


## 5.8 COLLOCATED HOSTING SERVICES (CHS)

**Qwest's Networx Collocated Hosting Service (CHS) provides the groundwork solution for the fundamental elements of Agency hosting: space, power and connectivity.**

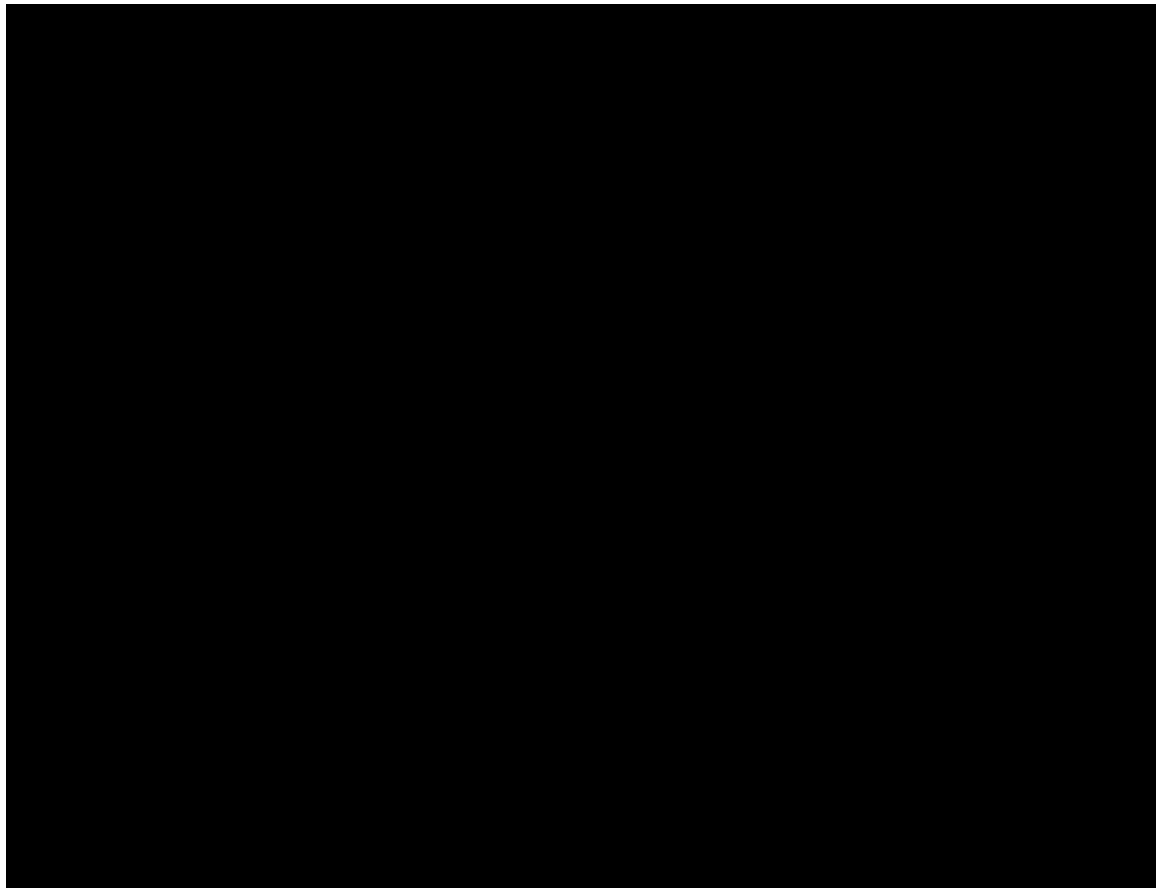
Qwest will deliver an award-winning suite of robust hosting solutions to Agencies through Qwest CyberCenters and the Qwest Optical Carrier Level 192 (OC-192) Internet Protocol (IP) backbone. Qwest CyberCenter facilities have some of the industry's most advanced procedures for monitoring, diagnosing and resolving network, operation, system and application problems before they start. Qwest CyberCenters are connected directly to Qwest's high-speed national IP network and provide 24x7x365 security, availability, and on-site network management.

**Figure 5.8-1** provides an easy reference to correlate narrative requirements to our proposal response.

 illustrates Qwest Core MultiProtocol Label Switching (MPLS) Backbone throughout the United States.

**Figure 5.8-1. Responses to Narrative Mandatory Service Requirements**

Req_ID	RFP Section	RFP Requirement	Proposal Response
2001	C.2.4.3.1.4	Security (Building and Facilities): The contractor shall describe the offered security methods and procedures.	5.8.1.1.1
1994	C.2.4.3.1.4	Network Connectivity and Bandwidth; The contractor shall describe its Internet infrastructure (e.g., Tier-1 backbone connectivity) – or business relationships with other Network Service Providers – that ensure minimal latency, fewest possible Autonomous System hops, et cetera.	5.8.1.1.2



### **5.8.1 Technical Approach to Collocated Hosting Services Delivery (L.34.1.5.1)**

CHS consists of space, environment, power and bandwidth. This service includes periodic hardware check (Ping) with email notification of any unresponsive device that could indicate problems in connectivity, power and/or device availability. The CHS is available in both racks and cages.

Facility components offered with CHS include:

- Security Features
- Physical security
- Secure Customer Entry
- Restricted Server Access
- Fire Suppression
- Space Features
- 24x7 Customer Support
- Cage space
- Rack space
- Power Features (with HVAC)
- Bandwidth Features
- Installation Service

In addition to physical space, Agencies will receive standard 24x7x365 call management with escalation for Agency-initiated requests.

By using a proven Statement on Auditing Standards (SAS) 70-certified process, Qwest is able to readily provide Agencies their customized CHS services. The CHS services are offered in Qwest CyberCenters. Qwest CyberCenters are specially designed to provide state-of-the-art hosting for mission-critical applications and services. Qwest CyberCenters have the following characteristics which provide a secure, scalable and reliable foundation for success, as reflected in [REDACTED]

Feature		Description
[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]

#### 5.8.1.1 Approach Collocated Hosting Service Delivery (L34.1.5.1(a))

**Qwest's CHS Service Delivery Process:** Qwest initiates the delivery process by assigning a dedicated Sales Engineer (SE) to respond to Agency requests for CHS. The Qwest SE will meet and work with the Agency's IT and telecommunications engineers to identify the detailed technical requirements of the CHS deliverable. With CHS requirements accepted by an Agency, the SE will develop a detailed delivery and implementation plan, including a design document, a site plan and an implementation schedule. Qwest will present this plan with the included data and information in the format requested by the Agency for validation. Plan scope and coverage can vary depending upon the Agency's needs and the complexity of the deliverable.

Category	Percentage
Category 1	~15%
Category 2	~85%
Category 3	~95%
Category 4	~85%
Category 5	~65%
Category 6	~85%
Category 7	~15%
Category 8	~95%
Category 9	~25%
Category 10	~100%
Category 11	~35%
Category 12	~75%
Category 13	~45%
Category 14	~90%
Category 15	~60%
Category 16	~85%



[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

**5.8.1.1.1 Security - Building and Facilities (Req\_ID 2001; C.2.4.3.1.4)**

The CyberCenter facilities meet industry standards for physical security such as DITSCAP. [REDACTED]

[REDACTED]

[REDACTED]

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

Every building is evaluated and physical and electronic security measures are taken to reduce vulnerability to penetration by unauthorized intruders. Extensive measures have been taken to use building materials and techniques to reduce vulnerability. To help ensure continuous power supply, emphasis has been placed on the protection of generators and cooling equipment placed outside the building, using a combination of fencing, lights, sensors on openings, and cameras.

[REDACTED]

#### **5.8.1.1.2 Network Connectivity and Bandwidth (Req ID 1994; C.2.4.3.1.4)**

[REDACTED]



[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

#### 5.8.1.2. Benefits of Collocated Hosting Service Technical Approach (L34.1.5.1(b))

With client equipment hosted in a Qwest facility, Agencies can be ensured that their hosted environment will always be secured and available. **Figure 5.8.1-2** shows the benefits of Qwest's CHS solution. **Figure 5.8.1-3** illustrates how Qwest's CHS approach achieves the Federal Enterprise Architecture (FEA) objectives.

**Figure 5.8.1-2. Benefits of Qwest's CHS Solution**

Feature	Benefit	Substantiation
Dedicated Support Team	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

As shown in Figure 5.8.1-3, Qwest's CHS supports the Federal Enterprise Architecture (FEA) Objectives. Qwest's CHS supports the FEA Objectives by providing cost effective connectivity using standardized, replicable solutions for IT infrastructure to connect applications, Agency employees and citizens.

**Figure 5.8.1-3. Qwest's CHS Solutions Meets the FEA Objectives**

Core FEA Objective	QWEST Team Approach to Achieving FEA Objective
Improve use of Government information resources to focus on core agency mission and service delivery to citizens by using the FEA	Qwest's Contractor Program Office (CPO) will integrate the FEA with existing policy and budget practices to ensure results-oriented, market-driven investment decisions. This will be evidenced by higher service performance metrics.
Enhance cost savings and avoidance	Qwest's CPO, in collaboration with Agencies, will use the FEA to support cross-Agency initiatives, leverage technology, and reduce redundancy where overlap limits the value of IT investments.
Increase cross-agency and inter-Government collaboration	Qwest's CPO will continue to advance the Office of Management and Budget (OMB) Office of E-Gov and IT mission of collaboratively facilitating horizontal (cross-Federal) and vertical (Federal, State and local) integration of information resources. Partner input and participation is actively sought and welcomed.

Agencies benefit from a proven SAS 70 certified process. This comprehensive process ensures that implemented CHS configurations fulfill Agency functional requirements and perform to AQLs.

#### **5.8.1.3 Solutions to Collocated Hosting Service Problems (L34.1.5.1(c))**

Potential problems associated with meeting CHS service requirements and deliverables include facilities limitations that prevent customization, server hardware and maintenance, lead times on needed materials, overall installation complexity, or planning for and working from un-validated requirements. With substantial experience and success in on-time deliveries of numerous Government and commercial CHS installations, Qwest is adept

at recognizing developing problems such as those cited above and implementing measures to minimize impact on delivery schedules or costs.

Potential Issue	Proposed Resolution
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]

### 5.8.2 Satisfaction of Collocated Hosting Service Performance Requirements (L34.1.5.2)





CHS meets KPIs/AQLs for power availability, Internet connectivity, maintenance of temperature/humidity standards, and installation time. CHS processes, procedures, tools, and methodologies have been tested and improved [REDACTED] Implemented by the many Qwest systems management experts who support the management of operating systems, applications, and databases, these processes will ensure Agencies that their hosted environments are available whenever needed.

At the heart of our CHS offering are the Qwest data centers. These are state-of-the-art facilities built to rigorous standards and designed to withstand hazards common to the region of the country, such as hurricanes and earthquakes. Qwest maintains a CyberCentral enterprise support operations facility featuring the most current 24x7x365 network control and proactive monitoring capabilities. System application and network professionals are on duty to interactively manage the Agency environment.


### 5.8.2.1 Collocated Hosting Service Quality of Service (L34.1.5.2(a))

**Figure 5.8.2-1** shows the AQLs that Qwest meets and that are listed as performance metrics in C.2.4.3.4.1.

**Figure 5.8.2-1 Qwest Meets the Network Performance Metrics**

Key Performance Indicator (KPI)	Service Level	Performance Standard (Threshold)	Acceptable Quality Level (AQL)	Qwest Performance Metrics
Availability (Internet Connection)	All	99.99 %	≥ 99.99 %	
Availability (Site Power)	Routine	100%	100 %	
Time to Restore (TTR)	Without Dispatch	4 hours	≤ 4 hours	
	With Dispatch	8 hours	≤ 8 hours	

Qwest addresses each as follows:








**Availability – Power:** Qwest maintains N+1 redundancy on our power systems. This includes all components in the power distribution process: UPS, generators, power distribution units (PDUs), and utility power feeds; these resources will be available to the Agencies.

**Time to Restore:** Qwest has processes and procedures in place to ensure that the time to restore from a power or Internet connectivity outage will be less than the four-hour goal stipulated in RFP C.2.4.3.4.1; this benefit and associated resources will be available to Agencies.

### 5.8.2.2 Approach for Monitoring and Measuring Collocated Hosting Service (L34.1.5.2(b))

Qwest will ensure that all tools, systems (ticketing, ordering, change management), and portals supporting Government requirements are maintained at or above industry standards. Qwest uses multiple tools to monitor environments, including [REDACTED]

[REDACTED] These systems are monitored by Qwest personnel in our CyberCentral facility in Denver, CO and locally within the Data Center. With staff on-site 24x7x365, and emergency contracts with subcontractors, Qwest is able to provide Agencies with the stated service levels.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Based upon the concept of Agency “choice-driven solutions,” Qwest will put the Agency in the driver’s seat by assembling the best solution to meet their needs. Utilizing Managed Service Building Blocks (blocks represent every one of Qwest’s functional capabilities) our Project Engineers assemble hardened, reliable, technically superior solutions uniquely catered to Customer needs.

Every Networkx CHS solution will provide the Agency with full visibility into operational and management data as shown in [REDACTED] Every

time an instance of operating system, application or database monitoring or management is ordered, Agencies will also receive access to the Hosting Monitoring portal through the Qwest Control Networx Portal for real-time viewing of their hosted environment.

Monitoring Categories	Monitoring Services	Management Services

The Qwest Control Networx Portal provides five standard reports specific to the applications and databases present on the server. [REDACTED]

[REDACTED] Charts for CPU, Memory, Disk, and File System utilization are included for the monitored servers. For each OS and specific monitored application or database, an additional tab is provided that shows CPU and Memory utilization for critical processes.

The description in the Monitoring Sections to follow for each Operating System, Application, and Database lists the metrics monitored, [REDACTED]

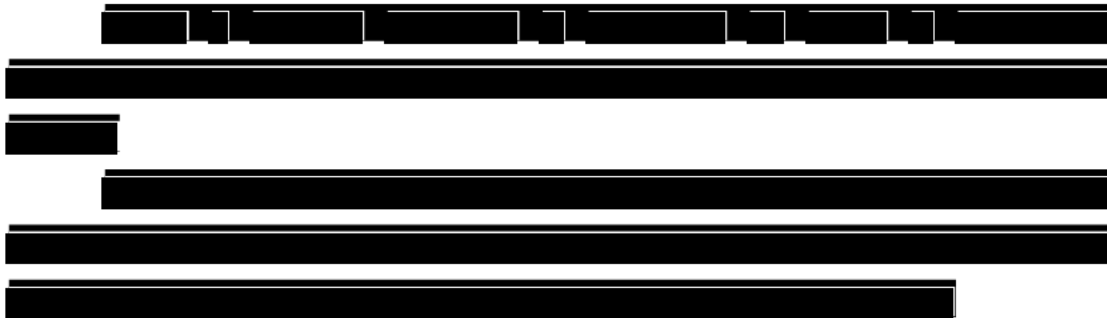
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

The following describes how CHS faults are detected and communicated to an Agency:


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

[illegible]

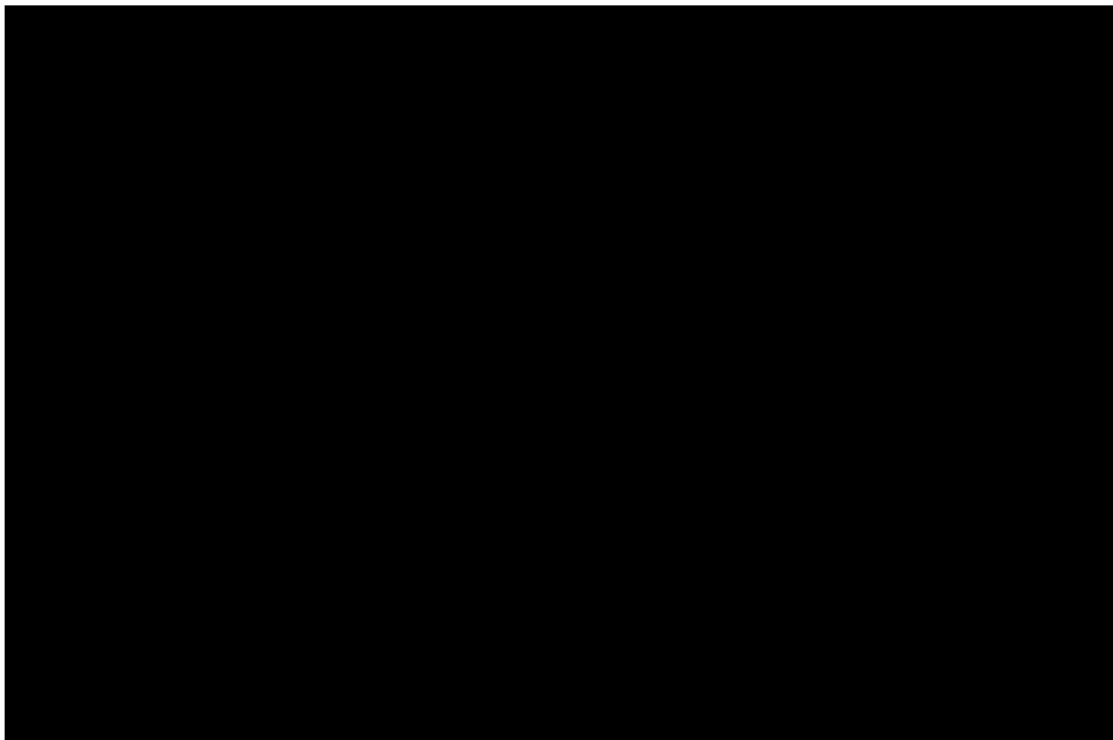




### **5.8.2.3 Verification of Collocated Hosting Service (L34.1.5.2(c))**

DHS performance integrity will be verified through our online Qwest Control Networx Portal, as shown in 

Through the SAS-70 annual certification process, numerous systems and software controls were inspected to provide reasonable assurance that changes to existing system software and hardware, and implementation of new system software and hardware, are authorized, tested, approved, properly implemented, and documented.



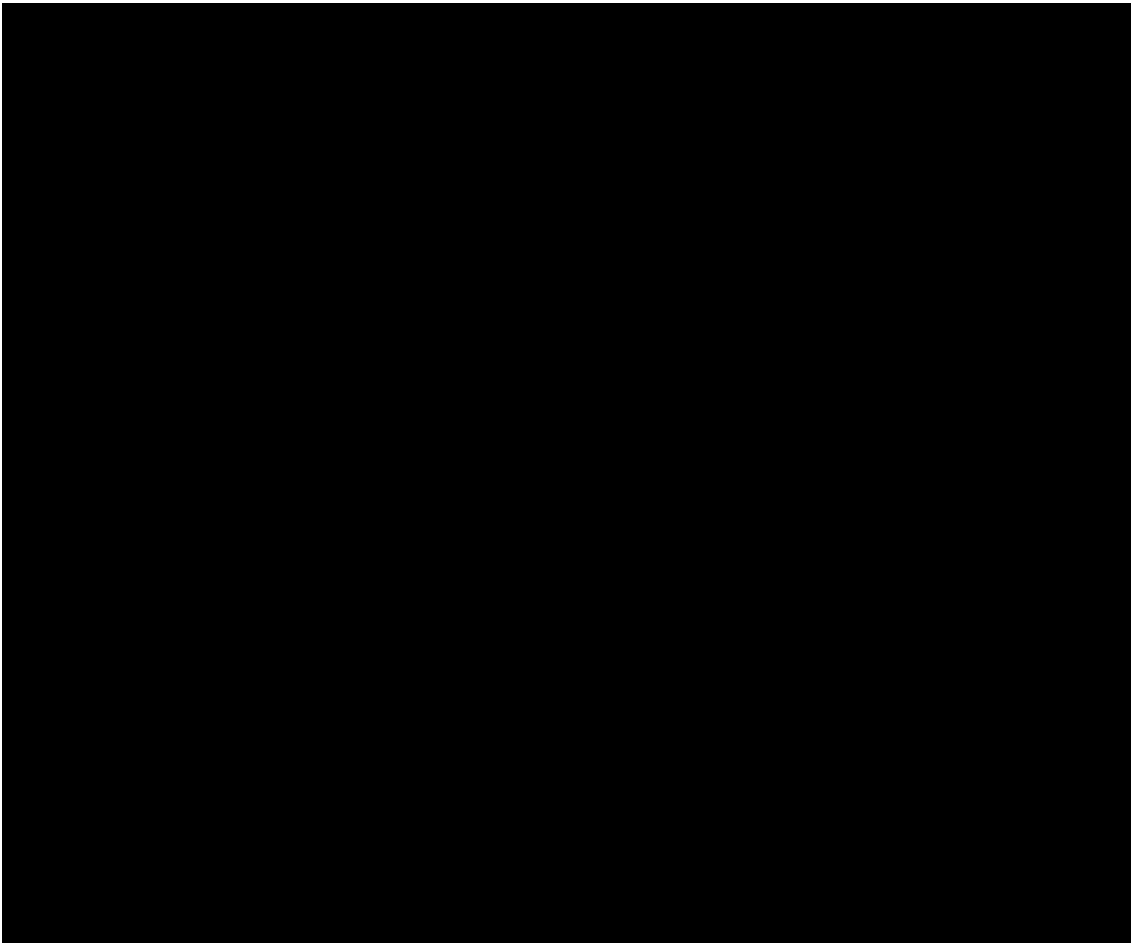


[illegible]

Qwest proposes to meet all KPIs and AQLs for CHS. In the event an Agency has a specific business need or application problem, Qwest is willing to discuss service enhancements. Qwest will operate in good faith to engineer a CHS solution to serve unique Agency needs. Qwest is able to

#### 5.8.2.5 Additional Collocated Hosting Service Performance Metrics (L34.1.5.2(e))

[illegible]




### **5.8.3 Satisfaction of Collocated Hosting Service Specifications (L.34.1.5.3)**

Qwest methodically uses technical account management, senior-level technicians, and certified processes to provide 24x7x365 customer-centric managed services in a Qwest CyberCenter facility. The CyberCenters offer a modern, leading-edge, clean, and highly-managed CHS and telecommunications environment. The centers are constructed with N+1 critical systems redundancy, heating, ventilation, air conditioning, and electrical power. Fire protection and complete systems monitoring provide the Qwest CyberCenter with total environmental security and the highest levels of availability.

### **5.8.3.1 Satisfaction of Collocated Hosting Service Requirements**


#### **(L34.1.5.3(a))**



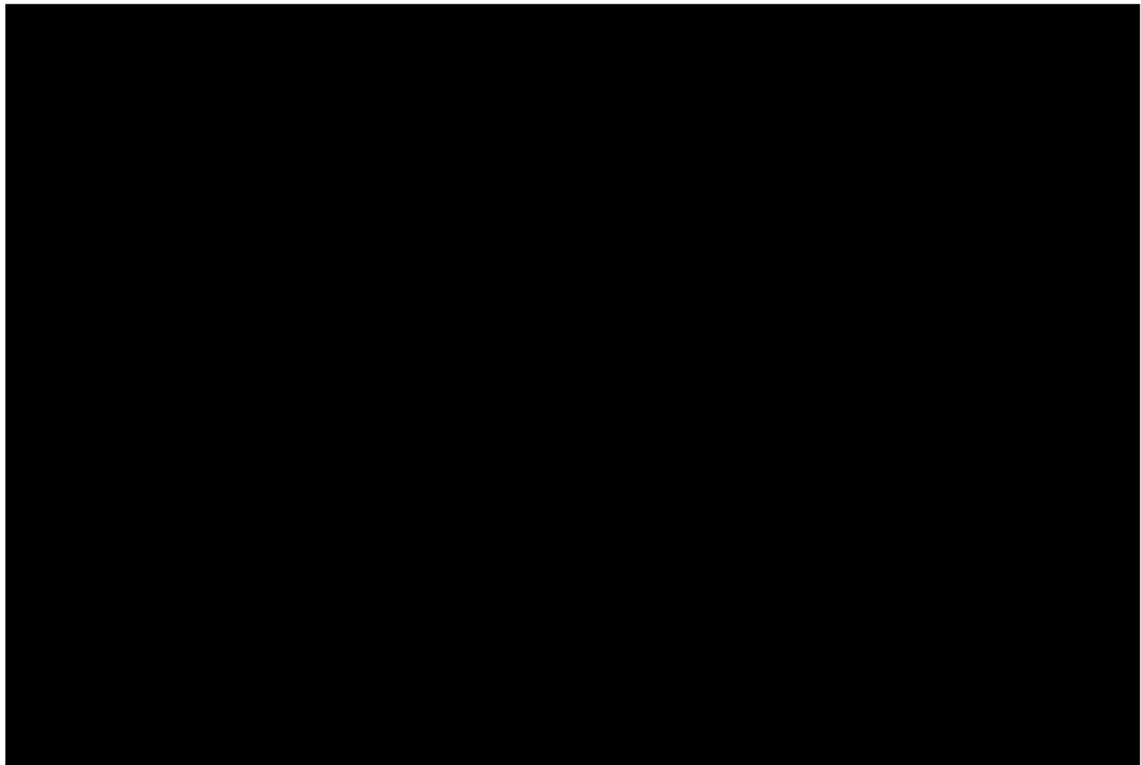
 illustrates how Qwest meets the Networkx service requirements. Collocated hosting service provides the groundwork solution for dedicated hosting and offers the fundamental elements of space, power and connectivity. This service also includes 24x7x365 call management and escalation procedures. Qwest fully complies with all mandatory stipulated and narrative features, capabilities, and interface requirements for CHS. The text in the following sections

and table is intended to provide the technical description required per L.34.1.5.3(a) and does not limit or caveat Qwest's compliance in any way.

#### **5.8.3.1.1 Satisfaction of CHS Capabilities Requirements (L34.1.5.3(a), C.2.3.1.1.4)**

As shown in  Qwest's CHS provides the groundwork solution for customer hosting needs and is offered as three fundamental elements: space, power, and connectivity. This service also includes 24x7x365 call management and escalation procedures. Qwest CHS is available in a wide range of physical configurations, including cages or quarter, half, and full-rack configurations.





Internet Connectivity Benefiting CHS: [REDACTED]

[REDACTED] We maintain peering agreements with all major national Internet service providers to exchange traffic [REDACTED]

[REDACTED]

[REDACTED] making us one of the world's largest international Internet backbone providers. Our high performance Internet connectivity ensures a superior user experience for our worldwide audience.

Qwest's network is the most rigorously engineered in the world. Implemented as a fully redundant, fully meshed backbone consisting exclusively of multi-megabit links, the network forms a redundant and diverse lattice specifically designed to route traffic at optimum performance levels.

[illegible][illegible]

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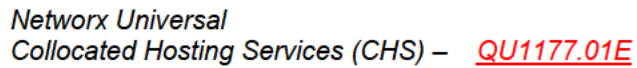
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[illegible][illegible]

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	Operating System Only	Tier 1	Tier 2	Tier 3
Operating System Only	Operating System Only	Operating System Only	Operating System Only	Operating System Only
Tier 1	Tier 1	Tier 1	Tier 1	Tier 1
Tier 2	Tier 2	Tier 2	Tier 2	Tier 2
Tier 3	Tier 3	Tier 3	Tier 3	Tier 3

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#### **5.8.3.5 Network Modifications Required for Collocated Hosting Service Delivery (L.34.1.5.3(c))**

There are no network modifications necessary to install and implement our CHS services for compatibility and interoperability with in-place client network systems. The Qwest network has been architected to deliver optimal performance for customers. Additionally, Qwest CyberCenters have been built in accordance with applicable Institute of Electrical and Electronics Engineers standards and other applicable industry and international telecommunications standards.

### **5.8.3.6 Experience with Collocated Hosting Service Delivery**

#### **(L.34.1.5.3(d))**

Qwest has been supplying CHS for more than five years to Government and commercial customers. Our current Government

[REDACTED]

[REDACTED] These Qwest hosting customers use the complete range of Qwest hosting services, from simple collocation to fully managed environments.

[REDACTED]

[REDACTED]

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