existing contract (whichever is the shorter period), and any revised charges will apply from the date upon which the upgrade has completed. For example, where a circuit bandwidth is upgraded from 40Mb to 60Mb, bandwidth cannot be downgraded for 12 months – or until the end of the contract if there is less than 12 months remaining. Thereafter the bandwidth may be downgraded, provided that the bandwidth is no lower than the amount of bandwidth initially ordered.

Bandwidth cannot be downgraded below the amount initially provisioned for that particular circuit. For example, where an order has been placed for 40Mb, bandwidth may not be re-graded below 40Mbps for the duration of the contract. EoFTTC-bandwidth can be upgraded to a maximum of 20Mbps - speed availability is dependent on line length and quality of copper.

- **EFM** – bandwidth can be upgraded to a maximum of 35Mbps - subject to the availability and addition of extra copper pairs, line length and, where the circuit is being provided with four copper pairs and additional pairs are required to achieve the desired bandwidth upgrade, a new NTE installation may be required.
- **Ethernet** – bandwidth can be upgraded up to the full 100Mbps on a 100Mbps bearer and 1Gbps on a 1Gbps bearer.
- **Wireless Ethernet** – bandwidth can be upgraded to 1Gbps

6.2 Bearer Regrades

As EoFTTC, EFM and Wireless Ethernet are not provided via a bearer, this applies to Ethernet only. An Ethernet bearer can be upgraded at any time during the service period where a higher amount of bandwidth is required than the existing bearer can provide, for example moving from a 100Gb bearer to a 1Gb bearer. Where the existing bearer is within the Minimum Service Period, upgrades will be permitted providing that new charges, which include any Early Termination Charges, and a new Minimum Service Period will be accepted by you. Upgrading a bearer will typically involve a new installation of a new bearer, which will follow the standard Ethernet installation lead times.

The new Minimum Service Period will have a duration of at least twelve months. Where a new Minimum Service Period is agreed in respect of any upgrade, this will supersede the existing terms in relation to the applicable Customer Order Form governing the bearer bandwidths.

Regrades cannot be ordered via the Ethernet Quote Tool and where required, should be discussed with your Account Manager.

7 Hardware

For EFM and Ethernet services, Network Terminating Equipment (NTE) will be installed as part of the installation - regardless of whether a Managed or Wires Only service has been selected. The Zen supplied router, or on the case of Wires Only; the Partner or end-user supplied router, will connect to the NTE.

7.1 EoFTTC NTE

For EoFTTC, a separate NTE is not provided as part of the installation. The router will connect directly to the PSTN NTE5 (master) socket.

7.2 EFM NTE

The NTE for EFM is not rack mounted. It will require connection to two pre-installed 13 amp AC power sockets. An additional power socket will be required for the router, which will connect to the NTE. At the point of placing the order, availability of

power sockets is clarified – where an installation cannot be completed due to the unavailability of power sockets, the installation will be aborted and Abortive Visit charges will be raised.

7.3 Ethernet NTE

The NTE for Ethernet is typically rack mounted, and will occupy 1U in a standard cabinet. It can also be wall mounted or situated on a flat surface close to the termination point and will require connection to two pre-installed 13 amp AC power sockets. An additional power socket will be required for the router, which will connect to the NTE. At the point of placing the order, availability of power sockets is clarified – where an installation cannot be completed due to the unavailability of power sockets, the installation will be aborted and Abortive Visit charges will be raised.

7.4 Customer Premise Equipment

As part of a Managed service we will provide a managed router which will act as a termination device for the Ethernet circuit, it will not provide any security features or threat management. It is exclusively owned by Zen Internet and is to be returned upon termination of the service, where a new router is required as a result of an upgrade or where it has been replaced following a fault. The specific model will vary depending on the bandwidth and service type ordered, therefore it may or may not be rack mountable and dimensions will vary. The router model we will provide will be confirmed in advance of an order being placed via the service details within the Ethernet Quote Tool.

We aim to deliver the router to you prior to the circuit handover date, and will contact you to advise it has been shipped so that you can arrange for it to be connected/ installed when applicable.

We will replace the router during the term of the contract in the event it has been confirmed as having a fault or where a different model is required due to an upgrade - however you are liable for the cost of replacing the router during the term of the contract for any reason other than a confirmed fault or upgrade requirement.

Where Wires-only has been selected, we will not provide a router and therefore you will need to ensure you have a suitable device ready in anticipation of the handover date.

8 Security

Unless specifically requested and detailed, Ethernet services are not provided with any form of network security, NAT or firewalling. The router provided with Managed Ethernet services will act as a termination device for the circuit only, and it is your responsibility to ensure suitable security, firewalls or threat management solutions are applied for your protection.

9 IP Addressing

We provide a block of eight static IP's (6 usable) as standard with Ethernet services and provide the option to select up to 256 IP's within the Ethernet Quote Tool when placing your order. If you are requesting that more than the standard 8 IP addresses, you will be required to provide further details your requirements in order for your request to be evaluated in accordance with

the policies and procedures established by RIPE, the European Regional Internet Registry. In some cases we may ask you to provide further information to support your request for IP addresses. The justification form can be downloaded directly from the Ethernet Quote Tool at the time of placing your order.

Customer owned IP's are not supported with our services.

10 Fault Handling

Where a fault with an Ethernet service is suspected, you should first ensure that all cables are connected properly prior to contacting us or raising a ticket in order to rule out any cabling issues. If the issue persists, you should contact our Service Desk so that one of our trained technicians can carry out further diagnostics to determine the cause of the problem. We will ensure that faults affecting availability of Ethernet services are responded to within 1 hour and of the fault being raised and will be resolved within 8 hours of a fault ticket number being assigned.

Faults affecting availability of the Zen supplied router will be responded to in 4 hours of the fault being raised and a fault ticket number being assigned; this means that an engineer will be onsite within 4 hours of the fault being recognised and acknowledged as a hardware issue. If the engineer cannot resolve the issue with the device hardware, it will be replaced immediately. In the event that you raise a fault, which is later determined not to be the fault of Zen or our suppliers, we reserve the right to reclaim from you any charges incurred by Zen.

10.1 Fault Types

Types of fault that could potentially occur on Ethernet services are as follows;

- **Early Life Failure** – A circuit handed over and classed as live by the supplier but a working service has not been achieved.
- **Hard Down** - where there is no communication available over the interface. This applies to any circuit that has previously had a confirmed working service.
- **Intermittency** - a discontinuous service where connectivity is dropping, this could be a few seconds to a matter of hours at a time
- **Performance** - classed as throughput, packet loss, or latency. Performance issues may or may not be service affecting, depending on the severity of the issue.
- **Investigative** - An Investigative fault can be described as where a service is not affected but may be at risk. For example; an alarm light on an NTE but the service working or damaged cabling.

Further information regarding faults can be found within the Ethernet specific SLA.

11 Availability & Performance Service Levels

We periodically conduct Scheduled Maintenance that may affect availability of Zen supplied router or Ethernet circuits, and will make every reasonable effort to ensure that Scheduled Maintenance does not affect availability of your service. However, we reserve the right to carry out Scheduled Maintenance and we will give you as much notice as is reasonably practicable to

ensure proper operation of the Ethernet service. The Service Levels will not apply and accordingly claims for service credits or other financial compensation whatsoever cannot be made in respect of outages and/or loss or failure of service resulting from Scheduled Maintenance that may affect availability of all or any part of the Ethernet service. Further details regarding exclusions from Service Levels can be located within the Ethernet specific SLA.

11.1 Circuit Performance Service Level

An Ethernet circuit will be treated as available when you, or your end user, are able to send and receive data between the customer's network and the Internet via the Zen supplied router, and treated as unavailable when data cannot be passed between the Zen Supplied Router and Zen Internet's Edge Network.

We will ensure that Packet Loss will not exceed 5% across the Ethernet circuit, as measured over any continuous 15 minute period and that the average round trip time for data packets will not exceed 30ms (milliseconds) between a Zen supplied Router and the interface with our edge network, as measured over any continuous 15 minute period. If we fail to meet the Performance Service Level of the Leased Circuit in any Quarter, we will credit you with the equivalent of one day's service charge for each hour the fault persists, from the time of (the later of) a fault being raised and a ticket number being assigned, subject to a maximum credit of 27.5% of the quarterly service charge for that Quarter.

11.2 Zen Supplied Router Service Levels

We will ensure that each Zen Supplied Router will be available 100% of the time during the term in respect of data transmission, and that operating software on the device remains up to date and in line with the manufacturer's specifications. In the event of failure of any Zen Supplied Router, we will ensure that a suitably configured replacement will be available to you within 4 hours of you notifying us of the failure and an irreparable fault being confirmed.

If we fail to meet this Service Level in any Quarter, Zen Internet will credit you with the equivalent of one day's service charge for each hour the fault persists, subject to a maximum credit of 27.5% of the quarterly service charge for that Quarter.

11.3 Availability Service Levels

Managed Ethernet services with an assurance back-up will be available for 100% of any given calendar month, and where no assurance back-up is provided the Managed Ethernet service will be available for 99.9% of any given calendar month.

Further details can be located within the Ethernet specific SLA.

12 Cancelling a service

Ethernet services are provided with a minimum contractual term of between one and three years. You can arrange for a service to be cancelled by contacting the Provisioning Team at Partner.ethernet@zen.co.uk, giving 30 working days' notice. Cancellations will only be accepted from a named contact on the account the service is being invoiced to. Once a cancellation request has been received, we will confirm receipt and advise you of any outstanding charges.

If you request a service to be cancelled which is still within the contractual term, you will be invoiced for the remainder of the contract at the point of termination. Upon receipt of any outstanding charges, the service will be cancelled effective from the date of the cancellation notice.

12.1 EoFTTC Cancellation Charges for orders in flight

Cancellation of EoFTTC orders in-flight will incur the following charges, whichever is of greatest value, in addition to any Abortive Visit Charges and Excess Construction Charges, which have already been accepted;

Working days before Contractual Delivery Date	Charge applicable	
	Fixed	% of Installation fee
6 or less	£270	90%
7 > 10	£225	75%
11 > 12	£180	60%
13 > 15	£90	30%
16 or more	£0	0%

12.2 EFM Cancellation Charges for orders in flight

Cancellation of EFM orders in-flight will incur the following charges, whichever is of greatest value, in addition to any Abortive Visit Charges and Excess Construction Charges, which have already been accepted;

Working days before Contractual Delivery Date	Charge applicable	
	Fixed	% of Installation fee
6 or less	£1,890	90%
7 > 10	£1,575	75%
11 > 12	£1,260	60%
13 > 15	£630	30%
16 or more	£0	0%

12.3 Fibre Ethernet Cancellation Charges for orders in flight

Cancellation of Fibre Ethernet orders in-flight will incur the following charges, whichever is of greatest value, in addition to any Abortive Visit Charges and Excess Construction Charges, which have already been accepted;

Cancellation Stage	Charge applicable	
	Fixed	% of Installation fee
Before the survey (prior to ECC's being identified)	£0	0%
Post-survey – and after any ECC's have been accepted but prior to the customer delivery date.	£1,050	50%
After Customer Delivery Date has been provided	£2,100	100%
After order fulfilment & in contractual period	Remainder of contract payable in full	N/A

12.4 Returning the Zen Supplied Router

Where a router is due to be returned further to cancellation of a service, bandwidth upgrade or fault replacement where a new router is required etc., but has not been received within 30 working days of the circuit cancellation date, or a replacement device having been received further to an upgrade, we will raise an invoice to you to cover the cost of replacement.

The replacement fee will vary depending on the type of service being provided and whether, or not, assurance is provided, as follows;

Service Provided	Router Replacement fee (without Broadband Assurance)	Router Replacement fee (with Broadband Assurance)
EFM, EoFTTC & Ethernet (<30Mbps)	£300	£300
Ethernet 100 (35 – 100Mbps)	£500	£900
Ethernet 1000 (100Mbps)	£1,300	£1,700
Ethernet 1000 (200Mbps)	£2,000	£2,400
Ethernet 1000 (200-1000Mbps)	£3,300	£3,500

13 Signature

Signed for and on behalf of Zen Internet Limited	
Signature	
Print Name	
Position	
Date	

Signed for and on behalf of Reseller	
Reseller Name	
Signature	
Print Name	
Position	
Date	

Issue	Change	Date	Author	Approver
0.1	Creation	01.06.2017	C Clarke	
0.2	Updated Regrades 6.1 & logo	10.11.2017	C Clarke	C Clarke