

1. Service Overview

The Cloudhop Service provides you with a private layer 2 or layer 3 network connecting the Next Generation Network to a third-party cloud platform across a private EoMPLS network, moving traffic off the public Internet. This Service covers Western European access, resilience options, routed and layer 2 VLAN extension. We deliver the Service from the centre of the supplier network to the edge of the Cloud Service Provider (CSP) network.

In order to consume the Cloudhop Service, you must provide us with extension to your sites and access to your virtual machines within the cloud service, including NGN access, Virtual Point to Point port(s) and CSP service usage fees. Please refer to Section 6.3 for further information.

We deliver the Cloudhop Service using our resilient NGN and resilient Cloud exchange interconnect fabric, enabling both single or diverse connections.

Additional information is included in your Order Form and Statement of Work.

2. Service Features

We provide a dedicated Cloudhop Service to connect each logically separate CSP zone to the NGN. Network connectivity options range from 50Mbps to >10Gbps.

We provide each Cloudhop Service using at least one of the of logical access solutions described below. Each access solution connects to a single cloud account instance. For multiple connections, multiple Cloudhop Service instances are required. Your selection and the relative charges will be specified in your Order Form.

Access Service	Type	Description
AWS Direct Connect - layer 2	A	Extension of cloud edge VLAN to your end point. You will be responsible for the routing setup with AWS.
AWS Direct Connect - layer 3	B	Connection of cloud edge to the NGN network. We will provide routing of cloud traffic into a new or existing Managed WAN instance.
AWS Direct Connect dedicated port	C	Provision of a dedicated 1Gb or 10Gb port on the NGN with a Single Mode Fibre cross-connect to your AWS direct connect port EU West or EU Central.
Microsoft Azure Express Route - layer 3	B	Diverse connection of cloud edge to the NGN network. We will provide routing of cloud traffic into a new or existing Managed WAN instance, providing the AS Number and Link net IPv4 address space needed.
Salesforce.com layer 3	B	Connection of cloud edge to the NGN network. We will provide routing of cloud traffic into a new or existing Managed WAN instance.
Google Cloud Platform - layer 3		Connection of cloud edge to the NGN network. We will provide routing of cloud traffic into a new or existing Managed WAN instance.



Oracle - layer 3	B	Connection of cloud edge to the NGN network. We will provide routing of cloud traffic into a new or existing Managed WAN instance.
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2.1 Resilience Option

We offer two resilience options for layer 3 Cloudhop access service. Your selection will be defined in your Order Form:

- (a) **Standard Access** – a single access service is provided from the cloud edge to the NGN. Standard access is referred to as the primary access service.
- (b) **Diverse Access** – we provide a primary and a secondary access service. These are configured in an active/passive set-up whereby the primary access service is used by default. If the Provider Edge Router detects an issue with the primary access service, the secondary access service is used until the Router detects that the primary access service is re-established.

Each layer 2 access connection is active on the NGN and you are responsible for routing in accordance with the cloud provider defined standards.

2.2 Cloudhop Service Configuration Options

Each Cloudhop Service layer 3 access is set up with one virtual routing and forwarding (VRF) table per cloud edge network to share the access services across multiple sites. Each VRF will be deployed in a configuration such that each of your site(s) within the VRF can reach all your other sites within the same VRF.

Your IP addressing within the Cloudhop Service will use private ranges as defined per RFC1918 or IP addressing registered to you in an LIR database. The following IP address ranges should be avoided as they are used by us to manage the network: 172.31.0.0/16, 172.30.0.0/16, 172.16.0.0/16. If these ranges are configured and in use by you, we can, at your request, evaluate design variations to accommodate their use.

We support both IPv4 or IPv6 configured as static or BGP routing protocols, subject to support being provided within the cloud provider domain.

Each Cloudhop layer 2 access provides for the VLANs associated with the cloud edge to be extended across the NGN network to your site, extension will be in a point to point configuration.

3. Service Implementation

After order acceptance, we will implement the Service as follows:

Service Implementation	Us	You
We will send out Welcome Pack and a Technical Data Capture Form.	●	
We will place orders with our third parties to fulfil the access service(s).	●	



We will schedule site survey(s) with you, where required.	●	
We will confirm any additional work required following the site survey(s).	●	
We will confirm your commit date(s).	●	
We will pre-configure and dispatch routers to your preferred address(es) where applicable.	●	
We will install access service(s).	●	
We will confirm Ready for Service and provide you with our Handover Pack.	●	
We will jointly activate the access service(s).		●

All implementation work will be carried out during business hours. We will invoice additional charges for any work undertaken out of hours. We reserve the right to charge additional fees for any change in your requirements occurring after the implementation of the Service and outside the scope of your contract.

3.1 Ready for Service

The Ready for Service Date is the date when we (acting reasonably and properly) notify you that the implementation steps are complete and that the Service is ready for service. This date may be specified to occur at a later date, if mutually agreed to be so. If you consider that the Service is not ready for service on the date notified, you must notify us within two (2) weeks of our notification, after which the Ready for Service date will be deemed to have occurred regardless of issues or defects of which you may later become aware and notify us about (which will then be dealt with as faults or service issues but will not change the Ready for Service Date).

4. Billing

The Service will be billed as a Set-Up Fee and a Recurring Fee as described in the Billing Guide, using the definition of the Ready for Service Date in Section 4.1 of this Service Description.

5. Service Operations

Please refer to our Operations Manual for further information on incident management, requests for change and information requests.

6. Dependencies

We will provide the Cloudhop Service subject to the following dependencies:

6.1 Client Obligations

- (a) You will designate a project lead and technical contacts with the appropriate level of expertise to support the successful implementation and operation of the Service;
- (b) You will provide us with all of the information needed to complete the configuration of the Service, including either the account or service key supplied by CSP;



- (c) You will manage any of your own third parties needed during Service Implementation or Service Operations;
- (d) You will provide us or our third parties with access to your site(s) for set up and maintenance of the access service and for maintenance of the MSDD;
- (e) You will ensure that structured cabling and appropriate LAN connectivity are in place on your site(s);
- (f) If using AWS, you will be responsible for the routing setup with AWS; and
- (g) Each layer 2 access connection is active on the NGN and you are responsible for routing in accordance with the cloud provider defined standards.

6.2 Service Dependencies

- (a) NGN access, Virtual Point to Point port(s) and CSP configuration and connection charges are not included in the Cloudhop Service (see Exclusions section below), but these are necessary for the provision of the Service and can be provided either by us or by a third party.

7. Exclusions

- (a) NGN access, Virtual Point to Point port(s) and CSP configuration and connection charges are not included in the Cloudhop Service;
- (b) Configuration of the connection within the CSP portal is not included in the Cloudhop Service, but can be purchased as a separate professional services engagement; and
- (c) Cloudhop Service does not provide encryption, although it can forward already-encrypted traffic.

8. Definitions and Acronyms

8.1 Definitions

In this document “we” or “us” refers to the Supplier, and “you” refers to the Client.

The terms listed have the following meanings:

Term	Meaning
Account ID	Unique AWS secure key/account ID to identify you to the CSP.
Designated Reference Router	Any designated MSDD within your Cloudhop Service (e.g. the MSDD on your Headquarter Site) or, where there is no other MSDD within the Cloudhop Service or when the Access Service to the designated MSDD has a fault/is Congested, the Provider Edge Router in our NGN.
EoMPLS	Ethernet over MPLS Service, it is method of transporting layer 2 Ethernet frames over an MPLS network.
Gbps	Gigabits per second, transmission speed per second.



Mbps	Megabits per second, transmission of packets per second.
Point of Presence	Geographically diverse and resilient facilities spread across our NGN.
Provider Edge Router	The router in our NGN to which the Access Service is connected.
RFC1918	A defined global reservation of ranges of IP addresses that cannot be routed on the Internet
Service Key	Unique Microsoft Azure secure key to identify you to CSP.
Statement of Work	A document which defines project-specific or client-specific activities, deliverables and/or timelines for providing services to that client.
Virtual Point to Point	Private data connection securely connecting two or more locations for private data services.

8.2 Acronyms

Acronym	Meaning
BGP	Border Gateway Protocol
CSP	Cloud Service Provider
LIR	Local Internet Registry
MSDD	Managed Service Demarcation Device
MPLS	Multi-Protocol Label Switching
NGN	Next Generation Network
PoP	Point of Presence
SoW	Statement of Work
VLAN	Virtual Local Area Network
VRF	Virtual Routing and Forwarding



9. Operational Targets

Product		P1	P2	P3	P4
Diverse Access Type 1	Response	30 mins	30 mins	1 hour	Next Business Day
	Fix	4 hours	6 hours	8 hours	3 Business Days
	Hours of Support	24x7	09:00 - 17:30, Business Days	09:00 - 17:30, Business Days	09:00 - 17:30, Business Days
	Description	Total loss of both Primary Access Service and Secondary Access.	- Total loss of either Primary Access Service or Secondary Access; - Performance issues.	Non-service-affecting issue.	- Service Requests; - Non-Service affecting work and reports; - A required change or configuration alteration to a service.
Standard Access Type 3	Response	30 mins	30 mins	1 hour	Next business day
	Fix	6 hours	12 hours	24 hours	3 business days
	Hours of Support	24x7	09:00 - 17:30, Business Days	09:00 - 17:30, Business Days	09:00 - 17:30, Business Days
	Description	Total loss of Primary Access Service.	Performance issues.	Non-service-affecting issue.	- Service Requests; - Non-Service affecting work and reports; - A required change or configuration alteration to a service.

The implementation of the service depends on our third-party' delivery time. The following target implementation times are exclusive of any time reasonably beyond the control of the CSP:

- Up to fifteen (15) Business Days from Order Acceptance for Cloudhop layer 2;
- Up to twenty (20) Business Days from Order Acceptance for Cloudhop layer 3.

10. Service Levels and Service Credits

The Service will be delivered at the target level set out below for the percentage level described, against which service credits will be paid (as set out in the Billing Guide).

Service	Measurement	Period	Target	Service Level	Service Credit
All Cloudhop Standard Access	Availability - the ability to transmit a 64-byte IP data packet from the MSDD to the Designated Reference Router over the active Access Service and receive the response whilst not Congested. The KPI is defined as the percentage of packets successfully received.	Calendar Month	99.99%	99.9% - 99.29% 99.30% - 98.85% Less than 98.84%	5% of monthly value of Recurring Fees 10% of monthly value of Recurring Fees 15% of monthly value of Recurring Fees
All Cloudhop Diverse Access			100% exclusive of the time taken to technically switch between the primary and the secondary connection.	100% - 99.89% 99.9% - 99.29% 99.3% - 98.84% Less than 98.85%	5% of monthly value of Recurring Fees 10% of monthly value of Recurring Fees 15% of monthly value of Recurring Fees 20% of monthly value of Recurring Fees