SERVICE SCHEDULE 6
du L3 VPN SERVICE WITH SINGLE-CLASSES OF SERVICE

The following terms and conditions shall apply when du provides the L3 VPN Service to the Customer.

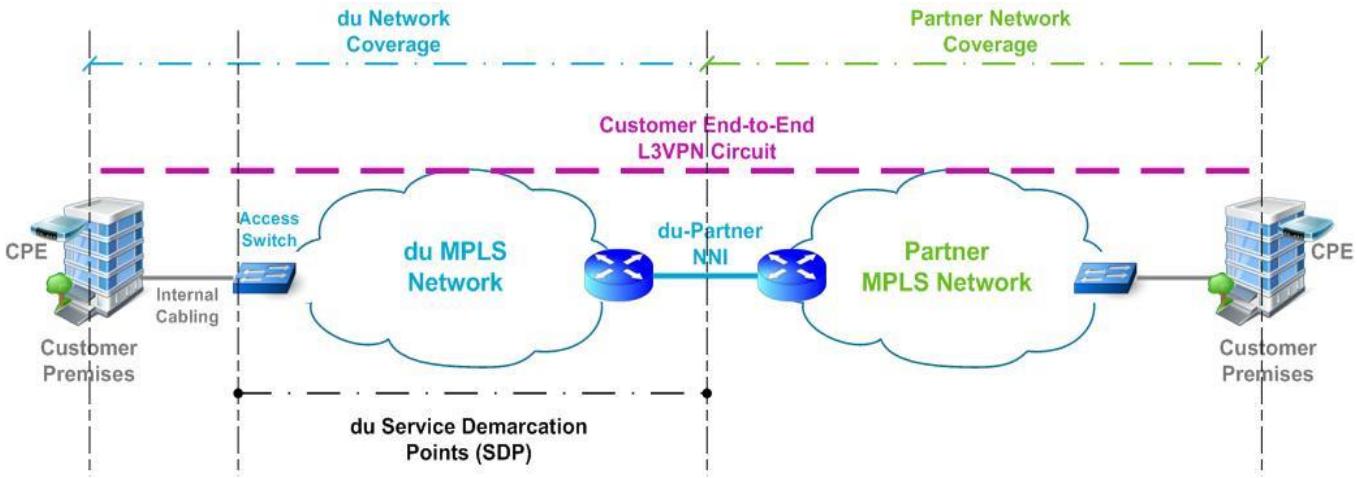
1 INTRODUCTION

The L3 VPN Service is a layer 3 MPLS based connectivity service. du offers inter-carrier or inter-AS L3 VPN services across the globe. Inter-AS VPN is a scalable mechanism that allows for the extension of the Customer's network between two different service provider domains, this is an extension of RFC4364 MPLS. Among the four methods available for Inter-AS VPN services deployment, du primarily deploy option A or the back to back VRFs between PE-ASBR nodes. Option A does not support exchange of label information.

The Service Demarcation Point (SDP) of the L3 VPN Service is the access switch where an access port is provided to the End User.

Below is a diagram 1 illustrating the L3VPN Service (including the SDP):

Diagram 1



2 TERMINOLOGY DEFINITIONS

2.1 In this Service Schedule, the following terms shall have the following meanings:

"**Best Effort**" has the meaning given to it in Table 4.1 of this Service Schedule.

"**CBWFQ**" (Class-based Weighted Fair Queuing) means a network router queuing method that allows traffic to share bandwidth allocations equally, after being grouped by classes.

"**CE**" means **Customer Equipment** and refers to equipment that is owned and managed by the Customer.

"**CHARGES**" means the Installation Charges, Monthly Charges, and any Termination Charges or Cancellation Charges payable in respect of a Service (as set out in a Service Schedule or Service Order), and any other charges payable by the Customer to the Supplier in accordance with the terms and conditions;

"**CIR**" or "Committed Information Rate" means the maximum guaranteed bandwidth allocation for traffic arriving at or departing from the SDP.

"**Circuit**" means a point-to-point transmission channel provided by du for the Customer's use for the conveyance of data and/or information services between the du Network Termination Points.

"**Dual Access**" means the Customer's equipment is connected to du's access network via two links from two access devices.

"**Dual International** (**Int'l**) **Backhaul**" means that the L3 VPN Service comprises two separate links across the international backhaul part of du's Network.

"**Exceed Drop**" means that the traffic exceeding the CIR and/or Burst will be dropped

"**IP**" means internet protocol.

"**Jitter**" means the delay variation experienced by test packets when sent across the du Network at regular time intervals. The Jitter value is the difference between the shortest transit time and the longest transit time in milliseconds.

"**Latency**" or "**Round Trip Time**" means the time it takes a given network packet to travel from source to destination and back.

"**L3 VPN Service**" means the L3 VPN Service as described in this Service Schedule.

"**MPLS**" means multi-protocol label switching.

"**MTU**" means Maximum Transmission Unit.

"**Network Termination Point**" means the point at which the du Network terminates on the Customer-facing side of the du access switch as specified in the Service Order.

"**Single Access**" means the Customer Equipment is only connected via one link on du's access Network.

"**Supplier Network**" means the telecommunications network operated by du.

"**WRED**" (**W**eighted **R**andom **E**arly **D**etection) means a queue management algorithm with congestion avoidance capabilities. It is an extension to random early detection (RED) where a single queue may have several different queue thresholds. Each queue threshold is associated to a particular traffic class.

2.2 Other capitalized words in this Service Schedule have the meanings set out in the Standard Terms and Conditions.

3 SERVICE DESCRIPTION

3.1 The L3 VPN Service provides the Customer with any-to-any IP connectivity between End User sites in the UAE and other sites outside of the UAE (as requested by the Customer) via du interconnecting with the Customer's network via a network to network interface (NNI) (see diagram 1).

4 AVAILABLE CLASSES OF SERVICE

4.1 There are three categories of service classes available for the L3 VPN Service as defined in clause 4.2 below. Each category allows the Customer to select a number of options from the traffic classifications set out in Table 4.1 below:

4.2 The following classes of service are available for the L3 VPN Service:

a. Non-QoS unmanaged service ("Non-QoS"); and

b. Single-class QoS unmanaged service ("Single-class QoS");

Table 4.1

Traffic classification	Application	Description
Business critical	Business critical Business video	Guaranteed bandwidth allocation (CBWFQ) WRED congestion avoidance
Business-data	Business data	Guaranteed bandwidth allocation (CBWFQ) WRED congestion avoidance
Business-standard	Business standard	Guaranteed bandwidth allocation (CBWFQ) WRED congestion avoidance
Best Effort	Internet and Non-QoS Traffic	No guaranteed bandwidth allocation WRED congestion avoidance

Note: Voice/ Video traffic are not allowed to be carried over the L3 VPN circuit.

4.3 Non-QoS

If the Customer elects the Non-QoS, the L3 VPN Service will be provided on a Best Effort basis (as defined in Table 4.1 above). There is no bandwidth allocation guarantee and packet drops may occur during congestion caused by network failure.

4.4 Single-class QoS

If the Customer elects the Single-class QoS, the Customer may elect one of the following two traffic classifications set out in Table 4.4.

Table 4.4

Package No.	Business-Critical (Video)	Business-Data	Business-Standard
10	100%		
11		100%	
12			100%

5 INDICATIVE PERFORMANCE METRICS

5.1 The performance metrics specified in Table 5.1 below ("Performance Metrics") are indicative only and only apply to On-net traffic. The Performance Metrics do not comprise binding Service Levels and are not binding.

Table 5.1

Class of Service	Packet Loss	Latency (milliseconds (ms))	Jitter
Business-Critical	< 0.001%	< 60ms	< 25ms
Business-Data	< 0.1%	< 80ms	< 30ms
Business-Standard	< 0.1%	< 100ms	-
Best Effort	< 1%	< 150ms	-

6 SERVICE PARAMETERS

6.1 L3 VPN Service bandwidth

The bandwidth for the L3 VPN Service will be specified in the Service Order. The following bandwidth allocations are currently available for the L3 VPN Service and du may notify the Customer if any further bandwidth allocations become available:

- 64Kb; 128Kb; 256Kb; 512Kb; 1Mb;
- 2Mb to 10Mb with increments of 2Mb;
- 10Mb to 50Mb with increments of 5Mb;
- 50MB to 100Mb with increments of 10Mb;
- 100Mb to 1Gb with increments of 100Mb; and 10Gb

6.2 Access interfaces supported (Customer facing ports)

The L3 VPN Service supports the following interfaces and du may notify the Customer if any further interfaces are able to be supported:

- 100BaseT – RJ45 (802.3u);
- 1000BaseT – RJ45 (802.3ab);
- 1000BaseSX – LC (802.3z); and
- 1000BaseLX – LC (802.3z)

6.3 Maximum Transmission Unit (MTU)

The L3 VPN Service supports a MTU size of 1552 bytes. The standard MTU size setting is 1500 bytes. The Customer must specify the specific MTU size in the Service Order.

6.4 QinQ (IEEE 802.1ad)

du's security policy does not allow trunk mode on Customer facing ports. However QinQ, is supported by the Ethernet Service and which accepts a Customer trunk interface and transparently passes any number of Customer VLANs. If the Customer requires QinQ, it must specify this on the Service Order.

6.5 Topology Options

By default, the du L3VPN Service is configured as a fully meshed service so that every site can communicate directly with every other site. The customer can however request a hub-and-spoke design, where only a main or hub site can communicate with all other sites (non-hub site) while non-hub sites cannot communicate between them directly. There is no additional charge for a non-default configuration.

7 CHARGES

7.1 The Customer must pay du the Installation Charge and the Monthly Charge for providing the Ethernet Service. The Installation Charge and the Monthly Charge are specified in the relevant Service Order.

7.2 The Installation Charge and Monthly Charge will be invoiced in accordance with the Standard Terms and Conditions for the amounts detailed in the Service Order.

7.3 In addition, if the Customer requests that du provision the Ethernet Service beyond the du Network Termination Points, du may invoice the Customer additional charges in relation to such provisioning.

7.4 Installation Charges may be invoiced by du to the Customer on a cost incurred basis.

7.5 Cancellation Charges may be invoiced by du to the Customer on a cost incurred basis or as otherwise calculated in accordance with clause 7.6.

7.6 If all or part of a Service is cancelled or the Service details are significantly modified, including without limitation a change in the du Network Termination Points or capacity, prior to the Target Service Commencement Date, du may charge the Customer a Cancellation Charge to cover the reasonable costs incurred by du as a result of such cancellation or modification. The applicable Cancellation Charge will be in accordance with Table 6.6 below:

Table 6.6

Number of full Working Days before Target Service Commencement Date	Cancellation Charge as % of Installation Charge
0 to 1 days	100%
2 to 5 days	90%
6 to 10 days	70%
11 to 20 days	50%
21 to 30 days	25%
more than 30 days	0%

8 QOS OR DSCP MARKING POLICY AND CONDITIONS

8.1 The Customer must comply with:

a. the Type of Service (DSCP) marking designation.

8.2 If the Customer fails to comply with the requirements in clause 8.1 above the L3 VPN Service may be degraded and performance impacted. If the Customer repeatedly fails to comply with the requirements in clause 8.1, du may discontinue the L3 VPN Service.