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PRIVATE IP SERVICE

1. **GENERAL**

1.1 **Service Definition**. Verizon offers four variations of this service: Private IP Service, Private IP Layer 2, Private IP Gateway and Private IP Interconnect. Please note that not all variations are available in all regions.

2. **AVAILABLE VERSIONS PRIVATE IP SERVICE**

2.1 **Private IP Service**

2.1.1 **Service Definition**. Private IP is a wide area data networking service which provides any-to-any connectivity to transport Customer data between Customer Sites.

2.1.2 **Standard Service Features**

2.1.2.1 **Route Capacity and IPv4 and IPv6 Protocols**. Verizon will assign a maximum number of routes that Customer may introduce into the Private IP Network based upon the total number of sites expected in a given Customer VPN, as shown in the following table.

Expected Total Number Sites	Maximum Routes IPv4	Maximum Routes IPv6
1 – 50	1,250	150
51 – 250	1,250	750
251 – 500	2,500	1,500
501–1,000	5,000	3,000
1,001+	10,000	6,000

Capacity constraints may vary for Customers using MVIC (available upon request). Customer will select either IPv4 or IPv6 protocol (where available), and a suitable number of IP addresses to be used in conjunction with Private IP and in accordance with Verizon's then-current applicable assignment guidelines.

2.1.3 **Optional Service Features**

2.1.3.1 **Diversity**. With Diversity service, Verizon provides a second equivalent circuit for the same Customer Site that may be configured as either active or passive, and as providing either Geographic Diversity or Router Diversity (defined below), as Customer elects.

2.1.3.2 **Dynamic Network Manager.** With Dynamic Network Manager (f/k/a Dynamic Bandwidth), Verizon provides a web-based interface through which Customer can dynamically manage its CAR and

Private IP Port values. Customer accesses the interface through the Verizon Enterprise Center or via an Application Program Interface.

2.1.3.3   **IP Multicasting**. With IP Multicasting, Verizon will simultaneously deliver a single stream of data to multiple recipients in Customer-provided multicast groups.

2.1.3.4   **Multiple Virtual Routing and Forwarding.** With Multiple Virtual Routing and Forwarding, Customer may create multiple virtual private network connections via a single Private IP port. Customer may use those connections to extend the privacy and security of the Private IP service to the various LANs at Customer's Site. Customer understands and accepts that packet drops may occur if Customer creates an oversubscription of virtual private network connections on the Private IP port and Verizon is not responsible for such packet drops.

2.1.3.5   **Class of Service Selection**. Verizon will route Customer traffic based on the priority assigned by Customer using different classes of service designations, which follow the Internet Engineering Task Force Differentiated Services or Diff-Serv model. If Customer does not set different classes, Verizon will route all Customer traffic using the BE class as the default priority designation.

2.1.4   **Customer Responsibilities**

2.1.4.1   **Bandwidth Shaping for Ethernet Access Circuit.**   If Verizon provisions 'bandwidth shaping' overhead adjustments on the Ethernet Interfaces at the PE Egress, it may be necessary for Customer to apply policies at Customer's CE egress to prevent packet loss due to Ethernet protocol overhead used within the Private IP Network (depending on the Private IP platform and Customer's traffic profile).

2.2   **Private IP Layer 2**

2.2.1   **Service Definition**. Verizon Private IP Layer 2 service provides point-to-point routing, with Customer control of routing, architectural and topology changes.

2.2.2   **Optional Service Features**. With the Private IP Permanent Visual Circuits feature, Verizon will add one or more Private IP PVCs (defined in the General Definitions, link below) on Customer's Private IP Layer 2 port upon Customer's request.

2.3   **Private IP Gateway**

2.3.1   **Service Definition**. With Private IP Gateway service, Verizon provides an interconnection between two private networks based on the characteristics of the gateway, as described below.

2.3.2   **Standard Service Features**. Verizon provides the following Private IP Gateways:

2.3.2.1   **Secure Cloud Interconnect** (Optimized Service Only). With Secure Cloud Interconnect, Verizon provides an interconnection with the network of select third-party cloud providers (with whom the customer has separately contracted) enabling Customer to utilize those third-parties' cloud services over Private IP, Switched E-LAN, or Switched E-LINE network. Secure Cloud Interconnect has unique pricing, network designs, and capabilities; details are available on request.

2.3.2.2   **Private Wireless Gateway** (U.S. Mainland Only). With Private Wireless Gateway, Verizon provides Customer a port that Customer may use to connect Customer's wireless traffic to the Private IP Network.

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2.3.2.3 **Satellite Gateway** (Non-Optimized Service Only). With Satellite Gateway, Verizon provides a gateway port to receive Customer's satellite traffic to the Private IP Network. Each Customer individual Virtual LAN will be mapped to a Private IP PVC/CAR. Since multiple sites share a Virtual LAN and PVC to the Private IP Network, the Private IP CAR is sized according to Customer's expected traffic and the total instantaneous traffic load that the satellite network can handle.

2.3.2.4 **MVIC Service** (Select Locations). With MVIC Service, Verizon connects Verizon's Private IP Network to an MPLS Partner's MPLS networks.

2.4 **Private IP Interconnect** (PIP-I) (Select customers only)

2.4.1 **Service Definition**. Private IP Interconnect, or PIP-I, is only available to customers who have been approved by Verizon to receive this feature. With this service, Verizon provides a direct, point-to-point interconnection between Private IP site(s) Customer purchases from Verizon and Customer's third party MPLS-based network, using a shared port gateway designed to support multiple customers.

2.4.2 **Standard Service Features**

2.4.2.1 **PIP-I Connection and Port**. With PIP-I, Verizon provides a PIP-I Connection and a PIP-I Port. A PIP-I Connection is a physical Port that presents PIP-I at the demarcation point for interconnection to Customer's network. A PIP-I Port is a logical PIP Port associated with a VPN name that attaches to PIP site(s) that Customer has purchased from Verizon.

2.4.2.2 **Non-Supported Features**. PIP-I does not support multi-Virtual Routing and Forwarding, Dynamic Network Manager and multicasting. PIP-I does not support a redundant configuration.

2.4.3. **Customer Responsibilities**

2.4.3.1 **Ordering PIP-I Ports**. Customer will order PIP-I Ports only with an assignment to an existing or new PIP VPN name.

2.4.3.2 **Ordering Multiple PIP-I Ports**. Each PIP-I Connection can be used with multiple PIP-I Ports but each PIP-I Port can be associated with and route traffic to only one PIP-I Connection. Under no circumstances will Customer route traffic presented to PIP-I on one PIP-I Connection to another PIP-I Port on a different PIP-I Connection. If Verizon identifies any such usage of the Service, it reserves the right to immediately terminate the Service to Customer.

2.4.3.3 **Restriction on use of PIP-I with Existing Customers of Verizon**. Customer will not connect a PIP-I Port to a port on Verizon's MPLS network that is provisioned by Verizon to an existing customer of Verizon.

2.4.3.4 **Disconnection**. Customer shall ensure no PIP-I ports are active prior to disconnect order or the order will not be processed by Verizon.

3.   SUPPLEMENTAL TERMS

3.1 **India Ports.** This clause applies if the Private IP Service contains ports in India. Prior to the Service Activation Date the Customer will complete and sign, or will procure the completion and signing by its Indian Affiliate (or other end user) receiving the Private IP Service in India, the document in the form set out in Schedule 1 hereto ("Proforma"). To the extent that the information required by the Proforma cannot be completed (or is otherwise not completed) until after the Service Activation Date the Customer authorizes Verizon to complete the Proforma or undertakes to provide any additional necessary information as requested by Verizon for that purpose.

3.2 **Restriction on Selling Encryption Services.** Customer shall not employ bulk encryption equipment in connection with Verizon Facilities in India. Customer is permitted to use encryption up to 40 bit key length in RSA algorithm. If Customer requires encryption higher than this limit, then Customer must obtain approval from the relevant telecom authority and shall deposit the encryption key, split in two parts with such telecom authority.

3.3 **Provisioning Entities in China.** Licensed local telecommunication suppliers will be used as Provisioning Entities for any portion(s) of the Private IPs not provided by Verizon or its Affiliates. In China, where Verizon is not licensed to provide any portion of the Private IP and such portion is provided by a licensed local telecommunications supplier, such portion of the Private IP will be part of a greater international network of Private IP provided by Verizon to the Customer. In the event of regulatory changes in China affecting the local supplier's ability to provide the Service, Verizon shall be entitled to terminate the Service, without any further liability, and will transition Customer to another alternative local supplier at a price to be agreed between the parties.

3.4 **Use Restrictions in Turkey.** Due to blocking orders issued by the Turkish government prohibiting access to thousands of sites on the Worldwide Web, the use of the Service by Customer or any of its authorized users to access the Worldwide Web from within Turkey, whether directly or indirectly, and whether such access is technically implemented inside or outside Turkey, is strictly prohibited. Customer will take appropriate measures to comply with this prohibition, including expressly notifying any authorized users of the Service in Turkey of the prohibition. Any violation of this prohibition may result in immediate suspension of the Service by Verizon until, in Verizon's sole judgment, the violation has been cured. Customer will indemnify and hold harmless Verizon from any fines, penalties, losses, damages, costs or expenses arising out any violation by Customer or its authorized users of the foregoing prohibition. Each party will promptly notify the other of any such claim.

3.5 **Voice over IP ("VoIP") Restrictions.** Customer acknowledges that a number of jurisdictions impose restrictions and/or licensing or registration conditions on VoIP transmission over the Network. To the extent such regulations apply, Customer shall comply with those regulations and indemnify, defend, and hold Verizon harmless for any claims arising from Customer's violation of such regulations.

34. **SERVICE LEVEL AGREEMENT (SLA)**

Private IP Service Level Agreement for Private IP + Optimized Services
Private IP SLA Summary and Service Level Agreement for non-Optimized Private IP Service

45. **FINANCIAL TERMS FOR OPTIMIZED SERVICES.** Customer will pay the following charges.

4.15.1 **Optimized Services**. For Optimized services, Customer will pay MRCs and NRCs as specified in the Contract, including the applicable Service Order, Master Terms, and the table below.

4.1.15.1.1 **Administrative Charges**. The Administrative NRCs specified below are applicable to Private IP. NRCs in the table below are in U.S. dollars with the understanding that Customer will be invoiced in the local currency for the country of that invoice.

Administrative Charges	Charge Instance	Port Type	Speed	NRC
Administrative Change	Per Change	n/a	n/a	$60
Cancellation of Service Order	Per Port	n/a	n/a	$800
Expedite	Per Port	n/a	n/a	$1,000
Physical Change	Per Order	n/a	n/a	$200
Reconfiguration	Per Port	Standard Port	64Kbps	$50
Reconfiguration	Per Port	Standard Port	256Kbps,512Kbps	$100
Reconfiguration	Per Port	Standard Port	T1, E1, 1M, 2M	$200
Reconfiguration	Per Port	Standard Port	Above E1	$600

56. **DEFINITIONS**. The following definitions apply to Private IP Service, In addition to the General Definitions at

www.verizonenterprise.com/external/service_guide/reg/g_online_definitions_toc.htm

Class of Service (COS)	A set of designations that Customer can assign to traffic to prioritize its transmission.
Committed Access Rate (CAR)	The amount of bandwidth to which Customer subscribes on a logical Port by logical Port basis. CAR can be equal to or less than the logical Port speed.
Customer Edge (CE)	The edge of, or point in which customer traffic enters or exits, the Customer network
Enhanced Traffic Management Service (ETM)	Provides priority traffic routing using Class of Service designations.
Geographic Diversity	Automatically directs the second Customer circuit to a different Verizon gateway at a different Verizon POP.
MPLS	Multi-Protocol Label Switching - an Internet Engineering Task Force standard.
MPLS Partner	A third party MPLS provider with whom Verizon has an agency or reseller arrangement to provide interconnection to that party's in-country network.
MVIC	MPLS VPN Interprovider Connection
Port	An entrance to and/or exit from a network.
Private IP	Private Internet Protocol
Provider Edge (PE)	The edge of, or point in which customer traffic enters or exits, the Verizon Private IP Network.
Router Diversity	Automatically directs the second Customer circuit to a different switch or router.
Virtual Private Network (VPN)	Uses a logical connection to route traffic between network sites.

Schedule 1 – Customer Indian Affiliate/user Undertakings

Schedule 1 – For customers ordering Private IP Service that contain ports in India, please click here, for the Customer Indian Affiliate/user Undertakings for U.S. Services.