

VOLUME 1, SECTION 4.3: COLLOCATED HOSTING SERVICES



4.3 COLLOCATED HOSTING SERVICES (CHS) [C.2.4.3, M.6.1 (B)]

The Level 3 Team’s Collocated Hosting Services (CHS) will provide Government agencies with a secure space to host their web service and other data center equipment. Our CHS service meets or exceeds the requirements as defined in RFP Section C.2.4.3.

Level 3 is one of the largest collocation providers in the world, with [REDACTED]
[REDACTED] Our collocation offering provides state-of-the-art data center service for secure and reliable collocation space in North America. Our facilities provide [REDACTED]
[REDACTED]
[REDACTED]

Our CHS provides the Government with the freedom to connect both to Level 3’s premier network and the networks of other providers in our facilities.

[REDACTED]

[REDACTED]

The Level 3 CHS contributes to the Government's objectives for the Network Enterprise Program:

- 1. Highly competitive prices:** Level 3 has one of the largest collocation footprints in the industry. Because of the economy of scale, Level 3 can provide collocation service at very competitive prices. At the same time, we retain the flexibility to create custom collocation solutions as the Government may require.
- 2. High Quality Service:** Level 3 built its own data centers to the same exacting standards of reliability and availability. This allows Level 3 to deliver the highest quality collocation services regardless of location and size of customer.
- 3. Alternative Sources:** Level 3's data centers operate in a "carrier neutral" environment. As such, Level 3 does not require IPS (or any other network service) be purchased from our CHS customers. While Level 3 will encourage our CHS customers to utilize Level 3's industry-leading IP network for Internet access, we recognize that the Government may, at times, need to procure services from alternative sources. Level 3 fully supports and enables the Government connecting to alternate providers within a Level 3 facility.
- 4. Technical Support:** The Level 3 technical service provides the Government with world class field personnel to meet key hands-on maintenance requirements. This reduces costs borne by the Government by leveraging Level 3's internal staff. It also allows the Government to gain access to the same resources who maintain our network, and it ensures 24x7 coverage.

This section provides Level 3's response to RFP Section L.34.1.5.4.

4.3.1 Stipulated Responses to Table J.9.1.1.2 (b)

In accordance with Networkx Enterprise RFP Amendment 0005, Level 3's responses to the requirements in Table J.9.1.1.2 (b) Technical Stipulated Requirements for Optional IP-Based Services have been submitted to GSA via the Networkx Hosting Center.

4.3.2 Narrative Responses to Table J.9.1.1.3 (b)

In accordance with Networkx Enterprise RFP Amendment 0005, Level 3's responses to the requirements in Table J.9.1.1.3 (b) Technical Narrative Requirements for Optional IP-Based Services have been submitted to GSA via the Networkx Hosting Center.

4.3.3 Service Requirements

The Level 3 Collocated Hosting Service fulfills the mandatory service requirements for CHS contained in RFP Section C.2.4.3.1. This section demonstrates our capabilities in the following areas:

- Standards
- Connectivity
- Technical Capabilities
- Features
- Interfaces

4.3.3.1 STANDARDS [C.4.3.1.2]

The Level 3 CHS complies with the required standards defined in Section C.2.4.3.1.2. Level 3 is an active member of a variety of industry forums and working groups and is committed to implementing future standards as technologies are developed and standards are defined and become commercially available.

4.3.3.2 CONNECTIVITY [C.2.4.3.1.3]

Internet Connectivity at each IDC is available through Level 3's IPS offering as described in Section 3.2, Internet Protocol Service (IPS).

4.3.3.3 TECHNICAL CAPABILITIES [C.2.4.3.1.4]

Our CHS solution complies with the mandatory requirements listed in RFP Section C.2.4.3.1.4. Details are provided below.

4.3.3.3.1 Basic Storage Space

Level 3 will provide agencies with basic storage space, accessible to authorized agency personnel 24x7, [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

A variety of space options is available to the Federal Government, from standard cabinets and cages to customized suites. Level 3 will work with Federal agencies to develop a collocation solution that will meet applicable price, space, power, connectivity and privacy requirements.

Cabinets:

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]



[Redacted text block]

Private Suites:

The Level 3 private suites offer the ability to tailor space to meet specific technical and security requirements. [Redacted]

[Redacted text block]



[Redacted text block containing multiple lines of blacked-out content]

4.3.3.3.2 Security (Building and Facilities)

Level 3 will maintain security on a [redacted] basis. A description of the security methods and procedures included in our collocation offering follows.

[Redacted text block containing multiple lines of blacked-out content]



[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text line]

Cage/Cabinet Environment:

[Redacted]

Capability to Detect and Respond to Unauthorized Access to the Facility:

[Redacted]

[Redacted]

[REDACTED]

4.3.3.3.3 Network Connectivity and Bandwidth

The Level 3 collocation facilities support direct Internet connectivity using our IPS. IPS is described in detail in Section 3.1, Internet Protocol Service.

Redundancy:

The Level 3 collocation facilities are IP-enabled and docked to our Tier 1 backbone, [REDACTED]

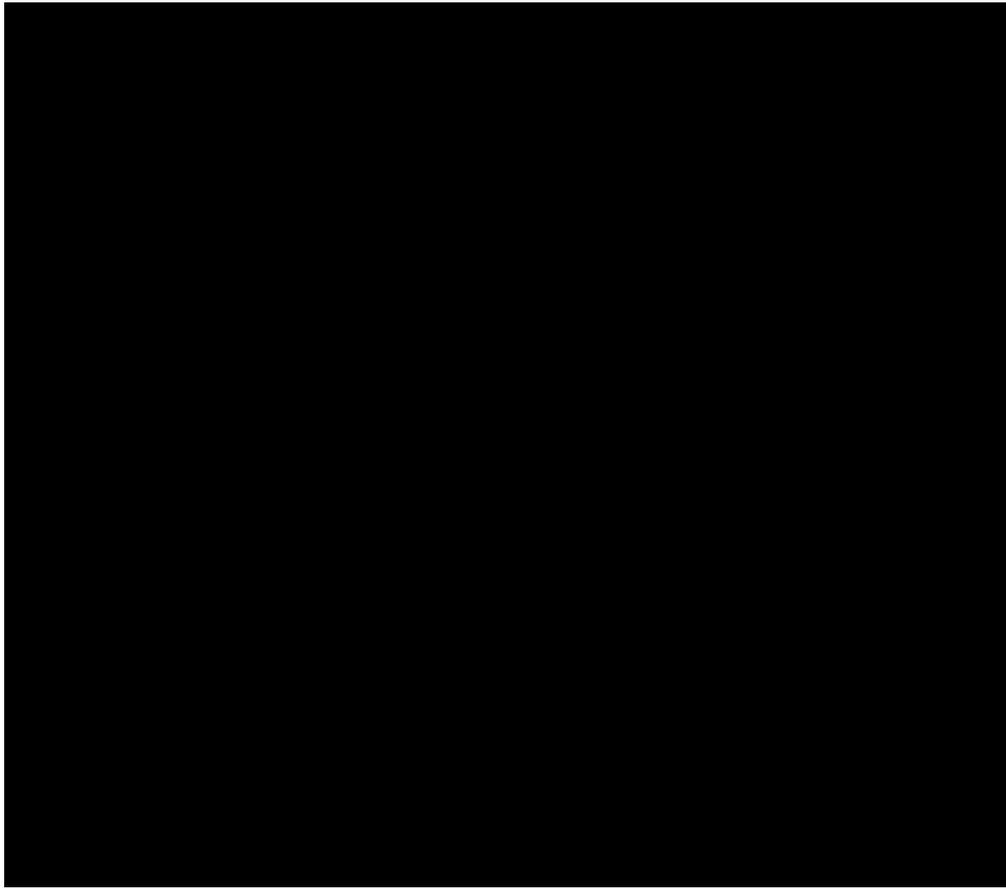
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



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[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

Redundancy is engineered in the network architecture to ensure continued service in the event of a network failure.

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

Burstable Bandwidth:

Level 3 will provide burstable bandwidth, as needed by an agency.

Available Internet bandwidth will scale in [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Key indicators of high performance for which the Level 3 IP network is engineered include:

- **Robust peering with other Tier 1 ISPs:** Government agencies in our collocation facilities are able to take advantage of Level 3’s extensive network as well as our multiple peering relationships. Level 3 is a Tier 1 provider in North America, meaning that we have settlement-free interconnections with other Tier 1 providers. [REDACTED]
[REDACTED]
[REDACTED] We have more than [REDACTED] and growing of peering capacity and [REDACTED] active peering sessions in [REDACTED] locations. With such a large peering network, the number of hops is minimized, and quality is maintained. Level 3 maintains strict policies with respect to our peering arrangements that provides for the highest performance and reliability. Please see Section 2.2.2 for an in-depth discussion of Level 3’s peering arrangements.

- **Minimal latency:** The ability to move information quickly through a network results in better performance and a better experience for an agency. Level 3's IP network consistently outperforms other providers' networks in on-net latency comparisons. [REDACTED]

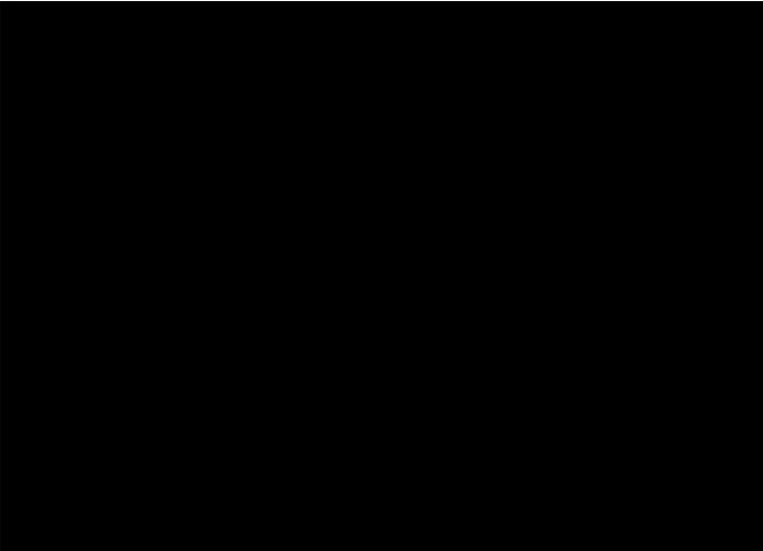
[REDACTED]

- **Fewest possible AS Hops:** [REDACTED]

Level 3's network has been architected to reach any Internet destination in as few hops as possible. Level 3 customers reach global Internet destinations

in an average of [REDACTED]

As a result, an agency user has a better and faster experience on the Level 3 Network than with any other provider.



[REDACTED]

Internet Connectivity in a Neutral Business Environment:

[REDACTED]

[REDACTED] This simultaneously fulfills both networking and collocation requirements. Agencies will have the freedom to choose any carrier, and all the benefits that come with having a Tier 1 network integrally docked at the doorstep of their collocation space. Level 3 gives agencies the freedom to network on their terms, not ours.

While Level 3 expects that our customers will often leverage our IP network, we understand that at times unique needs may call for the services of another telecommunications company. As noted previously, Level 3 is “carrier neutral,” meaning that our customers are free to use whatever carrier best meets their needs. Gateways offer connectivity to an average of eight alternative telecommunications providers.

Additional Service Options:

Because Level 3 Gateways form a critical part of the premier Level 3 Network, Federal agencies can easily add connectivity options to their collocation solution without looking to a separate provider. At our gateways, you can choose from a full suite of connectivity options including:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

[Redacted]

4.3.3.3.4 Power Systems

Power Options:

[Redacted]

Uninterruptible Power Sources:

[Redacted]

[Redacted]

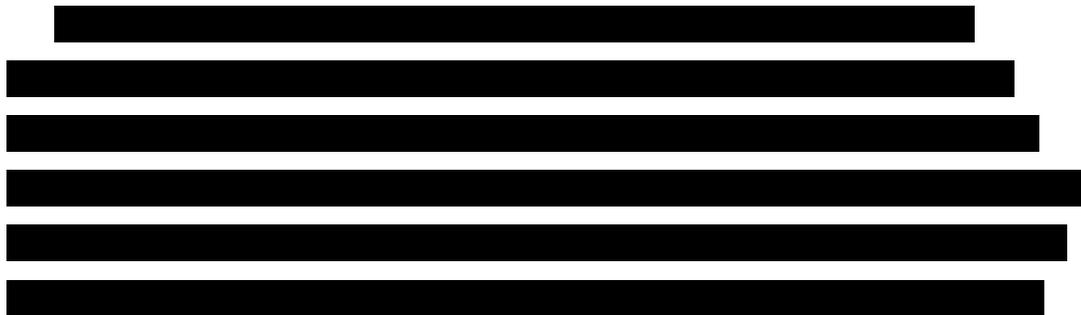
[Redacted]



DC Systems:



Automatic Transfer Switches:



[REDACTED]

Facility Lighting and Other Non-Critical Level 3 Equipment:

Battery back up for emergency lighting is provided on approximately [REDACTED], according to building code. [REDACTED]

[REDACTED] Once the generator starts, all lights and non-critical equipment in the facility regain power and become fully operational.

Power to the Cabinet:

Level 3 will support a variety of different power configurations based on an agency's requirements. In compliance with the RFP Section C.2.4.3.1.4, by default, [REDACTED]

Dual Power Circuits:

Agencies can request redundant or diverse power feeds. [REDACTED]

4.3.3.3.5 Fire Suppression and Detection

[REDACTED]



[Redacted text block]

4.3.3.3.6 Cooling Systems

[Redacted text block]



[REDACTED]

4.3.3.4 FEATURES [C.4.3.2.1]

The Level 3 CHS complies with all the features requirements listed in RFP Section C.2.4.3.2.1. Details follow.

4.3.3.4.1 Analog Line

[REDACTED]

4.3.3.4.2 Cabinets/Cages

[REDACTED]

4.3.3.4.3 Host Administrative Tasks

The Level 3 CHS offering includes staff to handle minor or unscheduled technical support tasks, including, but not limited to:

[REDACTED]

4.3.3.4.4 Reporting

[REDACTED]

4.3.3.4.5 Seismic Bracing

[REDACTED]

Level 3 complies with OSHA standards in all facilities.

4.3.3.4.6 Storage Media Change

The Level 3 IDC staff will change perform tape swaps for an agency's collocated storage drive on a mutually agreed upon schedule.

4.3.3.5 INTERFACES

[REDACTED]

[REDACTED] IPS provides dedicated access to the public Internet via the Level 3 [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

4.3.4 Required Performance Metrics [C.4.3.4]

[REDACTED]

[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]

4.3.4.1 AVAILABILITY – INTERNET CONNECTION

[REDACTED]

[REDACTED]

4.3.4.2 AVAILABILITY – SITE POWER

Level 3 guarantees 100% power availability for our CHS service.

4.3.4.3 TIME TO RESTORE

[REDACTED]

4.3.5 Proposed Service Enhancements

Level 3 does not propose AQLs that exceed the AQLs in the KPIs at this time but would like to reserve the ability to do so with performance improvements that may be attained through the introduction of new technology. Level 3 believes in continuous improvement and will always strive to provide the highest quality, available services.

4.3.6 Experience Delivering CHS

Networx and its subscribing agencies can take advantage of Level 3 as one of the top CHS providers in the US, and as the largest nationwide network provider of carrier-neutral collocation.

The experience listed below demonstrates our ability to help our customers succeed by providing them world-class hosted collocation services.

- Level 3 is one of the largest collocation providers in the world.
We operate:



[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

4.3.7 Verification of Individual Services

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

Measurements specific to Internet Connectivity are described below.



4.3.7.1.1 NETWORK LATENCY (DELAY SERVICE LEVEL)

[Redacted text block]

4.3.7.1.2 NETWORK PACKET LOSS (PACKET DELIVERY SERVICE LEVEL)

[Redacted text block]

4.3.8 Impact on Network Architecture

Level 3 has been offering collocation services to customers from the inception of our network. CHS is a core competency of Level 3 and we are pleased to be able to offer CHS as a standard, commercially-available offering that is an integral part of our network design. No new architectural components are required to support this optional service and, thus, there will be no adverse impact to our network design.

4.3.9 NS/EP Functional Requirement

This requirement is not applicable to CHS, per Section C.5.2.2.1 of the RFP.

4.3.10 National Capital Region Service

Section 2.5.4 of this proposal volume discusses in detail how the network architecture will satisfy the requirements in RFP Section C.5.2.7 for all of Level 3's proposed services.

4.3.11 Meeting Section 508 Provisions

This requirement is not applicable to CHS, per Section C.6.4 of the RFP.

4.3.12 Infrastructure Enhancements and Emerging Services

A detailed response to this requirement is provided in Section 3.4.11 of this proposal volume.