

Internet Protocol Service (IPS)

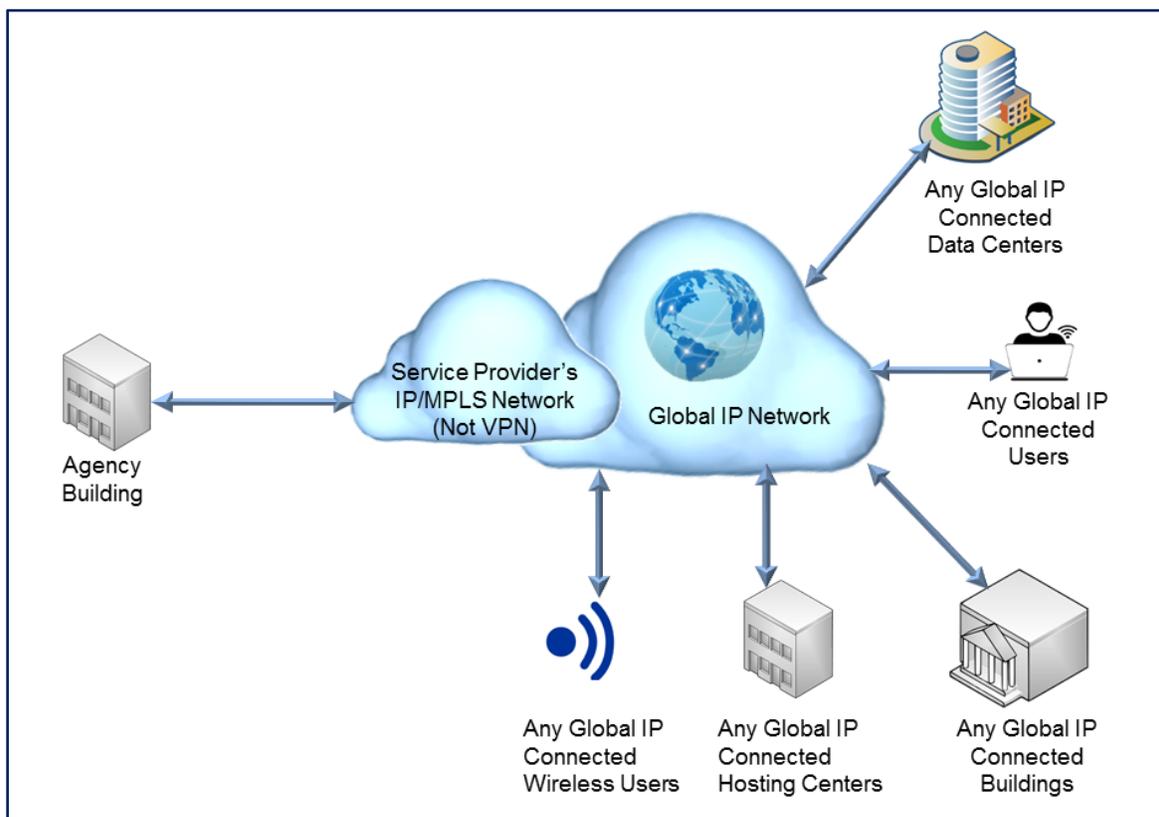
The EIS Internet Protocol Service (IPS) enables government personnel to access the Internet, and government intranets and extranets. IPS uses the TCP/IP protocol suite to interconnect Government Furnished Equipment (GFE) and Service Related Equipment (SRE) with other government, and public Internet Service Provider (ISP) networks. IPS connectivity includes wireline, cable, ethernet, fiber, and wireless.

Category: Data Service

Complementary Services Needed: In order to use IPS, the agency may need EIS Access Arrangements or equivalent.

Definitions: Please see EIS contract [Section J.12 Glossary of Terms](#) for clarification of technical terms and acronyms.

Figure 1—Internet Protocol Service Architecture Diagram



1. Why an Agency Might Select this Service

- IPS as a transport protocol can operate on many different network infrastructures; it is not bound to a specific technology or topology. IP traffic can be transported on virtually any existing network equipment and is not limited to specific device requirements.
- IPS provides access to government intranets and extranets.
- The service can transport video, voice and data. It can prioritize transmission based on the type of information (i.e., Class of Service [CoS]) being sent.
- Provides connection to a wide range of equipment such as notebook PCs, smartphones, etc., via appropriate combinations of EIS services.
- IPS supports access services such as DSL, cable, Private Line Service (PLS), and Commercial Satellite Communications Service (CSCS) to connect agency Service Delivery Points (SDPs) to the contractor's IPS network.

NOTE: Agencies considering this service may also want to compare this service with Virtual Private Network Service (VPNS), Ethernet Transport Service (ETS), and Managed Trusted Internet Protocol Service (MTIPS).

2. Examples of How IPS Could be Used

- **Intranet Access to Tools and Resources:** IPS could be used by an agency to give personnel access to information and web applications via its intranet.
- **IPv6 Upgrade:** Agencies that are currently on IPv4 which uses 32-bit addresses, can use IPS as part of their upgrade to IPv6, a federal government requirement. IPS fully supports the IPv6 standard, which uses 128-bit addresses.
- **Service Delivery Point Integration:** IPS is ideal for the seamless integration of an agency's Service Delivery Point (SDP) sites since it offers a broad range of bandwidth options and supports a wide variety of access architectures.
- **Secure, Remote Connections:** In order to support remote and mobile users, an agency could use IPS to form secure, site-to-site Virtual Private Network (VPN) tunnels using the IPSec encryption protocol.
- **HTTPS Security Upgrade:** Using IPS, agencies can implement a more secure architecture for their websites through the use of Hyper Text Transfer Protocol Secure (HTTPS). Over twenty agencies have already hardcoded their respective .gov websites with the HTTPS protocol as a default, including all subdomains. HTTPS is a more secure version of HTTP that is gaining wider use across the Internet for federal government agency websites.

3. Key Technical Specifications

NOTE: This portion of the service guide has been abridged due to space considerations. For full technical details on IPS, please refer to EIS contract [Section C.2.1.7](#).

Table 1—IPS Technical Capabilities

Capability	Description
Routing Requirements	Ensures any encrypted tunnels are applied and proxied to allow inspection.
IPS Ports	IPS ports perform at the peak data rates specified by the customer.
Appropriate Access Services	Supports DSL, cable high speed access, PLS, or satellite to connect customer SDPs to the contractor's IPS.
IPS Providers Network	Service provides the following capabilities: <ul style="list-style-type: none"> a) Established public peering arrangements from the contractor's network to the Internet. b) Private peering arrangements established from the contractor's network with redundant links to connect to its private peering partners. c) Support for the government-assigned and InterNIC-registered IP addresses and domain names. d) Primary and Secondary Domain Name Service (DNS) to provide an authoritative name server for the customer.
Border Gateway Protocol (BGP)	Provides BGP support for EIS customers with registered Autonomous System (AS) numbers.
Validate Routing Protocol Information	Uses authenticated protocols. BGP sessions are configured in accordance with, but not limited to, the NIST SP 800-54 recommendation that BGP sessions are protected with the MD5 signature option.

Table 2—IPS Features

Feature	Description
<p>Class of Service (CoS)*</p> <p>*NOTE: “Class of Service” is referred to as “Quality of Service” in EIS contract Section B.2.1.7 Internet Protocol Service (IPS). Despite this difference, the Description to the right is the proper IPS definition for both terms.</p>	<p>The service provider accommodates and optimizes an agency’s applications to enable the network to accurately and consistently allow for traffic prioritization and cost-efficiencies.</p> <p>The Classes of Service or prioritization levels may be categorized as:</p> <ol style="list-style-type: none"> 1. Premium – for time-critical traffic such as voice and video 2. Enhanced – for business-critical traffic such as transactions 3. Standard – for non-critical traffic such as email.

4. Pricing Basics for IPS

Please visit the [EIS Resources Listing](#) and locate the [Basic EIS Pricing Concepts Guide](#) to gain an understanding of EIS pricing fundamentals.

4.1 Access Arrangements

Appropriate access arrangements must be selected for each endpoint. Please visit the [EIS Resources Listing](#) and locate the [Access Arrangements Guide](#) for more detailed information.

4.2 Service Related Equipment (SRE)

- SRE must be chosen based on equipment required at each location. NOTE: SRE uses catalog-based pricing.
- Request that contractor provide pricing for any SRE that would be required, in addition to the agency's existing infrastructure, to deliver the service.
- Please visit the [EIS Resources Listing](#) and locate the [Service Related Equipment Service Guide](#) for more detailed information.

4.3 IPS Price Components

The price structure for IPS consists of the components shown in *Table 3* below.

Table 3—IPS Pricing Components

Component	Charging Unit
Port Charge, Monthly Recurring Charge (MRC)	Per port
IP Quality of Service (QoS) Configuration (see NOTE #s 1-3 below)	Per port NOTE: Not Separately Priced (NSP) and configured on an Individual Case Basis (ICB)
Usage Overage (This service is auto-sold, but only with burstable ports. See Auto-Sold CLINS in Section 4.3.1 below for details.)	Per Mbps

Figure 2 below shows how the pricing components in *Table 3* are combined to produce the total cost for the service.

NOTE:

1. "Quality of Service" is referred to as "Class of Service" in EIS contract [Section C.2.1.7.2 Features](#). Despite this difference, the Description provided in the lone table in [Section C.2.1.7.2](#) is the proper IPS definition for both terms.

2. The agency is not charged for QoS, as this service is included with the cost of the port. In other words, QoS is “Not Separately Priced” (NSP). Agencies desiring QoS simply have to specify CLIN IP50001 in addition to the needed IPS ports.
3. The QoS configuration of an IPS port is done on an Individual Case Basis (ICB), and thus is associated with an ICB CLIN. The ICB CLIN is used in combination with a contractor-assigned Case Number to form a unique identifier for the port's QoS configuration.

Figure 2: This figure shows how the various pricing components in Table 3 would be combined to calculate the total IPS charges. NOTE: One or more of these components may not be needed to price a particular service package.



The charges for the different components in *Figure 2* are calculated using details provided in the pricing tables in EIS contract [Section B.2.1.7 Internet Protocol Service \(IPS\)](#). (Please visit the [EIS Resources Listing](#) and locate the [Basic EIS Pricing Concepts Guide](#) for instructions on using the pricing tables to compute the cost of a service.)

4.3.1 Auto-Sold and Task Order Unique CLINs

1. Auto-Sold CLINs

IPS includes Usage Overage CLINs, which are auto-sold with burstable IPS ports. (A *burstable* port permits the agency to exceed the committed port rate by a specified amount, and the corresponding auto-sold CLIN enables the contractor to bill the agency for the additional bandwidth.)

For example, if an agency were to order a 300 Mbps IPS port using CLIN IP30022 "IPS – Ethernet – 300 Mbps committed, burstable to 1 Gbps," a Usage Overage CLIN would be auto-sold with that port. In this particular case, the auto-sold CLIN would be CLIN IP40300 "300 Mbps committed port burstable to 1 Gbps."

Contractors may also include other auto-sold CLINs for the services offered on their contracts. All auto-sold CLINs for a particular contract are listed in EIS contract table [B.1.2.11.1 Auto-Sold CLINs Table](#).

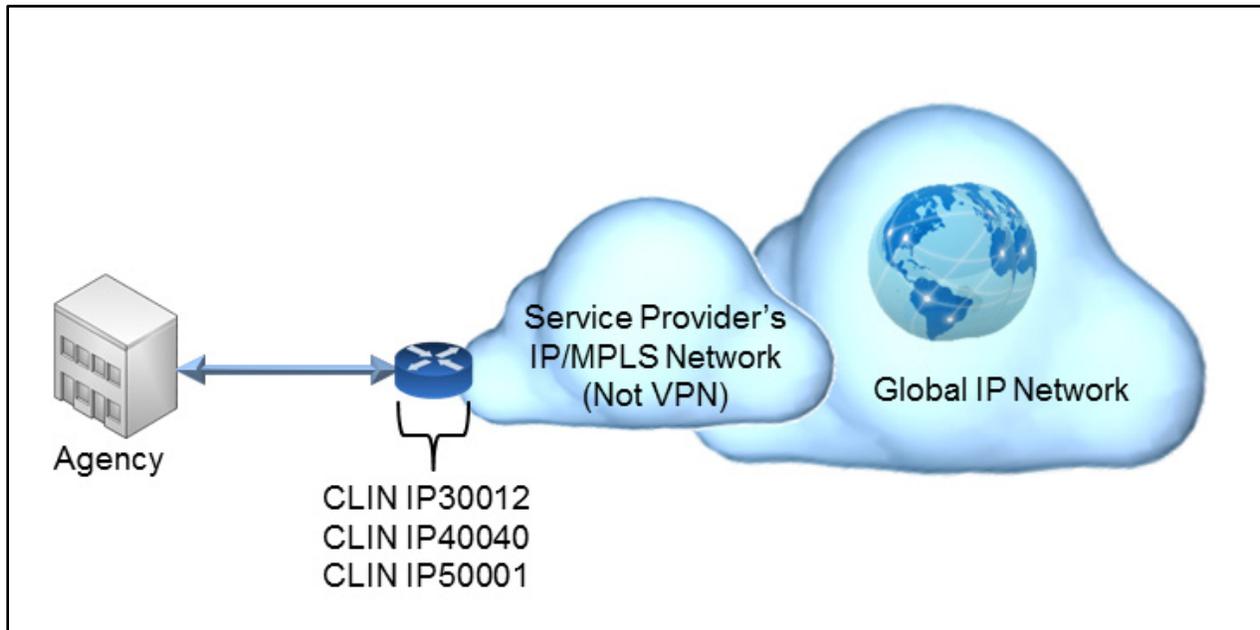
2. Task Order Unique CLINs

A contractor may offer a custom variation of IPS to meet an agency's unique requirements. Such a customization would be identified with a Task Order Unique CLIN (TUC), and would include charges that would have to be added to the components in *Figure 2* to determine the total cost of the service.

4.4 IPS Pricing Example

Example: IPS with 40 Mbps Ethernet Port Burstable to 100 Mbps and QoS Configured

Figure 3—IPVS Pricing Diagram



Service CLINs

- Choose CLIN IP30012 “IPS – Ethernet – 40 Mbps committed, burstable to 100 Mbps” (see EIS contract table *B.2.1.7.3.2—IPS Port Pricing Instructions Table*).
- Note that CLIN IP40040 “IPS – Ethernet burstable overage for 40 Mbps committed port burstable to 100 Mbps” is auto-sold with the above CLIN.
- Choose CLIN IP50001 “IP Quality of Service (QoS)” (see EIS contract table *B.2.1.7.3.2—IPS Port Pricing Instructions Table*) to indicate the need for QoS on the port.

5. References and Other Sources of Information

- For more technical details and information on IPS, please refer to EIS contract [Section C.2.1.7](#); for pricing details, [Section B.2.1.7](#).
- For more information on service-related items, please see:
 - EIS contract [Section B.2.10 Service Related Equipment](#)
 - EIS contract [Section B.2.11 Service Related Labor](#)
- Please refer to a contractor's individual EIS contract for specifics on the contractor's IPS offerings.
- For additional EIS information and tools, visit the [EIS Resources Listing](#).
- For guidance on transitioning to EIS, please visit [EIS Transition Training](#) where you'll find several brief video training modules.