DigitalWell

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# Connectivity

## Services Schedule

# 1. Service Description

Connectivity services from DigitalWell are either '**On-Net**' or '**Off-Net**':

- '**On-Net**' is a service delivered via the DigitalWell Core network, where IP addressing and CPE is provided by DigitalWell and the local access tail delivered by a third party but managed by DigitalWell.
- '**Off-Net**' is a service that is not delivered via or directly connected to the DigitalWell Core network and is a resale of another carrier's service where IP addressing and CPE is provided by that carrier.

There are two key technical characteristics to each service provided:

- The type of **network service**.
- The type of **access method** used to deliver that Service to the customer site.

The two types of **Network Service** provided are as follows:

- **MPLS services** are private network services that will only connect to other services that are part of the same customer MPLS Virtual Private Network (VPN). The MPLS VPN is a closed user group logically distinct from the public internet and uses private IP addressing that is not routable in the public internet domain, however traffic is not encrypted by default. A customer's MPLS VPN can be connected to the public Internet in a number of different ways as an optional additional feature, but MPLS services do not connect to the public internet by default.
- **Internet Access (IA)** services provide access to the Internet, using publicly routable IP addressing.

The order form and/or in the Bill of Materials (BoM) and/or Statement of Works (SoW) accompanying or associated with the service will state the access type, bandwidth and network service type of any given service. The following table summarises the key characteristics of the different access types used by the services:

| Access Method | Typical Speed | Bandwidth Profile** | Building Access | Network Services Supported |
|---|---|---|---|---|
| Enterprise Ethernet | 100Mb/s-10Gb/s | Symmetrical | Dedicated Fibre to Exchange | MPLS or IA |
| On-Net (Port Only) | 1mb/s-10Gb/s | Symmetrical | n/a (Service delivered without an access tail in DigitalWell Datacentre) | MPLS or IA |

| | | | | |
|---|---|---|---|---|
| NGA Broadband (FTTC) | up to* 100Mb/s | Asymmetrical | Dedicated Copper pair to street cabinet | MPLS or IA |
| NGA Broadband (FTTP) | 150M, 300M, 500M or 1Gb/s | Asymmetrical | Dedicated fibre to street cabinet | MPLS or IA |
| xDSL | Up to* 8mb/s or up to* 24 Mb/s | Asymmetrical | Dedicated Copper pair to local exchange | MPLS or IA |
| P2P Wireless | 2Mb/s-1Gb/s | Symmetrical | Dedicated Radio Antenna | MPLS or IA |
| Wireless Broadband | Up to 50Mb/s | Asymmetrical | Dedicated Radio Antenna | MPLS or IA |
| Mobile Data | Variable/Shared | Asymmetrical | Dedicated Radio Antenna | MPLS or IA |

**For services delivered over copper, the precise speed available will be determined by a range of factors such as the length and quality of the copper wire. The precise speed cannot be known until the service is delivered. Hence these services are delivered as 'up to' a certain speed as they will be delivered at the maximum speed that the line and the technology used can support.*

*** A symmetrical bandwidth profile means that the upload and download speeds will be the same. An asymmetrical bandwidth profile means that the upload speed will be significantly lower than the download speed.*

By Default, all connectivity services are fully managed by DigitalWell, with CPE provided, managed monitored and maintained by DigitalWell and no administrative access will be given by DigitalWell to the customer to any device used to deliver the service. Any exceptions to this will be clearly stated either on the order form and/or in the Bill of Materials (BoM) and/or in the Statement of Works (SoW) accompanying or associated with the service. DigitalWell will provide reactive incident management services relating to outbound and inbound call connectivity issues.

## 2. Support

Definitions of Support services including incident management, Service Requests, Change Requests, and Service Delivery Management are detailed in appendix 7.

The support for Connectivity services is outlined below – refer to the order form and/or statement of Works (SoW) to confirm which applies to any given service.

| | Connectivity | |
|---|---|---|
| **Support** | Unmanaged Internet | Managed Network |
| Incident - OnSite | X | Y |
| Incident - Remote | Y | Y |
| Hardware Replacement | X | X |
| Service Request | X | Y |
| Change Request | X | X |
| Monitoring/Alerts | X | Y |
| Back Office (Billing queries, Licence Admin & Renewals) | Y | Y |

## 3. Service Level Agreement

DigitalWell makes the following Service Level Agreements regarding its connectivity Services:

### Availability SLA

DigitalWell Availability SLA applies to each site separately and varies depending upon the type of access method.

| Service | Enterprise Ethernet | On-Net (Port Only) | Enterprise (Point to Point) Wireless |
|---|---|---|---|
| Availability | 99.9% | 99.9% | 99.9% |
| Coverage | 24x7x365 | 24x7x365 | Mon-Fri 8am-8pm |

### Availability Calculation

Availability in a calendar month % = ([365.25 days times 24 hours times 60 minutes] divided by 12) minus (Total unavailable time in minutes in the calendar month) ***divided by*** ([365.25 days times 24 hours times 60 minutes] divided by 12).

Where services do not have 24/7/365 coverage then their specific shortened daily hours will be used to calculate availability instead of 24 hours.

### Table of Allowed Unscheduled Outage Time (AUOT)

Number of minutes, for which a Service may be unavailable (i.e. subject to an Outage) in a month, without Service Credits becoming payable based on a 24/7 service coverage are as follows:

| Number of Minutes in the Calendar Month | AUOT for 99.9% SLA |
|---|---|
| 43,830 | 44 |

### Availability Service Credits Schedule (ASC)

| Minutes beyond AUOT | Service Credit (% of Monthly Charge) |
|---|---|
| 0-60 minutes | 3% |
| 61-120 minutes | 6% |
| 121–180 minutes | 10% |
| 181–240 minutes | 12% |
| >240 minutes | 15% |

Availability Service Credits payable to the Customer will be calculated based on the total Quarterly Charge for the Affected Site.

In the event of a service failing the Allowed Unscheduled Outage Time (AUOT) in a month, DigitalWell will send the customer a Reason For Outage (RFO) report within five business days of the outage.

### Latency Service Level Agreement

Unless otherwise described in the order form and/or in the Bill of Materials (BoM) and/or Statement of Works (SoW) accompanying or associated with the service, DigitalWell only commits to one-way latencies being achieved on Ethernet Services between Locations in the following cities:

| | Dublin | London | Cork |
|---|---|---|---|
| **Dublin** | n/a | 14ms | 4ms |
| **London** | 14ms | n/a | 16ms |
| **Cork** | 4ms | 16ms | n/a |

Latency Service Credits will only be available to customers with Enterprise Ethernet and Wireless Point-to-Point access types. The Latency SLA only applies to traffic with frames of up to 1518 MTU. Latency Service Credits will only be available to customers who open Trouble Tickets for Latency-related issues. On opening a latency related Trouble Ticket DigitalWell will determine the latency by sampling the network frequently and averaging the results over a thirty-day period. If the Service continues not to meet the SLA after 30 calendar days, the Customer will be entitled to claim Latency Service Credits.

### Latency Testing Methodology

Latency between two sites is tested by sending a frame to a destination for return back to the originating box. The round-trip time of the frame is in this way measured against the originating test box's own clock. One way delay (i.e. the latency) is then calculated as half the measured round-trip time.

### Latency Service Credit

Any Latency Service Credits payable to the Customer will be calculated based on the total Monthly Charge for the Service. Breach of the Latency Service level will result in up to a 10% service credit.

### Excessive Service Degradation

If, at any time, the Service experiences an increase in latency to an extent that the Customer is reasonably unable to use it and is prepared to release the Service for immediate testing, the time for which that increased latency is experienced will be considered a period of Service Unavailability entitling the customer to the applicable Service Credit as detailed above in the Availability Services Credit Schedule.

### Jitter Service Level Agreement

DigitalWell commits to an inter packet delay variance of less than 5ms between sites connected using the national or international network. Service Credits will only be available to customers with Enterprise Ethernet and Wireless Point-to-Point access types. Jitter Service Credits will only be available to Customers who open Trouble Tickets for Jitter related issues. DigitalWell will determine the Jitter by sampling the network frequently and averaging the results of such sampling over a thirty-day period. Should the Jitter affecting fault be caused by third-party or customer equipment not installed by DigitalWell, or for any other reason for which Customer bears responsibility, DigitalWell may charge the Customer for conducting the Jitter tests. Should the Jitter causing fault be on DigitalWell infrastructure, DigitalWell will confirm that the Service does not comply with the SLA and will have a period of 30 calendar days to fix the Jitter-affecting fault without being obliged to pay Jitter Service Credits. If the Service continues not to meet the SLA after 30 calendar days, the Customer will be entitled to claim Jitter Service Credits as set out below.

### Jitter Testing Methodology

Jitter is calculated by measuring the mean deviation of the difference in packet spacing at the receiver compared to the sender for a pair of packets. DigitalWell calculates the mean by sampling the Ethernet Network frequently and averaging the results over a thirty-day period:

The calculation for Jitter (Ji) for two consecutive packets (i and i+1) is as follows:
**Ji= ΔTi – Δ Ti‟**

Where:
**Ti** = time 1st byte of packet **i** is received by the source port (ingress time) **Ti+1** = time 1st byte of packet **i+1** is received by the source port (ingress time) **Ti‟**= time 1st byte of packet **i** is received at the destination port (egress time).

**Ti+1‟** = time 1st byte of packet **i+1** is received at the destination port (egress time).

And **ΔT = Ti+1 – Ti** (ΔT is the time interval between packets at ingress).

**ΔT‟ = Ti+1‟ - Ti‟** (ΔT‟ is the time interval between packets at egress).

The average jitter (J) is calculated as follows: **J = ∑Ji /(N-1)**

Where:
**N** = the number of sample packets over 30-day period.

### Jitter Service Credit Schedule

Jitter Service Credits payable to the Customer will be calculated based on the total Monthly Charge of the Service. Breach of the Jitter Service level will result in up to a 10% service credit.

### Excessive Service Degradation

If, at any time, the Service experiences Jitter to an extent that Customer is unable to use it and is prepared to release the Service for immediate testing, the time for which that Jitter is experienced will be considered a period of Service Unavailability entitling the Customer to the applicable credit as detailed above in the Availability Services Credit Schedule.

### Packet Delivery Ratio (PDR) Service Level Agreement

DigitalWell commits to a Packet Delivery Ratio of 99.9% for Ethernet frames sent across its network. Service Credits will only be available to customers with Enterprise Ethernet and Wireless Point-to-Point access types. Packet Delivery Ratio Service Credits will only be available to Customers who open Trouble Tickets for Packet Delivery Ratio related issues. DigitalWell determinates the PDR by sampling the network frequently and averaging the results of such sampling over a thirty-day period.

Should the Packet Delivery Ratio affecting Fault be caused by third party or customer equipment not installed by DigitalWell, or for any other reason for which Customer bears responsibility, DigitalWell may charge the Customer for conducting the Packet Delivery Ratio tests.

Should the Packet Delivery Ratio affecting Fault be on DigitalWell Infrastructure, DigitalWell will confirm that the Service does not comply with the SLA and will have a period of 30 calendar days to fix the PDR affecting Fault without being obliged to pay PDR Service Credits. If the Service continues not to meet the SLA after 30 calendar days, the Customer will be entitled to claim PDR Service Credits as set out below.

### Packet Delivery Ratio Testing Methodology

The Packet Delivery Ratio between two sites is tested by sending a series of frame for return back to the originating box. The Packet Delivery Ratio is defined as the number of frames successfully received back at the origin divided by the total amount of frames sent.

### Packet Delivery Ratio Service Credit Schedule

PDR Service Credits payable to the Customer will be calculated based on the total Monthly Charge of the Service. Breach of the PDR Service level will result in up to a 10% service credit.

### Excessive Service Degradation

If, at any time, the Service experiences a Packet Delivery Ratio to an extent that Customer is unable to use it and is prepared to release the Service for immediate testing, the time for which that PDR is experienced will be considered a period of Service Unavailability entitling the Customer to the applicable credit as detailed above in the Availability Services Credit Schedule.

### Time to Fix (TTF) Service Level Agreement

In addition to the Availability Service Level Agreement, DigitalWell also makes an Agreement to the Customer to repair any On-Net Outage within a specified time. The Service Level Agreement for TTF for Outages at or between On-Net Locations is 4 hours. A TTF Service Credit may be claimed in addition to an Availability Service Credit for the same Outage if both SLA's have been breached.

### Eligible Services On-Net

DigitalWell TTF varies depending upon the type of Service:

| Service | DigitalWell Core MPLS IP Network |
|---|---|
| Coverage | 24x7x365 |

### Calculation

Outage time is calculated at the time from raising a Trouble Ticket or when the incident is identified by our monitoring system proactively, whichever is earlier, until the time when the affected service is restored.

### Time to Fix Credit Schedule

| Outage Time hours past TTF SLA | Service Credit (% of Monthly Charge) |
|---|---|
| 0–4 hours | 3% |
| 4–8 hours | 5% |
| >8 hours | 7% |

TTF Service Credits payable to the Customer will be calculated based on the total Monthly Charge for the affected service.