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November 4, 2020

TO: Executive Departments/Agencies
Department of Education
Hawaii Health Systems Corporation
Office of Hawaiian Affairs
University of Hawaii
Public Charter School Commission
and Schools
House of Representatives
Senate
Judiciary

City and County of Honolulu
Honolulu City Council
Honolulu Board of Water Supply
Honolulu Authority for Rapid Transportation
County of Hawaii
Hawaii County Council
County of Hawaii-Department of Water Supply
County of Maui
Maui County Council
County of Maui-Department of Water Supply
County of Kauai
Kauai County Council
County of Kauai – Department of Water

FROM: for Sarah Allen, Administrator *Bonnie A. Kahakui*

SUBJECT: **Change No. 6**
SPO Price List Contract No. 20-11
NASPO VALUEPOINT DATA COMMUNICATIONS PRODUCTS & SERVICES
NASPO VALUEPOINT Solicitation No. SK18001
Expires: October 1, 2024

The following changes are made to the price list contract:

- Add Juniper Networks (US) Inc as an authorized contractor. Update the Contractor Awarded by Category.
- Add a vendor information page for Juniper Networks (US) Inc.

The current price list contract incorporating Change No. 6 is available on the SPO website: <http://spo.hawaii.gov>. Click on *Price & Vendor List Contracts* on the home page.

If you have any questions, please contact Matthew Chow at (808) 586-0577 or matthew.m.chow@hawaii.gov.

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**STATE OF HAWAII
STATE PROCUREMENT OFFICE**

SPO Price List Contract No. 20-11
Replaces SPO Price List Contract No. 15-04
Includes Change No. 6
Effective 11/04/2020

THIS SPO PRICE/VENDOR LIST CONTRACT IS FOR AUTHORIZED BUSINESS ONLY

**NASPO VALUEPOINT
DATA COMMUNICATIONS PRODUCTS & SERVICES - STATEWIDE**
(NASPO VALUEPOINT RFP SK18001)
February 10, 2020 to October 1, 2024

INFORMATION ON NASPO VALUEPOINT

The NASPO ValuePoint Cooperative Purchasing Organization is a multi-state contracting consortium of state governments, including local governments, of which the State of Hawaii is a member. NASPO ValuePoint Purchasing Organization seeks to achieve price discounts by combining the requirements of multi-state governmental agencies, and cost-effective and efficient acquisition of quality products and services.

The State of Utah is the current lead agency and contract administrator for the NASPO ValuePoint Data Communications Product & Services contract. A request for competitive sealed proposals was issued on behalf of NASPO ValuePoint Cooperative Purchasing Organization and contracts were awarded to nine (9) qualified Contractors. The State of Hawaii has signed a Participating Addendum with five (5) Contractors and intends to sign with the remaining four (4) Contractors.

This contract offers data communication products and services in five categories. They are Unified Communications, Networking, Routers, Switches, Security and Storage Networking, Wireless and Facility Management, Monitoring and Control.

For additional information on this contract, visit the NASPO ValuePoint website at <https://www.naspovaluepoint.org/portfolio/data-communications-2019-2026/>.



PARTICIPATING JURISDICTIONS listed below have signed a cooperative agreement with the SPO and are authorized to utilize this price list contract.

| | |
|--|---|
| Executive Departments/Agencies | City and County of Honolulu |
| Department of Education | Honolulu City Council |
| Hawaii Health Systems Corporation | Honolulu Board of Water Supply |
| Office of Hawaiian Affairs | Honolulu Authority for Rapid Transportation |
| University of Hawaii | County of Hawaii |
| Public Charter School Commission and Schools | Hawaii County Council |
| House of Representatives | County of Hawaii – Department of Water Supply |
| Senate | County of Maui |
| Judiciary | Maui County Council |
| | County of Maui – Department of Water Supply |
| | County of Kauai |
| | Kauai County Council |
| | County of Kauai – Department of Water |

The participating jurisdictions are not required but may purchase from this price list contract, and requests for exception from the contract are not required. Participating jurisdictions are allowed to purchase from other Vendors; however, HRS chapter 103D, and the procurement rules apply to purchases by using the applicable method of procurement and its procedures, such as small purchases or competitive sealed bidding. The decision to use this contract or to solicit pricing from other sources is at the discretion of the participating jurisdiction.

POINT OF CONTACT. Questions regarding the products listed, ordering, pricing and status should be directed to the Contractor(s).

Procurement questions or concerns may be directed as follows:

| Jurisdiction | Name | Telephone | Fax | E-mail |
|--|-------------------------|-----------|----------|--|
| Executive | Matthew Chow | 586-0577 | 586-0570 | matthew.m.chow@hawaii.gov |
| DOE | Procurement Staff | 675-0130 | 675-0133 | doeprocare@notes.k12.hi.us |
| HHSC | Joe Evanoff | 315-7449 | | jevanoff@hhsc.org |
| OHA | Phyllis Ono-Evangelista | 594-1833 | 594-1865 | phylliso@oha.org |
| UH | Karlee Hisashima | 956-8687 | 956-2093 | karlee@hawaii.edu |
| Public Charter School Commission and Schools | Danny Vasconcellos | 586-3775 | 586-3776 | danny.vasconcellos@spcsc.hawaii.gov |
| House | Brian Takeshita | 586-6423 | 586-6401 | takeshita@capitol.hawaii.gov |
| Senate | Carol Taniguchi | 586-6720 | 586-6719 | c.taniguchi@capitol.hawaii.gov |
| Judiciary | Tritia Cruz | 538-5805 | 538-5802 | tritia.l.cruz@courts.hawaii.gov |
| C&C of Honolulu | Procurement Specialist | 768-5535 | 768-3299 | bfprocurement@honolulu.gov |

| Jurisdiction | Name | Telephone | Fax | E-mail |
|--|---------------------------------------|----------------------|----------------------|--|
| Honolulu City Council | Kendall Amazaki, Jr. Nanette Saito | 768-5084 768-5085 | 768-5011 | kamazaki@honolulu.gov nsaito@honolulu.gov |
| Honolulu Board of Water Supply | Procurement Office | 748-5071 | | fn_procurement@hbws.org |
| HART | David Ha | 768-6294 | | dha@honolulu.gov |
| County of Hawaii | Diane Nakagawa | 961-8440 | 961-8248 | Diane.Nakagawa@hawaiicounty.gov |
| Hawaii County Council | Diane Nakagawa | 961-8440 | 961-8248 | Diane.Nakagawa@hawaiicounty.gov |
| County of Hawaii- Department of Water Supply | Ka'iulani L. Matsumoto | 961-8050 x224 | 961-8657 | kmatsumoto@hawaiidws.org |
| County of Maui | Greg King | 270-7830 | 249-0839 | greg.king@co.maui.hi.us |
| Maui County Council | Marlene Rebugio | 270-7838 | | marlene.rebugio@mauicounty.us |
| County of Maui- Department of Water Supply | Kenneth L. Bissen Holly Perdido | 270-7684 | 270-7136 | ken.bissen@co.maui.hi.us |
| County of Kauai | Ernest Barreira | 270-7684 | 270-7136 | holly.perdido@co.maui.hi.us |
| County of Kauai | Ernest Barreira | 241-4295 | 241-6349 | ebarreira@kauai.gov |
| Kauai County Council | Lisa Ishibashi Scott Sato | 241-4820 241-4810 | 241-6349 241-6349 | lishibashi@kauai.gov ssato@kauai.gov |
| County of Kauai- Department of Water | Marcelino Soliz | 245-5470 | 241-5813 | msoliz@kauaiwater.org |

USE OF PRICE & VENDOR LIST CONTRACTS BY NONPROFIT ORGANIZATIONS. Pursuant to HRS §103D-804, nonprofit organizations with current purchase of service contracts (HRS chapter 103F) have been invited to participate in the SPO price & vendor lists contracts.

A listing of these nonprofit organizations is available at the SPO website: <http://spo.hawaii.gov>. Click on *For Vendors > Non-Profits > Cooperative Purchasing Program > View the list of qualifying nonprofits eligible to participate in cooperative purchasing.*

If a nonprofit wishes to purchase from a SPO price or vendor list contract, the nonprofit must obtain approval from each Vendor, i.e., participation must be mutually agreed upon. A Vendor may choose to deny participation by a nonprofit. Provided, however, if a nonprofit and Vendor mutually agree to this arrangement, it is understood that the nonprofit will retain its right to purchase from other than a SPO price or vendor list Contractor(s).

VENDORS. The authorized Contractors are listed in this price list contract. They have signed a Master Agreement with the State of Utah and a Participating Addendum with the Hawaii State Procurement Office.

Hewlett Packard Enterprise Company
Palo Alto Networks, Inc

Cradlepoint, Inc.
Juniper Networks (US) Inc

NEC Corporation of America

VENDOR CODES for annotation on purchase orders are obtainable from the *Alphabetical Vendor Edit Table* available at your department's fiscal office. Agencies are cautioned that the remittance address on an invoice may be different from the address of the vendor code annotated on the purchase order.

COMPLIANCE PURSUANT TO HRS §103D-310(c). Prior to awarding this contract, the SPO verified compliance of the Vendor(s) named in the SPO Price List Contract No. 20-11. *No further compliance verification is required prior to issuing a contract, purchase order, or pCard payment when utilizing this contract.*

PURCHASING CARD (pCard). The State of Hawaii Purchasing Card (pCard) is required to be used by the Executive departments/agencies, excluding DOE, HHSC, OHA and UH for orders totaling less than \$2,500. For purchases of \$2,500 or more, agencies may use the pCard, subject to its credit limit, or issue a purchase order.

PURCHASE ORDERS may be issued for purchases \$2,500 or more, and for Vendors who either do not accept the pCard, set minimum order requirements before accepting the pCard for payment, or charge its customers a transaction fee for the usage.

SPO PL CONTRACT NO. 20-11 & NASPO VALUEPOINT MASTER AGREEMENT NUMBER (notated on the vendor information page) shall be typed on purchase orders issued against this price list contract. For pCard purchases, the SPO PL Contract No. 20-11 and the NASPO ValuePoint Master Agreement Number shall be notated on the appropriate transaction document. The Master Agreement Numbers can be found on the vendor information page.

STATE GENERAL EXCISE TAX (GET) AND COUNTY SURCHARGE shall not exceed the following rates if seller elects to pass on the charges to its customers.

| COUNTY | COUNTY SURCHARGE TAX RATE | STATE GET | MAX PASS-ON TAX RATE | EXPIRATION DATE OF SURCHARGE TAX RATE |
|--|---------------------------|-----------|----------------------|---------------------------------------|
| C&C OF HONOLULU | 0.50% | 4.0% | 4.7120% | 12/31/2030 |
| HAWAII | 0.50% | 4.0% | 4.7120% | 12/31/2030 |
| COUNTY OF MAUI (including Molokai and Lanai) | 0.0% | 4.0% | 4.1666% | No county surcharge |
| KAUAI | 0.50% | 4.0% | 4.7120% | 12/31/2030 |

The GET or use tax and county surcharge may be added to the invoice as a separate line item and shall not exceed the current max pass-on tax rate(s) for each island.

County surcharges on state general excise (GE) tax or Use tax may be visibly passed on but is not required. For more information on county surcharges and the max pass-on tax rate, please visit the Department of Taxation’s website at <http://tax.hawaii.gov/geninfo/countysurcharge>.

PAYMENTS are to be made to the Vendor(s) remittance address. HRS §103-10 provides that the State shall have thirty (30) calendar days after receipt of invoice or satisfactory completion of contract to make payment. Payments may also be made via pCard.

VENDOR AND PRODUCT EVALUATION form, SPO-012, for the purpose of addressing concerns on this price list contract, is available to agencies at the SPO website: <http://spo.hawaii.gov>. Click on *Forms* on the home page.

PRICE OR VENDOR LIST CONTRACT AVAILABLE ON THE INTERNET at the SPO website: <http://spo.hawaii.gov>. Click on *Price & Vendor List Contracts* on the home page.

DATA COMMUNICATIONS PRODUCTS & SERVICES CATEGORIES

Category 1.1: UNIFIED COMMUNICATIONS (UC)

A set of products that provides a consistent unified user interface and user experience across multiple devices and modes of communications. Unified Communications that is able to provide services such as session management, voice, video, messaging, mobility, and meeting solutions (i.e., web, audio, IM&P, file sharing, white boarding, guest support, etc.). It can provide the foundation for advanced unified communications capabilities of IM and presence-based services and extends telephony features and capabilities to packet telephony network devices such as IP phones, media processing devices, Voice over IP (VoIP) gateways, and multimedia applications. Additional services, such as unified messaging, multimedia conferencing, collaborative contact centers, and interactive multimedia response systems, are made possible through open telephony APIs. General UC solution capabilities should include:

- High Availability for Call Processing
- Hardware Platform High Availability
- Network Connectivity High Availability
- PSTN Access resiliency
- Call Processing Redundancy
- Optional Branch Office Survivability Services

1.1.1 IP Telephony — Solutions utilized to provide the delivery of the telephony application (for example, call setup and teardown, and telephony features) over IP, instead of using circuit-switched or other modalities. Capabilities should include:

- Support for analog, digital, and IP endpoints
- Centralized Management
- Enterprise Telephony Features (CFx, Transfer, CID, Shared line appearance, One Number Service, etc.)
- Provide basic hunt group and call queuing capabilities
- Flexibility to configure queue depth and hold time, play unique announcements and Music on Hold (MoH), log in and log out users from a queue and basic queue statistics (from the phone)
- E911 Support
 - National E911 Routing Services (proper PSAP routing when PSTN access is centralized)
 - 911 Device Tracking Services
 - 911 On-Site Notification Services

1.1.2 Instant messaging/ Presence — Solutions that allow communication over the Internet Protocol, within the enterprise, and remotely, as well as with guest users that offers quick transmission of text-based messages from sender to receiver. In push mode between two or more people using personal computers, Desktop (Windows/Mac/VDI/Linux), Mobile/Smartphone, Tablet, along with shared clients, instant messaging basically offers real-time direct written language-based online chat. Instant messaging may also provide video calling, file sharing, PC-

to-PC voice calling and PC-to-regular-phone calling.

- IM Persistency / Workstream Collab
- File Sharing Services, Desktop Sharing Services

1.1.3 Unified messaging — Integration of different electronic messaging and communications media (e-mail, SMS, Fax, voicemail, video messaging, etc.) technologies into a single interface, accessible from a variety of different devices.

- Ability to access and manage voice messages in a variety of ways, using email inbox, Web browser, desktop client, VoIP phone, or mobile phone
- Visual Voicemail Support (Optional)
- ASR / Transcription Services for recorded messages

1.1.4 Contact Center — A computer-based system that provides call and contact routing for high- volume telephony transactions, with specialist answering “agent” stations and a sophisticated real-time contact management system. The definition includes all contact center systems that provide inbound contact handling capabilities, outbound call/contact center and automatic contact distribution, combined with a high degree of sophistication in terms of dynamic contact traffic routing management.

1.1.5 Communications End Points and Applications

- Attendant Consoles (Telephone Station)
- IP Phones (desktop devices and accessories)
- Room Based Conferencing Endpoints (Conf Phones, SparkBoard, JamBoard, Surface Hub)

1.1.6 UC Network Monitoring — Provides end-to-end service management for Unified Communications. Capabilities include testing, performance monitoring, configuration management, accounting/billing, analytics (capacity planning), contact center specialized reports (utilization, queue KIs, call abandonment ratios, etc.), and business intelligence reporting.

1.1.7 Collaboration — Voice, video, workstream collaboration, and web conferencing; messaging; mobile applications; and enterprise social software. Doesn't include the audio visual software or hardware.

1.1.8 Collaborative Video — A set of immersive video technologies that enable people to feel or appear as if they were present in a location that they are not physically in. Immersive video consists of a multiple codec video system, where each meeting attendee uses an immersive video room to “dial in” and can see/talk to every other member on a screen (or screens) as if they were in the same room and provides call control that enables intelligent video bandwidth management.

1.1.9 Content Delivery Systems (CDS) — A large distributed system of servers deployed in multiple data centers connected by the Internet. The purpose of the content delivery system is to serve content to a very large number of end-users (i.e., quarterly all hands meetings/webinar) with high availability and high performance. CDSs serve content over the Internet, including web objects (text, graphics, URLs, and scripts), downloadable objects (media files, software, documents), applications (e-commerce, portals), live streaming media, on-demand streaming media, and social networks.

Category 1.2: NETWORKING

1.2.1 Network Application Services.

Application networking solutions and technologies that enable the successful and secure delivery of applications to local, remote, and branch-office users using technology to accelerate, secure, and increase availability of both application traffic and computing resources.

1.2.1.1 Virtualized Load Balancers — Virtual devices that act like a reverse proxy to distribute network and/or application traffic across multiple servers to improve the concurrent user capacity and overall reliability of applications. Capabilities should include:

- SSL (Secure Sockets Layer) Off-loading
- Caching capabilities
- Layer 4 Load Balancing
- Layer 7 Load Balancing
- Detailed Reporting
- Supports multiple load balancers in the same system for multiple groups
- Supports TLS1.2

1.2.1.2 WAN Optimization — An appliance utilizing a collection of techniques for increasing data-transfer efficiencies across wide-area networks (WAN). Capabilities should include:

- CIFS (Common Internet File System) acceleration
- Data Compression
- SSL encryption/decryption for acceleration (Optional)
- Layer 4-7 visibility
- Application Specific optimization
- Network analysis tools (solutions utilized to collect, classify, analyze, and securely store log messages).

1.2.2 Networking Software.

Software that runs on a server, or within the Cloud, and enables the server to manage data, users, groups, security, applications, and other networking functions. The network operating system is designed to allow transfer of data among multiple computers in a network, typically a local area network (LAN), a private network or to other networks. Networking software capabilities should include:

- Restartable Process
- High availability options
- Targeted operating systems, i.e. DC, campus, core, wan, etc.
- Operating System Efficiencies
- Network analysis tools (solutions utilized to collect, classify, analyze, and securely store log messages).

1.2.2.1 Network Management and Automation — Software products and solutions for network automation, cloud computing, and IT systems management.

1.2.2.2 Data Center Management and Automation — Software products and solutions that capture and automate manual tasks across servers, network, applications, and virtualized infrastructure.

1.2.2.3 Cloud Portal and Automation — Software products and solutions for cloud management with policy-based controls for provisioning virtual and physical resources.

1.2.2.4 Branch Office Management and Automation — Software products and solutions for management of branch offices. Capabilities include remote troubleshooting, device management, and WAN performance monitoring.

1.2.3 Network Optimization and Acceleration.

Devices and tools for increasing data-transfer efficiencies across wide-area networks.

1.2.3.1 Data Analytics — Appliance for improving network management by more effectively factoring in issues related to congestion, such as utilization, service consumption and routing. Provides real-time insights into network traffic to determine the value of different portions of that traffic.

1.2.3.2 Dynamic Load Balancing (Network Traffic Management) — An appliance that performs a series of checks and calculations to determine which server can best service each client request in order to select the server that can successfully fulfill the client request and do so in the shortest amount of time without overloading either the server or the server farm as a whole.

1.2.3.3 WAN Acceleration — Appliance that optimizes bandwidth to improve the end user's experience on a wide area network (WAN). Capabilities should include:

- CIFS acceleration
- Data Compression
- SSL encryption/decryption for acceleration (Optional)
- Layer 4-7 visibility
- Application Specific optimization

1.2.3.4 High Availability and Redundancy — Limits any disruption to network uptime should an appliance face unforeseen performance issues. Transparently redistributes workloads to surviving cluster appliances without impacting communication throughout the cluster.

1.2.4 Optical Networking.

High capacity networks based on optical technology and components that provide routing, grooming, and restoration at the wavelength level as well as wavelength based services.

1.2.4.1 Core DWDM (Dense Wavelength Division Multiplexing) Switches — Switches used in systems designed for long haul and ultra long-haul optical networking applications.

1.2.4.2 Edge Optical Switches — Provide entry points into the enterprise or service provider core networks.

1.2.4.3 Optical Network Management — Provides capabilities to manage the optical network and allows operators to execute end-to-end circuit creation.

1.2.4.4 IP over DWDM (IPoDWDM) — A device utilized to integrate IP Routers and Switches in the OTN (Optical Transport Network).

Category 1.3: ROUTERS, SWITCHES, SECURITY, AND NETWORKING STORAGE

1.3.1 Routers.

A device that forwards data packets along networks. A router is connected to at least two networks, commonly two LANs or WANs or a LAN and its ISP's network. Routers are located at gateways, the places where two or more networks connect, and are the critical device that keeps data flowing between networks and keep the networks connected to the Internet.

1.3.1.1 Branch Routers — A multiservice router typically used in branch offices or locations with limited numbers of users and supports flexible configurations/feature. For example: security, VoIP, wan acceleration, etc.

1.3.1.2 Network Edge Routers — A specialized router residing at the edge or boundary of a network. This router ensures the connectivity of its network with external networks, a wide area network or the Internet. An edge router uses an External Border Gateway Protocol, which is used extensively over the Internet to provide connectivity with remote networks.

1.3.1.3 Core Routers - High performance, high speed, low latency routers that enable Enterprises to deliver a suite of data, voice, and video services to enable next-generation applications such as IPTV and Video on Demand (VoD), and Software as a Service (SaaS).

1.3.1.4 Service Aggregation Routers — Provides multiservice adaptation, aggregation and routing for Ethernet and IP/MPLS networks to enable service providers and enterprise edge networks simultaneously host resource-intensive integrated data, voice and video business and consumer services.

1.3.1.5 Carrier Ethernet Routers — High performance routers that enable service providers to deliver a suite of data, voice, and video services to enable next-generation applications such as IPTV, Video on Demand (VoD), and Software as a Service (SaaS).

1.3.2 Security.

1.3.2.1 Data Center and Virtualization Security Products and Appliances — Products designed to protect high-value data and data center resources with threat defense and policy control.

1.3.2.2 Intrusion Detection/Protection and Firewall Appliances — Provide comprehensive inline network firewall security from worms, Trojans, spyware, key loggers, and other malware. This includes Next-Generation Firewalls (NGFW), which offer a wire-speed integrated network platform that performs deep inspection of traffic and blocking of attacks. Intrusion Detection/Protection and Firewall Appliances should provide:

- Non-disruptive in-line bump-in-the-wire configuration
- Standard first-generation firewall capabilities, e.g., network-address translation (NAT), stateful protocol inspection (SPI) and virtual private networking (VPN), etc.
- Application awareness, full stack visibility and granular control
- Capability to incorporate information from outside the firewall, e.g., directory-based policy, blacklists, white lists, etc.
- Upgrade path to include future information feeds and security threats

- SSL decryption to enable identifying undesirable encrypted applications (Optional)

1.3.2.3 Logging Appliances and Analysis Tools — Solutions utilized to collect, classify, analyze, and securely store log messages.

1.3.2.4 Secure Edge and Branch Integrated Security Products — Network security, VPN, and intrusion prevention for branches and the network edge. Products typically consist of appliances or routers.

1.3.2.5 Secure Mobility Products — Delivers secure, scalable access to corporate applications across multiple mobile devices.

1.3.2.6 Encryption Appliances — A network security device that applies crypto services at the network transfer layer - above the data link level, but below the application level.

1.3.2.7 On-premise and Cloud-based services for Network Communications Integrity — Solutions that provide threat protection, data loss prevention, message level encryption, acceptable use and application control capabilities to secure web and email communications. This could include cloud access security brokers (CASBs) and DNS security.

1.3.2.8 Secure Access — Products that provide secure access to the network for any device, including personally owned mobile devices (laptops, tablets, and smart phones). Capabilities should include:

- Management visibility for device access
- Self-service on-boarding
- Centralized policy enforcement
- Differentiated access and services
- Device Management

1.3.3 Storage Networking.

High-speed network of shared storage devices connecting different types of storage devices with data servers.

1.3.3.1 Director Class SAN (Storage Area Network) Switches and Modules — A scalable, high- performance, and protocol-independent designed primarily to fulfill the role of core switch in a core-edge Fibre Channel (FC), FCOE or similar SAN topology. A Fibre Channel director is, by current convention, a switch with at least 128 ports. It does not differ from a switch in core FC protocol functionality. Fibre Channel directors provide the most reliable, scalable, high-performance foundation for private cloud storage and highly virtualized environments.

1.3.3.2 Fabric and Blade Server Switches — A Fibre Channel switch is a network switch compatible with the Fibre Channel (FC) protocol. It allows the creation of a Fibre Channel fabric, which is currently the core component of most SANs. The fabric is a network of Fibre Channel devices, which allows many-to-many communication, device name lookup, security, and redundancy. FC switches implement zoning; a mechanism that disables unwanted traffic between certain fabric nodes.

1.3.3.3 Enterprise and Data Center SAN and VSAN (Virtual Storage Area Network)

Management — Management tools to provisions, monitors, troubleshoot, and administers SANs and VSANs.

1.3.3.4 SAN Optimization — Tools to help optimize and secure SAN performance (ie. Encryption of data- at-rest, data migration, capacity optimization, data reduction, etc.

1.3.4 : Switches.

Layer 2/3 devices that are used to connect segments of a LAN (local area network) or multiple LANs and to filter and forward packets among them.

1.3.4.1 Campus LAN – Access Switches — Provides initial connectivity for devices to the network and controls user and workgroup access to internetwork resources. The following are some of the features a campus LAN access switch should support:

1. Security
 - a. SSHv2 (Secure Shell Version 2)
 - b. 802.1X (Port Based Network Access Control)
 - c. Port Security
 - d. DHCP (Dynamic Host Configuration Protocol) Snooping
2. VLANs
3. Fast Ethernet/Gigabit Ethernet
4. PoE (Power over Ethernet)
5. link aggregation
6. 10 Gb support
7. Port mirroring
8. Span Taps
9. Support of IPv6 and IPv4
10. Standards-based rapid spanning tree
11. Netflow Support (Optional).

1.3.4.2 Campus LAN – Core Switches — Campus core switches are generally used for the campus backbone and are responsible for transporting large amounts of traffic both reliably and quickly. Core switches should provide:

- High bandwidth
- Low latency
- Hot swappable power supplies and fans
- Security
 - SSHv2
 - MacSec encryption
 - Role-Based Access Control Lists (ACL)
- Support of IPv6 and IPv4
- 1/10/40/100 Gbps support
- IGP (Interior Gateway Protocol) routing
- EGP (Exterior Gateway Protocol) routing
- VPLS (Virtual Private LAN Service) Support
- VRRP (Virtual Router Redundancy Protocol) Support

- Netflow Support.

1.3.4.3 Campus Distribution Switches — Collect the data from all the access layer switches and forward it to the core layer switches. Traffic that is generated at Layer 2 on a switched network needs to be managed or segmented into Virtual Local Area Networks (VLANs), Distribution layer switches provides the inter-VLAN routing functions so that one VLAN can communicate with another on the network. Distribution layer switches provides advanced security policies that can be applied to network traffic using Access Control Lists (ACLs).

- High bandwidth
- Low latency
- Hot swappable power supplies and fans
- Security (SSHv2 and/or 802.1X)
- Support of IPv6 and IPv4
- Jumbo Frames Support
- Dynamic Trunking Protocol (DTP)
- Per-VLAN Rapid Spanning Tree (PVRST+)
- Switch-port auto recovery
- NetFlow Support or equivalent

1.3.4.4 Data Center Switches — Data center switches, or Layer 2/3 switches, switch all packets in the data center by switching or routing good ones to their final destinations, and discard unwanted traffic using Access Control Lists (ACLs) a minimum of 10 Gigabit speeds. High availability and modularity differentiates a typical Layer 2/3 switch from a data center switch. Capabilities should include:

- High bandwidth
- Low latency
- Hot swappable power supplies and fans
- Ultra-low latency through wire-speed ports with nanosecond port-to-port latency and hardware- based Inter-Switch Link (ISL) trunking
- Load Balancing across Trunk group able to use packet based load balancing scheme
- Bridging of Fibre Channel SANs and Ethernet fabrics
- Jumbo Frame Support
- Plug and Play Fabric formation that allows a new switch that joins the fabric to automatically become a member
- Ability to remotely disable and enable individual ports
- Support NetFlow or equivalent

1.3.4.5 Software Defined Networks (SDN) — An application in SDN that manages flow control to enable intelligent networking.

1.3.4.6 Software Defined Networks (SDN) - Virtualized Switches and Routers — Technology utilized to support software manipulation of hardware for specific use cases.

1.3.4.7 Software Defined Networks (SDN) — Controllers - is an application in software-defined networking (SDN) that manages flow control to enable intelligent networking. SDN controllers are

based on protocols, such as OpenFlow, that allow servers to tell switches where to send packets. The SDN controller lies between network devices at one end and applications at the other end. Any communications between applications and devices have to go through the controller. The controller uses multiple routing protocols including OpenFlow to configure network devices and choose the optimal network path for application traffic.

1.3.4.8 Carrier Aggregation Switches — Carrier aggregation switches route traffic in addition to bridging (transmitted) Layer 2/Ethernet traffic. Carrier aggregation switches' major characteristics are:

- Designed for Metro Ethernet networks
- Designed for video and other high bandwidth applications
- Supports a variety of interface types, especially those commonly used by Service

Providers Capabilities should include:

- Redundant Processors
- Redundant Power
- IPv4 and IPv6 unicast and multicast
- High bandwidth
- Low latency
- Hot swappable power supplies and fans
- MPLS (Multiprotocol Label Switching)
- BGP (Border Gateway Protocol)
- Software router virtualization and/or multiple routing tables
- Policy based routing
- Layer 2 functionality
 - Per VLAN Spanning Tree
 - Rapid Spanning Tree
 - VLAN IDs up to 4096
 - Layer 2 Class of Service (IEEE 802.1p)
 - Link Aggregation Control Protocol (LACP)
 - QinQ (IEEE 802.1ad)

1.3.4.9 Carrier Ethernet Access Switches — A carrier Ethernet access switch can connect directly to the customer or be utilized as a network interface on the service side to provide layer 2 services.

- Hot-swappable and field-replaceable integrated power supply and fan tray
- AC or DC power supply with minimum DC input ranging from 18V to 32 VDC and 36V to 72 VDC
- Ethernet and console port for manageability
- SD flash card slot for additional external storage
- Stratum 3 network clock
- Line-rate performance with a minimum of 62-million packets per second (MPPS) forwarding rate
- Support for dying gasp on loss of power
- Support for a variety of small form factor pluggable transceiver (SFP and SFP+) with

support for Device Object Model (DOM)

- Timing services for a converged access network to support mobile solutions, including Radio Access Network (RAN) applications
- Support for Synchronous Ethernet (SyncE) services
- Supports Hierarchical Quality of Service (H-QoS) to provide granular traffic-shaping policies
- Supports Resilient Ethernet Protocol REP/G.8032 for rapid layer-two convergence

Category 1.4: WIRELESS

Provides connectivity to wireless devices within a limited geographic area. System capabilities should include:

- Redundancy and automatic failover
- IPv6 compatibility
- NTP Support

1.4.1 Access Points — A wireless Access Point (AP) is a device that allows wireless devices to connect to a wired network using Wi-Fi, or related standards. Capabilities should include:

- 802.11a/b/g/n
- 802.11n
- 802.11ac
- Capable of controller discovery method via DHCP (onsite controller or offsite through Cloud Architecture)
- UL2043 plenum rated for safe mounting in a variety of indoor environments
- Support AES-CCMP (128-bit)
- Provides real-time wireless intrusion monitoring and detection

1.4.2 Outdoor Wireless Access Points — Outdoor APs are rugged, with a metal cover and a DIN rail or other type of mount. During operations they can tolerate a wide temperature range, high humidity and exposure to water, dust, and oil. Capabilities should include:

- Flexible Deployment Options
- Provides real-time wireless intrusion monitoring and detection
- Capable of controller discovery method via DHCP (onsite controller or offsite through Cloud Architecture)

1.4.3 Wireless LAN Controllers — An onsite or offsite solution utilized to manage Light-weight access points in large quantities by the network administrator or network operations center. The WLAN controller automatically handles the configuration of wireless access-points. Capabilities should include:

- Ability to monitor and mitigate RF interference/self-heal
- Support seamless roaming from AP to AP without requiring re-authentication
- Support configurable access control lists to filter traffic and denying wireless peer to peer traffic
- System encrypts all management layer traffic and passes it through a secure tunnel
- Policy management of users and devices provides ability to de-authorize or deny devices without denying the credentials of the user, nor disrupting other AP traffic
- Support configurable access control lists to filter traffic and denying wireless peer to peer traffic

1.4.4 Wireless LAN Network Services and Management — Enables network administrators to quickly plan, configure and deploy a wireless network, as well as provide additional WLAN services. Some examples include wireless security, asset tracking, and location services. Capabilities should include:

- Provide for redundancy and automatic failover
- Historical trend and real time performance reporting is supported
- Management access to wireless network components is secured
- SNMPv3 enabled
- RFC 1213 compliant
- Automatically discover wireless network components
- Capability to alert for outages and utilization threshold exceptions
- Capability to support Apple's Bonjour Protocol / mDNS
- QoS / Application identification capability

1.4.5 Cloud-based services for Access Points — Cloud-based management of campus-wide WiFi deployments and distributed multi-site networks. Capabilities include:

- Zero-touch access point provisioning
- Network-wide visibility and control
- RF optimization,
- Firmware updates

1.4.6 Mobile Device Management (MDM) — MDM technology utilized to allow employees to bring personally owned mobile devices (laptops, tablets, and smart phones) to their workplace, and use those devices to access privileged government information and applications in a secure manner. Capabilities should include:

- Ability to apply corporate policy to new devices accessing the network resources, whether wired or wireless
- Provide user and devices authentication to the network
- Provide secure remote access capability
- Support 802.1x
- Network optimization for performance, scalability, and user experience

Category 1.5: FACILITY MANAGEMENT, MONITORING, AND CONTROL

Technology utilized in the management, monitoring and control of facilities. Technologies include:

- a. Access control systems
- b. Detection/Identification systems, such as surveillance systems, closed circuit television cameras, or IP camera networks and the associated monitoring systems.
- c. Response systems such as alert systems, desktop monitoring systems, radios, and digital signage.
- d. Building and energy controls

Value Added Services

For each Category above, the following valued services will be available for procurement at the time of product purchase or anytime afterwards.

2.1 Maintenance Services — Capability to provide technical support, software maintenance, flexible hardware coverage, and smart, proactive device diagnostics for hardware.

2.2 Professional Services

- a. Deployment Services
 - i. Survey/ Design Services — Includes, but not limited to, discovery, design, architecture review/validation, and readiness assessment.
 - ii. Implementation Services — Includes, but not limited to, basic installation and configuration or end-to-end integration and deployment.
 - iii. Optimization — Includes, but not limited to, assessing operational environment readiness, identify ways to increase efficiencies throughout the network, and optimize Customer's infrastructure, applications and service management.
- b. Remote Management Services — Includes, but not limited to, continuous monitoring, incident management, problem management, change management, and utilization and performance reporting that may be on a subscription basis.
- c. Consulting/Advisory Services — Includes, but not limited to, assessing the availability, reliability, security and performance of Customer's existing solutions.
- d. Data Communications Architectural Design Services — Developing architectural strategies and roadmaps for transforming Customer's existing network architecture and operations management.
- e. Statement of Work (SOW) Services — Customer-specific tasks to be accomplished and/or services to be delivered based on Customer's business and technical requirements.
- f. Testing Services – Includes, but not limited to, testing the availability, reliability, security and performance of Customer's existing solutions

2.3 Partner Services — Provided by Contractor's Authorized Partners/Resellers.

- a. Subject to Contractor's approval and the certifications held by its Partners/Resellers, many Partners/Resellers can also offer and provide some or all of the Services as listed above at competitive pricing, along with local presence and support. As the primary Contractor (OEM), Contractor is ultimately responsible for the service and performance of its Partners/Resellers. Customers may have the option to purchase the Services to be directly delivered by Contractor (OEM) or its certified Partners/Resellers.

2.4 Training — Learning offerings for IT professionals on networking technologies, including but not limited to designing, implementing, operating, configuring, and troubleshooting network systems pertaining to items provided under the master agreement.

**CONTRACTOR NAME AWARDED BY CATEGORY
11/27/19 – 10/01/24**

| Master Agreement # | Awarded Contractor | Unified Communications | Networking | Routers, Switches, Security, and Storage Networking | Wireless | Facility Management, Monitoring, and Control |
|--------------------|----------------------------|------------------------|------------|---|----------|--|
| AR3189 | Cradlepoint, Inc. | | X | X | X | |
| AR3288 | Hewlett Packard Enterprise | | X | X | X | |
| AR3232 | Juniper Networks (US) Inc | | X | X | | |
| AR3190 | NEC Corporation of America | X | | | | |
| AR3229 | Palo Alto Networks, Inc | | | X | | |

A Contractor may offer products (i.e. white box, artificial intelligence, etc.) under multiple categories so long as the Contractor has received an award for the applicable category it is offering the provided equipment / service. Each category also allows for Internet of Things (IoT) products. These products must be an IoT product that can be deployed within, upon, or integrated into a government agency's physical asset to address government line of business needs. Proposals are expected to include IoT products designed to support common government lines of business in specific subcategories i.e. routers, switches, end points, etc. IoT products can only be provided in categories that the Contractor is awarded in and can include endpoints that support items in that category.

AGENCY INSTRUCTIONS – FOR EXPENDITURES

FOR ALL EXPENDITURES

These instructions are to further encourage competition. Agencies shall inform the authorized Contractor or authorized reseller for price quotes in reference to **SPO PL Contract No. 20-11 NASPO ValuePoint Data Communications.**

1. For purchases under \$5,000:
 - a. Obtain a minimum of one (1) written price quote from a Contractor or authorized reseller.
 - b. Form SPO-010 is optional.
 - c. Award is based on best value.
2. For purchases \$5,000 or greater:
 - a. Obtain a written price quote from two or more different Contractors, or
 - b. Select one Contractor that lists two or more authorized resellers and obtain a written price quote from the manufacturer and/or their authorized resellers.
 - c. Complete form SPO-010.
 - d. Award is based on best value.

For ALL Services, including Value Added Services, Professional Services. A Service Level Agreement (SLA) is required. A Statement of Work must be included in the solicitation. An SLA includes is a written statement in the solicitation document that describes the Purchasing Entity's service needs and expectations. An Engagement Addendum (EA) and SLA must be completed and signed prior to any services. Download the EA & SLA here: https://spo.hawaii.gov/wp-content/uploads/2020/06/PL20-11_EA-and-SLA.docx

Nail Your Business Case

- SOW Must Be Complete – No Gray Areas! Understand the application and what is in scope and out of scope.
- Clarify Ownership of Tasks and Deliverables
- Do not rely on Generic Definitions
- Document Business Value Expectations
- Define Cost to Manage Risk and Quality

SLA's

- The Master Agreement includes SLA as part of the order of precedence. An SLA is required for all services.
- An SLA does not supersede the Participating Addendum and NASPO Terms and Conditions.
- The CIO needs to evaluate each Master Agreement receiving a service in order to compare services and security standards before making a

determination as to which Contractor best meets their program objectives and state laws.

SLA cannot be an Afterthought

- Link to organizations SMART Objectives: Specific, Measurable, Actionable, Relevant and Time- Bound.
- Review SLA(s) and Terms and Conditions included in the NASPO ValuePoint Utah Master Agreement for service commitments, remedies, and penalties. Ensure SLA(s) align with organizational SMART objective and business needs.
- Closely evaluate all Terms and Conditions for SLA(s) exclusions.
- Consider review process for adjustments to SLA(s) over time.

Recommendations

- Clearly define the scope and objectives. Align with expectations of key stakeholders.
- Transition planning should be a part of your strategy.
- Evaluate the comprehensiveness and achievability of the transition plan.
- Jointly manage the transition plan and escalate issues before they become risks.
- Measure and proactively manage transition processes to achieve success.

For Executive Departments, personnel conducting or participating in utilizing this Price/Vendor List Contract is responsible to complete form SPO-010, *Record of Procurement* when an award is for \$5,000 or greater. Form SPO-010 is optional if award is under \$5,000. All non-responsive Contractor(s) and related pertinent information to this procurement shall be notated in Part C. The completed and properly signed (personnel with delegated authority) copy of the SPO-010 shall be kept in the procurement/contract file.

CONSIDERATION OF QUOTES: Agencies shall consider all responsive and responsible quotes received. An award shall be made to the Contractor(s) offering the lowest price. If the lowest price does not meet the agencies specification requirement, the award may be made to the vendor(s) whose offer represents the best value to the agency. Best value means the most advantageous offer determined by evaluating and comparing all relevant criteria in addition to price so that the offer meeting the overall combination that best services the agency is selected. These criteria may include, in addition to others, the total cost of ownership, performance, history of the vendor, quality of goods, services, delivery and proposed technical performance.

FORM SPO-010, *Record of Procurement* is available on the SPO website: <http://spo.hawaii.gov>; click on *Forms* on the SPO homepage.

CONTRACTOR

AND

AUTHORIZED

RESELLERS

CONTACT

INFORMATION

CRADLEPOINT, INC.

MASTER AGREEMENT NO. AR3189

<https://www.naspo.valuepoint.org/portfolio/data-communications-2019-2026/cradlepoint-inc/>

For price quotes, contact CradlePoint's Authorized Resellers. Payments are made to CradlePoint's Authorized Resellers.

PRICING: Click on the Master Price List from the NASPO URL.

Cradlepoint Company Information

Stephanie Wildman, CPPB

Phone #: (208) 493-5040

Email: Stephanie.Wildman@cradlepoint.com

AUTHORIZED RESELLERS

VPLS Solutions LLC

1744 W. Katella Ave, Ste 250

Orange, CA 92867

Vendor Code: 35479100

Contact: Mike Wysocki

Phone: (310) 502-6044

Email: mwysocki@vplssolutions.com

World Wide Technology LLC

60 Weldon Pkwy

St. Louis, Missouri 63040

Vendor Code: 35473900

Contact: Carol Harting

Phone: (314) 995-6103

Email: carol.harting@wwt.com

Technology Integration Group (TIG)

10240 Flanders Court

San Diego, CA 92121

Vendor Code: 25604800

Contact: Roland Yee

Phone: (808) 524-6552 x1562

Email: contractadmin@tig.com

HEWLETT PACKARD ENTERPRISE COMPANY

MASTER AGREEMENT NO. AR3228

<https://www.naspovaluepoint.org/portfolio/data-communications-2019-2026/hewlett-packard-enterprise-company/>

For price quotes, contact HPE's Authorized Resellers. Payments are made to HPE's Authorized Resellers.

PRICING: Click on: "Hewlett Packard Price File".

HPE

Nancy Schwarz
State, Local and Education Contract Management
Phone No: (480) 636-0267
Email: nancy.schwarz@hpe.com

AUTHORIZED RESELLERS

Mainline Information Systems, Inc.

PO Box 11407 Dept #1659
Birmingham, AL 35246-1659
Vendor Code: 32414101
Contact: Dave Johnson
Phone: (978) 985-2719
Email: dave.johnson@mainline.com

NxTech Systems, LLC

1050 Bishop St #274
Honolulu, HI 96813
Vendor Code: 30712201
Contact: Lester Morikawa
Phone: (808) 457-1358
Fax: (808) 548-0202
Email:
lmorikawa@nxtechsystems.com

PC Specialists, Inc.

7810 Trade St
San Diego, CA 92121-2445
Vendor Code: 25604802
Contact: Todd Federman
Phone: (808) 524-6652 x2027
Fax: (808) 536-2845
Email: todd.federman@tig.com

JUNIPER NETWORKS (US) INC

MASTER AGREEMENT NO. AR3232

<https://www.naspo.valuepoint.org/portfolio/data-communications-2019-2026/juniper-networks-us-inc/>

For price quotes, contact Juniper Networks (US) Inc's authorized resellers. Payments are made to Juniper Networks (US) Inc's authorized resellers.

PRICING: Click on "Juniper Price File"

Juniper Networks (US) Inc

Roxanne Bieniek

Phone No.: (978) 589-0636

Email: rbieniek@juniper.net

AUTHORIZED RESELLERS

SHI International Corp

PO Box 952121

Dallas, TX 75395-2121

Vendor Code: 319284-00

Contact: Elton Juter

Phone: (808) 215-1037

Email: elton_juter@shi.com

Technology Integration Group (TIG)

PO Box 85244

San Diego, CA 92186-5244

Vendor Code: 255997-02

Contact: Jerrie Doss

Phone: (858) 566-1900 x2314

Email: contractadm@tig.com

NEC CORPORATION OF AMERICA

MASTER AGREEMENT NO. AR3190

<https://www.naspovaluepoint.org/portfolio/data-communications-2019-2026/nec-corporation-of-america/>

For price quotes, contact NEC Corporation of America or its authorized resellers. Payments are made to NEC Corporation of America or its authorized resellers.

PRICING: Click on: "Detailed Price Catalog".

NEC Corporation of America

Lockbox 22529
22529 Network Place
Chicago, IL 60673-1225
Vendor Code: 355698-00
Lainey Gordon
Phone No: (214) 262-3711
Email: lainey.gordon@necam.com

Authorized Resellers

Hawaiian Telcom Services Company Inc

1177 Bishop Street
Honolulu HI 96813
Vendor Code: 28923607
Contact: Rommel Aczon
Phone: 808-546-3342
Email: rommel.aczon@hawaiiantel.com

PALO ALTO NETWORKS, INC.

CONTRACT NO. AR3229

<https://www.naspo.valuepoint.org/portfolio/data-communications-2019-2026/palo-alto-networks-inc/>

For price quotes, contact Palo Alto Networks Authorized Reseller. Payments are made to Palo Alto Networks Authorized Reseller.

PALO ALTO NETWORKS, INC

3000 Tannery Way
Santa Clara, CA 95054
Contact: Regina Acheampong
Phone: (669) 261-5126
Email: racheampon@paloaltonetworks.com

PRICING

Click on: "Palo Alto Price File".

AUTHORIZED RESELLERS

World Wide Technology, LLC.

P.O. Box 957653
St. Louis, MO 63195-7653
Vendor Code: 35473900
Name: Carol Harting
Phone: (808) 533-5705
Email Address: hawaii.naspo@wwt.com

SHI International Corp

PO Box 952121
Dallas, TX 75395-2121
Vendor Code: 31928400
Name: Nicole Rasky
Phone: (732) 584-8227
Email: PS_Contracts@shi.com

PC Specialist Inc dba Technology Integration Group

PO Box 85244
San Diego, CA 92186-5244
Vendor Code: 255997-02
Name: Jerrie Dodd
Phone: (858) 566-1900 x2314
Email Address: jerrie.dodd@tig.com

Optiv Security Inc

1144 15th Street, Suite 2900
Denver, CO 80202
Vendor Code: 340314-00
Name: Coleman Wallis
Phone: (816) 556-3508
Email Address: coleman.wallis@optiv.com