West Virginia Purchasing Division

2019 Washington Street, East
Charleston, WV 25305
Telephone: 304-558-2306
General Fax: 304-558-6026
Bid Fax: 304-558-3970

The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at *wvOASIS.gov*. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at *WVPurchasing.gov* with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.

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Procurement | Budgeting | Accounts Receivable | Accounts Payable

Welcome, Lu Anne Cottrill

Solicitation Response(SR) Dept: 0231 ID: ESR03232100000006486 Ver.: 1 Function: New Phase: Final   Modified by batch , 03/23/2021

Header 2

List View

| General Information | Contact | Default Values | Discount | Document Information | Clarification Request |

Procurement Folder: 847299
Procurement Type: Central Purchase Order
Vendor ID: VS0000035609
Legal Name: Vodanet Systems LLC
Alias/DBA: Network Devices Inc
Total Bid: $195,147.46
Response Date: 03/23/2021
Response Time: 11:58
Responded By User ID: frankvodanet
First Name: Frank
Last Name: Durucan
Email: frank@vodanetsystems.c
Phone: 2015591474

SO Doc Code: CRFQ
SO Dept: 0231
SO Doc ID: OOT2100000004
Published Date: 3/8/21
Close Date: 3/23/21
Close Time: 13:30
Status: Closed
Solicitation Description: Networking Infrastructure Equipment for Bldg 6 (OT21100)
Total of Header Attachments: 2
Total of All Attachments: 2

Department of Administration **Purchasing Division** **2019 Washington Street East** **Post Office Box 50130** **Charleston, WV 25305-0130**	**State of West Virginia** **Solicitation Response**

Proc Folder:	847299
Solicitation Description:	Networking Infrastructure Equipment for Bldg 6 (OT21100)
Proc Type:	Central Purchase Order

Solicitation Closes	Solicitation Response	Version
2021-03-23 13:30	SR 0231 ESR03232100000006486	1

VENDOR
VS0000035609 Vodanet Systems LLC

Solicitation Number:	CRFQ 0231 OOT2100000004
Total Bid:	195147.4599999999918509274721 **Response Date:** 2021-03-23 **Response Time:** 11:58:16
Comments:	

FOR INFORMATION CONTACT THE BUYER
Jessica S Chambers
(304) 558-0246
jessica.s.chambers@wv.gov

Vendor
Signature X   **FEIN#**   **DATE**

All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Network Infrastructure Equipment - see attached Pricing Page	1.00000	LS	195147.460000	195147.46

Comm Code	Manufacturer	Specification	Model #
43221700			

Commodity Line Comments: Juniper Equivalents quoted.

Extended Description:

Overall Total Cost for Networking Infrastructure Equipment for 3.1.1 - 3.1.13

	Department of Administration	**State of West Virginia**
	Purchasing Division	**Centralized Request for Quote**
	2019 Washington Street East	**Info Technology**
	Post Office Box 50130	
	Charleston, WV 25305-0130	

Proc Folder:	847299	**Reason for Modification:**
Doc Description: Networking Infrastructure Equipment for Bldg 6 (OT21100)		
Proc Type:	Central Purchase Order	

Date Issued	**Solicitation Closes**	**Solicitation No**	**Version**
2021-03-08	2021-03-23 13:30	CRFQ 0231 OOT2100000004	1

BID RECEIVING LOCATION

BID CLERK

DEPARTMENT OF ADMINISTRATION

PURCHASING DIVISION

2019 WASHINGTON ST E

CHARLESTON   WV   25305

US

VENDOR

Vendor Customer Code: VS0000035609

Vendor Name : Vodanet Systems LLC

 Address : 70 COMMERCIAL AVE, UNIT C

 Street : 70 COMMERCIAL AVE, UNIT C

 City : Moonachie

 State : NJ   **Country :** USA   **Zip :** 07074

Principal Contact : Frank Durucan

Vendor Contact Phone: 201-559-1474   **Extension:**

FOR INFORMATION CONTACT THE BUYER
Jessica S Chambers
(304) 558-0246
jessica.s.chambers@wv.gov

Vendor Signature X _(signature)_   **FEIN#** 46-4978786   **DATE** 03/22/2021

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION

The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Office of Technology (WVOT) to establish a contract for the one-time purchase of Core Switches, Top of Rack SFP Switches, and Top of Rack UTP switches. The equipment will be installed by the Office of Technology in a WVOT Data Center (Building 6) facility located in Kanawha County, West Virginia per the terms and conditions and specifications as attached.

INVOICE TO	SHIP TO
DEPARTMENT OF ADMINISTRATION	DEPARTMENT OF ADMINISTRATION
OFFICE OF TECHNOLOGY	OFFICE OF TECHNOLOGY
1900 KANAWHA BLVD E, BLDG 5 10TH FLOOR	908 BULLITT ST
CHARLESTON WV 25305	CHARLESTON WV 25301-1002
US	US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Network Infrastructure Equipment - see attached Pricing Page	1.00000	LS	$195,147.46	$195,147.46

Comm Code	Manufacturer	Specification	Model #
43221700			

Extended Description:

Overall Total Cost for Networking Infrastructure Equipment for 3.1.1 - 3.1.13

SCHEDULE OF EVENTS

Line	Event	Event Date
1	TECHNICAL QUESTION DEADLINE	2021-03-15

INSTRUCTIONS TO VENDORS SUBMITTING BIDS

1. REVIEW DOCUMENTS THOROUGHLY: The attached documents contain a solicitation for bids. Please read these instructions and all documents attached in their entirety. These instructions provide critical information about requirements that if overlooked could lead to disqualification of a Vendor's bid. All bids must be submitted in accordance with the provisions contained in these instructions and the Solicitation. Failure to do so may result in disqualification of Vendor's bid.

2. MANDATORY TERMS: The Solicitation may contain mandatory provisions identified by the use of the words "must," "will," and "shall." Failure to comply with a mandatory term in the Solicitation will result in bid disqualification.

3. PREBID MEETING: The item identified below shall apply to this Solicitation.

☐ A pre-bid meeting will not be held prior to bid opening

☐ A **MANDATORY PRE-BID** meeting will be held at the following place and time:

All Vendors submitting a bid must attend the mandatory pre-bid meeting. Failure to attend the mandatory pre-bid meeting shall result in disqualification of the Vendor's bid. No one individual is permitted to represent more than one vendor at the pre-bid meeting. Any individual that does attempt to represent two or more vendors will be required to select one vendor to which the individual's attendance will be attributed. The vendors not selected will be deemed to have not attended the pre-bid meeting unless another individual attended on their behalf.

An attendance sheet provided at the pre-bid meeting shall serve as the official document verifying attendance. Any person attending the pre-bid meeting on behalf of a Vendor must list on the attendance sheet his or her name and the name of the Vendor he or she is representing.

Additionally, the person attending the pre-bid meeting should include the Vendor's E-Mail address, phone number, and Fax number on the attendance sheet. It is the Vendor's responsibility to locate the attendance sheet and provide the required information. Failure to complete the attendance sheet as required may result in disqualification of Vendor's bid.

All Vendors should arrive prior to the starting time for the pre-bid. Vendors who arrive after the starting time but prior to the end of the pre-bid will be permitted to sign in but are charged with knowing all matters discussed at the pre-bid.

Questions submitted at least five business days prior to a scheduled pre-bid will be discussed at the pre-bid meeting if possible. Any discussions or answers to questions at the pre-bid meeting

are preliminary in nature and are non-binding. Official and binding answers to questions will be published in a written addendum to the Solicitation prior to bid opening.

4. VENDOR QUESTION DEADLINE: Vendors may submit questions relating to this Solicitation to the Purchasing Division. Questions must be submitted in writing. All questions must be submitted on or before the date listed below and to the address listed below in order to be considered. A written response will be published in a Solicitation addendum if a response is possible and appropriate. Non-written discussions, conversations, or questions and answers regarding this Solicitation are preliminary in nature and are nonbinding.

Submitted e-mails should have solicitation number in the subject line.

Question Submission Deadline: March 15, 2021 at 9:00 AM (ET)

Submit Questions to: Jessica Chambers
2019 Washington Street, East
Charleston, WV 25305
Fax: (304) 558-4115 (Vendors should not use this fax number for bid submission)
Email: Jessica.S.Chambers@wv.gov

5. VERBAL COMMUNICATION: Any verbal communication between the Vendor and any State personnel is not binding, including verbal communication at the mandatory pre-bid conference. Only information issued in writing and added to the Solicitation by an official written addendum by the Purchasing Division is binding.

6. BID SUBMISSION: All bids must be submitted electronically through wvOASIS or signed and delivered by the Vendor to the Purchasing Division at the address listed below on or before the date and time of the bid opening. Any bid received by the Purchasing Division staff is considered to be in the possession of the Purchasing Division and will not be returned for any reason. The Purchasing Division will not accept bids, modification of bids, or addendum acknowledgment forms via e-mail. Acceptable delivery methods include electronic submission via wvOASIS, hand delivery, delivery by courier, or facsimile.

The bid delivery address is:
Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

A bid that is not submitted electronically through wvOASIS should contain the information listed below on the face of the envelope or the bid may be rejected by the Purchasing Division.:

SEALED BID:
BUYER: Jessica Chambers
SOLICITATION NO.: CRFQ OOT2100000004
BID OPENING DATE: 3/23/2021
BID OPENING TIME: 1:30 PM (ET)
FAX NUMBER: (304)558-3970

Revised 02/10/2021

The Purchasing Division may prohibit the submission of bids electronically through wvOASIS at its sole discretion. Such a prohibition will be contained and communicated in the wvOASIS system resulting in the Vendor's inability to submit bids through wvOASIS. Submission of a response to a Request for Proposal is not permitted in wvOASIS.

For Request For Proposal ("RFP") Responses Only: In the event that Vendor is responding to a request for proposal, the Vendor shall submit one original technical and one original cost proposal plus_____convenience copies of each to the Purchasing Division at the address shown above. Additionally, the Vendor should identify the bid type as either a technical or cost proposal on the face of each bid envelope submitted in response to a request for proposal as follows:

BID TYPE: (This only applies to CRFP)
☐ Technical
☐ Cost

7. BID OPENING: Bids submitted in response to this Solicitation will be opened at the location identified below on the date and time listed below. Delivery of a bid after the bid opening date and time will result in bid disqualification. For purposes of this Solicitation, a bid is considered delivered when confirmation of delivery is provided by wvOASIS (in the case of electronic submission) or when the bid is time stamped by the official Purchasing Division time clock (in the case of hand delivery).

Bid Opening Date and Time: March 23, 2021 at 1:30 PM (ET)

Bid Opening Location: Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

8. ADDENDUM ACKNOWLEDGEMENT: Changes or revisions to this Solicitation will be made by an official written addendum issued by the Purchasing Division. Vendor should acknowledge receipt of all addenda issued with this Solicitation by completing an Addendum Acknowledgment Form, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

9. BID FORMATTING: Vendor should type or electronically enter the information onto its bid to prevent errors in the evaluation. Failure to type or electronically enter the information may result in bid disqualification.

10. ALTERNATE MODEL OR BRAND: Unless the box below is checked, any model, brand, or specification listed in this Solicitation establishes the acceptable level of quality only and is not intended to reflect a preference for, or in any way favor, a particular brand or vendor. Vendors may bid alternates to a listed model or brand provided that the alternate is at least equal to the model or brand and complies with the required specifications. The equality of any alternate being bid shall be determined by the State at its sole discretion. Any Vendor bidding an alternate model or brand should clearly identify the alternate items in its bid and should include manufacturer's specifications, industry literature, and/or any other relevant documentation demonstrating the

equality of the alternate items. Failure to provide information for alternate items may be grounds for rejection of a Vendor's bid.

☐ This Solicitation is based upon a standardized commodity established under W. Va. Code § 5A-3-61. Vendors are expected to bid the standardized commodity identified. Failure to bid the standardized commodity will result in your firm's bid being rejected.

11. EXCEPTIONS AND CLARIFICATIONS: The Solicitation contains the specifications that shall form the basis of a contractual agreement. Vendor shall clearly mark any exceptions, clarifications, or other proposed modifications in its bid. Exceptions to, clarifications of, or modifications of a requirement or term and condition of the Solicitation may result in bid disqualification.

12. COMMUNICATION LIMITATIONS: In accordance with West Virginia Code of State Rules §148-1-6.6, communication with the State of West Virginia or any of its employees regarding this Solicitation during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited without prior Purchasing Division approval. Purchasing Division approval for such communication is implied for all agency delegated and exempt purchases.

13. REGISTRATION: Prior to Contract award, the apparent successful Vendor must be properly registered with the West Virginia Purchasing Division and must have paid the $125 fee, if applicable.

14. UNIT PRICE: Unit prices shall prevail in cases of a discrepancy in the Vendor's bid.

15. PREFERENCE: Vendor Preference may be requested in purchases of motor vehicles or construction and maintenance equipment and machinery used in highway and other infrastructure projects. Any request for preference must be submitted in writing with the bid, must specifically identify the preference requested with reference to the applicable subsection of West Virginia Code § 5A-3-37, and must include with the bid any information necessary to evaluate and confirm the applicability of the requested preference. A request form to help facilitate the request can be found at:
http://www.state.wv.us/admin/purchase/vrc/Venpref.pdf.

15A. RECIPROCAL PREFERENCE: The State of West Virginia applies a reciprocal preference to all solicitations for commodities and printing in accordance with W. Va. Code § 5A-3-37(b). In effect, non-resident vendors receiving a preference in their home states, will see that same preference granted to West Virginia resident vendors bidding against them in West Virginia. Any request for reciprocal preference must include with the bid any information necessary to evaluate and confirm the applicability of the preference. A request form to help facilitate the request can be found at: http://www.state.wv.us/admin/purchase/vrc/Venpref.pdf.

16. SMALL, WOMEN-OWNED, OR MINORITY-OWNED BUSINESSES: For any solicitations publicly advertised for bid, in accordance with West Virginia Code §5A-3-37(a)(7) and W. Va. CSR § 148-22-9, any non-resident vendor certified as a small, women-owned, or minority-owned business under W. Va. CSR § 148-22-9 shall be provided the same preference made available to any resident vendor. Any non-resident small, women-owned, or

minority-owned business must identify itself as such in writing, must submit that writing to the Purchasing Division with its bid, and must be properly certified under W. Va. CSR § 148-22-9 prior to contract award to receive the preferences made available to resident vendors. Preference for a non-resident small, women-owned, or minority owned business shall be applied in accordance with W. Va. CSR § 148-22-9.

17. WAIVER OF MINOR IRREGULARITIES: The Director reserves the right to waive minor irregularities in bids or specifications in accordance with West Virginia Code of State Rules § 148-1-4.6.

18. ELECTRONIC FILE ACCESS RESTRICTIONS: Vendor must ensure that its submission in wvOASIS can be accessed and viewed by the Purchasing Division staff immediately upon bid opening. The Purchasing Division will consider any file that cannot be immediately accessed and viewed at the time of the bid opening (such as, encrypted files, password protected files, or incompatible files) to be blank or incomplete as context requires, and are therefore unacceptable. A vendor will not be permitted to unencrypt files, remove password protections, or resubmit documents after bid opening to make a file viewable if those documents are required with the bid. A Vendor may be required to provide document passwords or remove access restrictions to allow the Purchasing Division to print or electronically save documents provided that those documents are viewable by the Purchasing Division prior to obtaining the password or removing the access restriction.

19. NON-RESPONSIBLE: The Purchasing Division Director reserves the right to reject the bid of any vendor as Non-Responsible in accordance with W. Va. Code of State Rules § 148-1-5.3, when the Director determines that the vendor submitting the bid does not have the capability to fully perform, or lacks the integrity and reliability to assure good-faith performance."

20. ACCEPTANCE/REJECTION: The State may accept or reject any bid in whole, or in part in accordance with W. Va. Code of State Rules § 148-1-4.5. and § 148-1-6.4.b."

21. YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

22. INTERESTED PARTY DISCLOSURE: West Virginia Code § 6D-1-2 requires that the vendor submit to the Purchasing Division a disclosure of interested parties to the contract for all contracts with an actual or estimated value of at least $1 Million. That disclosure must occur on the form prescribed and approved by the WV Ethics Commission prior to contract award. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

23. WITH THE BID REQUIREMENTS: In instances where these specifications require documentation or other information with the bid, and a vendor fails to provide it with the bid, the Director of the Purchasing Division reserves the right to request those items after bid opening and prior to contract award pursuant to the authority to waive minor irregularities in bids or specifications under W. Va. CSR § 148-1-4.6. This authority does not apply to instances where state law mandates receipt with the bid.

GENERAL TERMS AND CONDITIONS:

1. CONTRACTUAL AGREEMENT: Issuance of a Award Document signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.

2. DEFINITIONS: As used in this Solicitation/Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation/Contract.

2.1. "Agency" or **"Agencies"** means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.

2.2. "Bid" or **"Proposal"** means the vendors submitted response to this solicitation.

2.3. "Contract" means the binding agreement that is entered into between the State and the Vendor to provide the goods or services requested in the Solicitation.

2.4. "Director" means the Director of the West Virginia Department of Administration, Purchasing Division.

2.5. "Purchasing Division" means the West Virginia Department of Administration, Purchasing Division.

2.6. "Award Document" means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the contract holder.

2.7. "Solicitation" means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.

2.8. "State" means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.

2.9. "Vendor" or **"Vendors"** means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

3. CONTRACT TERM; RENEWAL; EXTENSION: The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:

☐ **Term Contract**

Initial Contract Term: This Contract becomes effective on _____ and the initial contract term extends until _____.

Renewal Term: This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal should be delivered to the Agency and then submitted to the Purchasing Division thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Unless otherwise specified below, renewal of this Contract is limited to _____ successive one (1) year periods or multiple renewal periods of less than one year, provided that the multiple renewal periods do not exceed the total number of months available in all renewal years combined. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

> ☐ **Alternate Renewal Term** – This contract may be renewed for _____ successive _____ year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

Delivery Order Limitations: In the event that this contract permits delivery orders, a delivery order may only be issued during the time this Contract is in effect. Any delivery order issued within one year of the expiration of this Contract shall be effective for one year from the date the delivery order is issued. No delivery order may be extended beyond one year after this Contract has expired.

☐ **Fixed Period Contract:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and must be completed within _____ days.

☐ **Fixed Period Contract with Renewals:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and part of the Contract more fully described in the attached specifications must be completed within _____ days. Upon completion of the work covered by the preceding sentence, the vendor agrees that maintenance, monitoring, or warranty services will be provided for _____ year(s) thereafter.

☐ **One Time Purchase:** The term of this Contract shall run from the issuance of the Award Document until all of the goods contracted for have been delivered, but in no event will this Contract extend for more than one fiscal year.

☐ **Other:** See attached _____

Revised 02/10/2021

4. AUTHORITY TO PROCEED: Vendor is authorized to begin performance of this contract on the date of encumbrance listed on the front page of the Award Document unless either the box for "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked in Section 3 above. If either "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked, Vendor must not begin work until it receives a separate notice to proceed from the State. The notice to proceed will then be incorporated into the contract via change order to memorialize the official date that work commenced.

5. QUANTITIES: The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.

☐ **Open End Contract:** Quantities listed in this Solicitation are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.

☐ **Service:** The scope of the service to be provided will be more clearly defined in the specifications included herewith.

☐ **Combined Service and Goods:** The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.

☐ **One Time Purchase:** This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.

6. EMERGENCY PURCHASES: The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute of breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One Time Purchase contract.

7. REQUIRED DOCUMENTS: All of the items checked below must be provided to the Purchasing Division by the Vendor as specified below.

☐ **BID BOND (Construction Only):** Pursuant to the requirements contained in W. Va. Code § 5-22-1(c), All Vendors submitting a bid on a construction project shall furnish a valid bid bond in the amount of five percent (5%) of the total amount of the bid protecting the State of West Virginia. The bid bond must be submitted with the bid.

☐ **PERFORMANCE BOND:** The apparent successful Vendor shall provide a performance bond in the amount of 100% of the contract. The performance bond must be received by the Purchasing Division prior to Contract award.

☐ **LABOR/MATERIAL PAYMENT BOND:** The apparent successful Vendor shall provide a labor/material payment bond in the amount of 100% of the Contract value. The labor/material payment bond must be delivered to the Purchasing Division prior to Contract award.

In lieu of the Bid Bond, Performance Bond, and Labor/Material Payment Bond, the Vendor may provide certified checks, cashier's checks, or irrevocable letters of credit. Any certified check, cashier's check, or irrevocable letter of credit provided in lieu of a bond must be of the same amount and delivered on the same schedule as the bond it replaces. A letter of credit submitted in lieu of a performance and labor/material payment bond will only be allowed for projects under $100,000. Personal or business checks are not acceptable. Notwithstanding the foregoing, West Virginia Code § 5-22-1 (d) mandates that a vendor provide a performance and labor/material payment bond for construction projects. Accordingly, substitutions for the performance and labor/material payment bonds for construction projects is not permitted.

☐ **MAINTENANCE BOND:** The apparent successful Vendor shall provide a two (2) year maintenance bond covering the roofing system. The maintenance bond must be issued and delivered to the Purchasing Division prior to Contract award.

☐ **LICENSE(S) / CERTIFICATIONS / PERMITS:** In addition to anything required under the Section of the General Terms and Conditions entitled Licensing, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits upon request and in a form acceptable to the State. The request may be prior to or after contract award at the State's sole discretion.

☐

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☐

☐

The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications regardless of whether or not that requirement is listed above.

8. INSURANCE: The apparent successful Vendor shall furnish proof of the insurance identified by a checkmark below and must include the State as an additional insured on each policy prior to Contract award. The insurance coverages identified below must be maintained throughout the life of this contract. Thirty (30) days prior to the expiration of the insurance policies, Vendor shall provide the Agency with proof that the insurance mandated herein has been continued. Vendor must also provide Agency with immediate notice of any changes in its insurance policies, including but not limited to, policy cancelation, policy reduction, or change in insurers. The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether or not that insurance requirement is listed in this section.

Vendor must maintain:

☐ **Commercial General Liability Insurance** in at least an amount of: $1,000,000.00 per occurrence.

☐ **Automobile Liability Insurance** in at least an amount of: $1,000,000.00 per occurrence.

☐ **Professional/Malpractice/Errors and Omission Insurance** in at least an amount of: _____ per occurrence. Notwithstanding the forgoing, Vendor's are not required to list the State as an additional insured for this type of policy.

☐ **Commercial Crime and Third Party Fidelity Insurance** in an amount of: _____ per occurrence.

☐ **Cyber Liability Insurance** in an amount of: _____ per occurrence.

☐ **Builders Risk Insurance** in an amount equal to 100% of the amount of the Contract.

☐ **Pollution Insurance** in an amount of: _____ per occurrence.

☐ **Aircraft Liability** in an amount of: _____ per occurrence.

☐

☐

☐

☐

Notwithstanding anything contained in this section to the contrary, the Director of the Purchasing Division reserves the right to waive the requirement that the State be named as an additional insured on one or more of the Vendor's insurance policies if the Director finds that doing so is in the State's best interest.

9. WORKERS' COMPENSATION INSURANCE: The apparent successful Vendor shall comply with laws relating to workers compensation, shall maintain workers' compensation insurance when required, and shall furnish proof of workers' compensation insurance upon request.

10. [Reserved]

11. LIQUIDATED DAMAGES: This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy. Vendor shall pay liquidated damages in the amount specified below or as described in the specifications:

☐ _____ for _____

☐ Liquidated Damages Contained in the Specifications

12. ACCEPTANCE: Vendor's signature on its bid, or on the certification and signature page, constitutes an offer to the State that cannot be unilaterally withdrawn, signifies that the product or service proposed by vendor meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise indicated, and signifies acceptance of the terms and conditions contained in the Solicitation unless otherwise indicated.

13. PRICING: The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification. Notwithstanding the foregoing, Vendor must extend any publicly advertised sale price to the State and invoice at the lower of the contract price or the publicly advertised sale price.

14. PAYMENT IN ARREARS: Payment in advance is prohibited under this Contract. Payment may only be made after the delivery and acceptance of goods or services. The Vendor shall submit invoices, in arrears.

15. PAYMENT METHODS: Vendor must accept payment by electronic funds transfer and P-Card. (The State of West Virginia's Purchasing Card program, administered under contract by a banking institution, processes payment for goods and services through state designated credit cards.)

16. TAXES: The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.

17. ADDITIONAL FEES: Vendor is not permitted to charge additional fees or assess additional charges that were not either expressly provided for in the solicitation published by the State of West Virginia or included in the unit price or lump sum bid amount that Vendor is required by the solicitation to provide. Including such fees or charges as notes to the solicitation may result in rejection of vendor's bid. Requesting such fees or charges be paid after the contract has been awarded may result in cancellation of the contract.

18. FUNDING: This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available.

19. CANCELLATION: The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may also cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-5.2.b.

20. TIME: Time is of the essence with regard to all matters of time and performance in this Contract.

21. APPLICABLE LAW: This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code or West Virginia Code of State Rules is void and of no effect.

22. COMPLIANCE WITH LAWS: Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendor acknowledges that it has reviewed, understands, and will comply with all applicable laws, regulations, and ordinances.

> **SUBCONTRACTOR COMPLIANCE:** Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to comply with all applicable laws, regulations, and ordinances. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

23. ARBITRATION: Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.

24. MODIFICATIONS: This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any change to existing contracts that adds work or changes contract cost, and were not included in the original contract, must be approved by the Purchasing Division and the Attorney General's Office (as to form) prior to the implementation of the change or commencement of work affected by the change.

25. WAIVER: The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.

26. SUBSEQUENT FORMS: The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.

27. ASSIGNMENT: Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments.

28. WARRANTY: The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.

29. STATE EMPLOYEES: State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.

30. PRIVACY, SECURITY, AND CONFIDENTIALITY: The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in http://www.state.wv.us/admin/purchase/privacy/default.html.

31. YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

32. LICENSING: In accordance with West Virginia Code of State Rules § 148-1-6.1.e, Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.

> **SUBCONTRACTOR COMPLIANCE:** Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to be licensed, in good standing, and up-to-date on all state and local obligations as described in this section. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

33. ANTITRUST: In submitting a bid to, signing a contract with, or accepting a Award Document from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.

34. VENDOR CERTIFICATIONS: By signing its bid or entering into this Contract, Vendor certifies (1) that its bid or offer was made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, person or entity submitting a bid or offer for the same material, supplies, equipment or services; (2) that its bid or offer is in all respects fair and without collusion or fraud; (3) that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; and (4) that it has reviewed this Solicitation in its entirety; understands the requirements, terms and conditions, and other information contained herein.

Vendor's signature on its bid or offer also affirms that neither it nor its representatives have any interest, nor shall acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency. The individual signing this bid or offer on behalf of Vendor certifies that he or she is authorized by the Vendor to execute this bid or offer or any documents related thereto on Vendor's behalf; that he or she is authorized to bind the Vendor in a contractual relationship; and that, to the best of his or her knowledge, the Vendor has properly registered with any State agency that may require registration.

35. VENDOR RELATIONSHIP: The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, etc. and the filing of all necessary documents, forms, and returns pertinent to all of the foregoing.

Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

36. INDEMNIFICATION: The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.

37. PURCHASING AFFIDAVIT: In accordance with West Virginia Code §§ 5A-3-10a and 5-22-1(i), the State is prohibited from awarding a contract to any bidder that owes a debt to the State or a political subdivision of the State, Vendors are required to sign, notarize, and submit the Purchasing Affidavit to the Purchasing Division affirming under oath that it is not in default on any monetary obligation owed to the state or a political subdivision of the state.

38. ADDITIONAL AGENCY AND LOCAL GOVERNMENT USE: This Contract may be utilized by other agencies, spending units, and political subdivisions of the State of West Virginia; county, municipal, and other local government bodies; and school districts ("Other Government Entities"), provided that both the Other Government Entity and the Vendor agree. Any extension of this Contract to the aforementioned Other Government Entities must be on the same prices, terms, and conditions as those offered and agreed to in this Contract, provided that such extension is in compliance with the applicable laws, rules, and ordinances of the Other Government Entity. A refusal to extend this Contract to the Other Government Entities shall not impact or influence the award of this Contract in any manner.

39. CONFLICT OF INTEREST: Vendor, its officers or members or employees, shall not presently have or acquire an interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.

40. REPORTS: Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:

☐ Such reports as the Agency and/or the Purchasing Division may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.

☐ Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at purchasing.division@wv.gov.

41. BACKGROUND CHECK: In accordance with W. Va. Code § 15-2D-3, the Director of the Division of Protective Services shall require any service provider whose employees are regularly employed on the grounds or in the buildings of the Capitol complex or who have access to sensitive or critical information to submit to a fingerprint-based state and federal background inquiry through the state repository. The service provider is responsible for any costs associated with the fingerprint-based state and federal background inquiry.

After the contract for such services has been approved, but before any such employees are permitted to be on the grounds or in the buildings of the Capitol complex or have access to sensitive or critical information, the service provider shall submit a list of all persons who will be physically present and working at the Capitol complex to the Director of the Division of Protective Services for purposes of verifying compliance with this provision. The State reserves the right to prohibit a service provider's employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check.

Service providers should contact the West Virginia Division of Protective Services by phone at (304) 558-9911 for more information.

42. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS: Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:

    a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.

    b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open heath, basic oxygen, electric furnace, Bessemer or other steel making process. The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:

    c. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars ($2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or

    d. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

43. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL: In Accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars ($50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a

"substantial labor surplus area", as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products. This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

44. INTERESTED PARTY SUPPLEMENTAL DISCLOSURE: W. Va. Code § 6D-1-2 requires that for contracts with an actual or estimated value of at least $1 million, the vendor must submit to the Agency a supplemental disclosure of interested parties reflecting any new or differing interested parties to the contract, which were not included in the original pre-award interested party disclosure, within 30 days following the completion or termination of the contract. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

45. PROHIBITION AGAINST USED OR REFURBISHED: Unless expressly permitted in the solicitation published by the State, Vendor must provide new, unused commodities, and is prohibited from supplying used or refurbished commodities, in fulfilling its responsibilities under this Contract.

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

Frank Durucan
_____
(Name, Title)

Frank Durucan
_____
(Printed Name and Title)

70 Commercial Ave, Unit C, Moonachie, NJ 07074
_____
(Address)

201-559-1474
_____
(Phone Number) / (Fax Number)

frank@vodanetsystems.com
_____
(email address)

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

Vodanet Systems LLC
_____
(Company)

Albert Krakus   Albert Krakus, President
_____
(Authorized Signature) (Representative Name, Title)

Albert Krakus, President
_____
(Printed Name and Title of Authorized Representative)

03/22/2021
_____
(Date)

201-559-1474
_____
(Phone Number) (Fax Number)

SPECIFICATIONS

1. **PURPOSE AND SCOPE:** The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Office of Technology (WVOT) to establish a contract for the one-time purchase of Core Switches, Top of Rack SFP Switches, and Top of Rack UTP switches. The equipment will be installed by the Office of Technology in a WVOT Data Center (Building 6) facility located in Kanawha County, West Virginia.

2. **DEFINITIONS:** The terms listed below shall have the meanings assigned to them below. Additional definitions can be found in section 2 of the General Terms and Conditions.

   2.1 **"BFD"** means BiDirectional Forwarding Detection.

   2.2 **"BGP"** means Border Gateway Protocol.

   2.3 **"Business Hours"** means Monday – Friday 8:00 AM through 5:00 PM EST excluding weekends and Federal and State holidays. State Holidays are as follows:

   - New Year's Day (January 1)
   - Martin Luther King Day (Third Monday in January)
   - President's Day (Third Monday in February)
   - Memorial Day (Last Monday in May)
   - West Virginia Day (June 20)
   - Independence Day (July 4)
   - Labor Day (First Monday in September)
   - Columbus Day (Second Monday in October)
   - Veterans Day (November 11)
   - Thanksgiving (Fourth Thursday in November)
   - Day After Thanksgiving (Fourth Friday in November)
   - Christmas Day (December 25)

   2.4 **"Contract Item"** means networking equipment and professional services for WVOT Data Centers as more fully described by these specifications.

   2.5 **"EIGRP"** means Enhanced Interior Gateway Routing Protocol.

   2.6 **"GE SFP"** means Gigabit Ethernet Small Form Factor Pluggable.

   2.7 **"LC Multi-Mode"** means Line Card Multi-Mode.

   2.8 **"MSDP"** means Multicast Source Discovery Protocol.

   2.9 **"OSPF"** means Open Shortest Path First.

   2.10 **"PIM-SM"** means Protocol Independent Multicast – Sparse Mode.

2.11 **"Pricing Page"** means the pages, contained in wvOASIS or attached as Exhibit A, upon which Vendor should list its proposed price for the Contract Items.

2.12 **"QSFP"** means Quad Small Form Factor Pluggable.

2.13 **"RIPv2"** means Routing Information Protocol version 2.

2.14 **"Solicitation"** means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.

2.15 **"SR-BiDi"** means Short Reach - Bi Directional Bus.

2.16 **"SSM"** means Single State Mode.

2.17 **"vPC"** means Virtual Port-Channel.

3. **GENERAL REQUIREMENTS:**

3.1 **Mandatory Contract Item Requirements:** Contract Item must meet or exceed the mandatory requirements listed below.

NETWORKING EQUIPMENT

3.1.1 **Contract Item #1 – Cisco 2xNexus Core Switches 9336C-FX2, or Equal**

3.1.1.1 Vendor must provide a quantity of one (1) 2xNexus 9336C-FX2 w/ 8x 100G Optics, bundle (part #: **N9K-C9336C-FX2-B2**), or Equal.

3.1.1.2 Each switch in the bundle must contain the following features:

3.1.1.2.1 One Rack Unit (1RU) Switch with 36 40/100-Gbps QSFP28 ports supporting 10/25/40/100 Gbps QSFP28 and wire-rate MACsec encryption

3.1.1.2.2 Redundant, hot-swappable power supplies and fan trays

3.1.1.2.3 Support In-Service Software Upgrades (ISSU)

3.1.1.2.4 Support Layer 2 multipathing via Virtual port Channel technology (VPC).

3.1.1.2.5 Support the following protocol suites:
- BGP
- OSPF
- EIGRP
- RIPv2
- PIM-SM

- SSM
- MSDP

3.1.1.3 Vendor must include the following networking components, software, and licensing, or Equal.

3.1.1.3.1 A quantity of one (1) Nexus 9336C-FX2 bundle PID, Product number: **N9K-C9336C-FX2-B**, or Equal

3.1.1.3.2 A quantity of one (1) Nexus 9500, 9300, 3000 Base NX-OS Software Rel 9.2.3, Product number: **NXOS-9.2.3**, or Equal

3.1.1.3.3 A quantity of one (1) Nexus 3K/9K Fixed Accessory Kit, 1RU front and rear removal, Product number: **NXK-ACC-KIT-1RU**, or Equal

3.1.1.3.4 A quantity of three (3) Nexus Fan, 65CFM, port side exhaust airflow, Product number: **NXA-FAN-65CFM-PE**, or Equal

3.1.1.3.5 A quantity of two (2) Nexus AC 1100W PSU - Port Side Exhaust, Product number: **NXA-PAC-1100W-PE2**, or Equal

3.1.1.3.6 A quantity of two (2) Power Cord, 125VAC 13A NEMA 5-15 Plug, North America, Product number: **CAB-9K12A-NA**, or Equal

3.1.1.3.7 A quantity of one (1) PID to select QSFP-100G-SR-BD Optic in the bundle, Product number: **NXK-PICK-BIDI**, or Equal

3.1.1.3.8 A quantity of four (4) 100G and 40GBASE SR-BiDi QSFP Transceiver, LC, 100m OM4 MMF, Product number: **QSFP-40/100-SRBD**, or Equal

3.1.1.3.9 A quantity of one (1) Nexus 9336C-FX2 bundle PID, Product number: **N9K-C9336C-FX2-B**, or Equal

3.1.1.3.10 A quantity of one (1) Nexus 9500, 9300, 3000 Base NX-OS Software Rel 9.2.3, Product number: **NXOS-9.2.3,** or Equal

3.1.1.3.11 A quantity of one (1) Nexus 3K/9K Fixed Accessory Kit, 1RU front and rear removal, Product number: **NXK-ACC-KIT-1RU**, or Equal

3.1.1.3.12 A quantity of three (3) Nexus Fan, 65CFM, port side exhaust airflow, Product number: **NXA-FAN-65CFM-PE**, or Equal

3.1.1.3.13 A quantity of two (2) Nexus AC 1100W PSU - Port Side Exhaust, Product number: **NXA-PAC-1100W-PE2**, or Equal

3.1.1.3.14 A quantity of two (2) Power Cord, 125VAC 13A NEMA 5-15 Plug, North America, Product number: **CAB-9K12A-NA**, or Equal

3.1.1.3.15 A quantity of one (1) PID to select QSFP-100G-SR-BD Optic in the bundle, Product number: **NXK-PICK-BIDI**, or Equal

3.1.1.3.16 A quantity of four (4) 100G and 40GBASE SR-BiDi QSFP Transceiver, LC, 100m OM4 MMF, Product number: **QSFP-40/100-SRBD**, or Equal

3.1.1.3.17 A quantity of one (1) LAN Enterprise License for Nexus 9300 Platform, Product number: **N93-LAN1K9**, or Equal

3.1.1.3.18 A quantity of one (1) SWSS UPGRADES LAN Enterprise License for Nexus 9300 Pl, Product number: **CON-ECMU-N93LAN**, or Equal

3.1.1.3.19 A quantity of one (1) PID to select LAN Enterprise License for Nexus 9300 Platform, Product number: **N93-LAN1K9**, or Equal

3.1.1.3.20 A quantity of one (1) SWSS UPGRADES LAN Enterprise License for Nexus 9300 Pl, Product number: **CON-ECMU-N93LAN**, or Equal

3.1.1.3.21 A quantity of one (1) 100GBASE-CR4 Passive Copper Cable, 1m, Product number: **QSFP-100G-CU1M**, or Equal

3.1.2 Contract Item #2 – 2xNexus Top of Rack SFP+ Switches, Cisco 93180YC-EX, or Equal

3.1.2.1 Vendor must provide a quantity of one (1) 2xNexus Top of Rack SFP+ Switches, Cisco 93180YC-EX bundle, (part #: **N9K-C93180-EX-B24C**) or Equal.

3.1.2.2 Each switch in the bundle must contain the following features:

3.1.2.2.1 One Rack Unit (1RU) Switch with 48 1/10/25-Gbps downlink fiber ports and six 40/100-Gbps QSFP28 uplink ports

3.1.2.2.2 Redundant, hot-swappable power supplies and fan trays

3.1.2.2.3 Support Layer 2 multipathing via Virtual port Channel technology (VPC).

3.1.2.2.4 Support the following protocol suites:

- BGP
- OSPF
- EIGRP
- RIPv2
- PIM-SM
- SSM
- MSDP

3.1.2.3 Vendor must include the following networking components, software, and licensing, or Equal.

3.1.2.3.1 A quantity of one (1) Nexus 93180YC-EX bundle PID, Product number: **N9K-C93180YC-EX-B,** or Equal

3.1.2.3.2 A quantity of one (1) PID to select QSFP-100G-SR-BD Optic in the bundle, Product number: **NXK-PICK-BIDI**, or Equal

3.1.2.3.3 A quantity of four (4) 100G and 40GBASE SR-BiDi QSFP Transceiver, LC, 100m OM4 MMF, Product number: **QSFP-40/100-SRBD**, or Equal

3.1.2.3.4 A quantity of two (2) Nexus NEBs AC 650W PSU - Port Side Exhaust, Product number: **NXA-PAC-650W-PE**, or Equal

3.1.2.3.5 A quantity of four (4) Nexus 2K/3K/9K Single Fan, port side exhaust airflow, Product number: **NXA-FAN-30CFM-F**, or Equal

3.1.2.3.6 A quantity of one (1) Nexus 93180YC-EX bundle PID, Product number: **N9K-C93180YC-EX-B**, or Equal

3.1.2.3.7 A quantity of one (1) PID to select QSFP-100G-SR-BD Optic in the bundle, Product number: **NXK-PICK-BIDI**, or Equal

3.1.2.3.8 A quantity of four (4) 100G and 40GBASE SR-BiDi QSFP Transceiver, LC, 100m OM4 MMF, Product number: **QSFP-40/100-SRBD**, or Equal

3.1.2.3.9 A quantity of two (2) Nexus NEBs AC 650W PSU - Port Side Exhaust, Product number: **NXA-PAC-650W-PE**, or Equal

3.1.2.3.10 A quantity of four (4) Nexus 2K/3K/9K Single Fan, port side exhaust airflow, Product number: **NXA-FAN-30CFM-F**, or Equal

3.1.2.3.11 A quantity of two (2) Nexus 9500, 9300, 3000 Base NX-OS Software Rel 9.2.3, Product number: **NXOS-9.2.3**, or Equal

3.1.2.3.12 A quantity of one (1) Nexus 3K/9K Fixed Accessory Kit, Product number: **N3K-C3064-ACC-KIT**, or Equal

3.1.2.3.13 A quantity of two (2) Power Cord, 125VAC 13A NEMA 5-15 Plug, North America, Product number: **CAB-9K12A-NA**, or Equal

3.1.2.3.14 A quantity of one (1) Nexus 9500, 9300, 3000 Base NX-OS Software Rel 9.2.3, Product number: **NXOS-9.2.3**, or Equal

3.1.2.3.15 A quantity of one (1) Nexus 3K/9K Fixed Accessory Kit, Product number: **N3K-C3064-ACC-KIT**, or Equal

3.1.2.3.16 A quantity of two (2) Power Cord, 125VAC 13A NEMA 5-15 Plug, North America, Product number: **CAB-9K12A-NA**, or Equal

3.1.3   Contract Item #3 – 2xNexus Top of Rack 10GBase-T Switch, Cisco 93108TC-EX, or Equal

3.1.3.1 Vendor must provide a quantity of five (5) 2xNexus Top of Rack 10GBase-T Switch, Cisco 93108TC-EX bundles, (part #: **N9K-C93108-EX-B24C**) or Equal.

3.1.3.2 Vendor must include all networking components, software, and licensing, or Equal listed in Exhibit A.

3.1.3.3 Each switch must contain the following features:

3.1.3.3.1 One Rack Unit (1RU) Switch with 48 100M/1/10GBASE-T downlink ports and six 40/100-Gbps QSFP28 uplink ports

3.1.3.3.2 Redundant, hot-swappable power supplies and fan trays

3.1.3.3.3 Support Layer 2 multipathing via Virtual port Channel technology (VPC).

3.1.3.3.4 Support the following protocol suites:
- BGP
- OSPF
- EIGRP
- RIPv2
- PIM-SM
- SSM
- MSDP

3.1.3.4 Vendor must include the following networking components, software, and licensing, or Equal.

3.1.3.4.1 A quantity of five (5) Nexus 93108TC-EX bundle PID, Product number: **N9K-C93108TC-EX-B**, or Equal

3.1.3.4.2 A quantity of five (5) PID to select QSFP-100G-SR-BD Optic in the bundle, Product number: **NXK-PICK-BIDI**, or Equal

3.1.3.4.3 A quantity of twenty (20) 100G and 40GBASE SR-BiDi QSFP Transceiver, LC, 100m OM4 MMF, Product number: **QSFP-40/100-SRBD**, or Equal

3.1.3.4.4 A quantity of ten (10) Power Cord, 125VAC 13A NEMA 5-15 Plug, North America, Product number: **CAB-9K12A-NA**, or Equal

3.1.3.4.5 A quantity of ten (10) Nexus NEBs AC 650W PSU - Port Side Exhaust, Product number: **NXA-PAC-650W-PE**, or Equal

3.1.3.4.6 A quantity of ten (10) Power Cord, 125VAC 13A NEMA 5-15 Plug, North America, Product number: **CAB-9K12A-NA**, or Equal

3.1.3.4.7 A quantity of ten (10) Nexus 9500, 9300, 3000 Base NX-OS Software Rel 9.2.3, Product number: **NXOS-9.2.3**, or Equal

3.1.3.4.8 A quantity of ten (10)) Nexus 3K/9K Fixed Accessory Kit, Product number: **N3K-C3064-ACC-KIT**, or Equal

3.1.3.4.9 A quantity of twenty (20) Nexus 2K/3K/9K Single Fan, port side exhaust airflow, Product number: **NXA-FAN-30CFM-F**, or Equal

3.1.3.4.10 A quantity of twenty (20) Nexus 2K/3K/9K Single Fan, port side exhaust airflow, Product number: **NXA-FAN-30CFM-F**, or Equal

3.1.4 Contract Item #4 – Cisco QSFP Transceiver Module – 40 Gigabit LAN, or Equal

3.1.4.1 Vendor must provide a quantity of sixteen (16) Cisco QSFP Transceiver Module – 40 Gigabit LAN, 100 Gigabit Ethernet (part #: **QSFP-40/100-SRBD=)** or Equal.

3.1.4.2 Each transceiver module must contain the following features:

3.1.4.2.1 Connector type: LC multi-mode

3.1.4.2.2 Connectivity: Wired

3.1.4.2.3	Data Link Protocol: 100 Gigbit Ethernet, 40 Gigabit Ethernet
3.1.4.2.4	Form Factor: Plug-in module
3.1.4.2.5	Max Distance: 328ft
3.1.4.2.6	Type: QSFP + transceiver module

3.1.5 Contract Item #5 – Cisco SFP Transceiver Module – 10 Gigabit LAN, or Equal

3.1.5.1	Vendor must provide a quantity of forty-eight (48) Cisco SFP Transceiver Module – 10 Gigabit LAN (part #: **SFP-10G-SR=)** or Equal.
3.1.5.2	Each transceiver module must contain the following features:

3.1.5.2.1	Connector type: LC multi-mode
3.1.5.2.2	Connectivity: Wired
3.1.5.2.3	Data Link Protocol: 10 Gigbit Ethernet
3.1.5.2.4	Form Factor: Plug-in module
3.1.5.2.5	Type: SFP + transceiver module

3.1.6 HARDWARE SUPPORT

3.1.6.1 Contract Item #6 - Cisco SMARTNet Total Care Service 8x5xNBD, or Equal

3.1.6.1.1 The Vendor must provide coverage for all Cisco, or Equal hardware identified for **Contract Item #1, Contract Item #2**, **Contract Item #3**, and **Contract Item #4** for a minimum of 60 months from the date the Agency formally accepts the equipment.

3.1.6.2 The Vendor must be listed as a Cisco Partner.

3.1.6.3 The Vendor must register the Cisco hardware listed **Contract Item #1, Contract Item #2**, **Contract Item #3**, **Contract Item #4** with Cisco SMARTNet, or Equal.

3.1.6.3.1 Vendor must provide confirmation from Cisco that hardware has been registered.

3.1.6.4 The Vendor must provide WVOT staff 24-hour direct access to the Cisco Technical Assistance Center (TAC), or Equal to facilitate opening support cases on all covered hardware.

3.1.6.5 The Vendor must provide WVOT staff 24-hour direct access to Cisco's knowledge library and support tools.

3.1.6.6 The Vendor solution must provide WVOT staff access to the Cisco IOS Software Center, or Equal for the purpose of downloading IOS releases on all covered hardware.

3.1.6.7 The Vendor must register WVOT staff as administrators of the contract(s) in Cisco's Service Access Management Tool. Cisco Connect Online (CCO) IDs, or Equal to be provided at the time of award.

3.1.6.8 The Vendor must replace hardware by Next-Business-Day (NBD) on Cisco equipment covered by SMARTNet 8x5xNBD, or Equal as defined in the SMARTnet service.

> **3.1.6.8.1** The Vendor must ship replacement within a maximum of 24 hours (Next Business Day) after failure to resolve technical issues using telephone support. The replacement items must be shipped before the close of the next business day.

3.1.6.9 Replacement parts must be received between the hours of 8:00AM through 5:00PM Eastern Standard Time, Monday through Friday excluding State and Federal holidays and weekends.

> **3.1.6.9.1** Only replacement parts obtained thru Cisco's Return Material Authorization (RMA), or Equal process will be accepted. All hardware must be certified by Cisco, or Equal as new or functional at the same level as new.

3.1.6.10 Should the Vendor find a line item unrepairable and need replaced, a formal notification via a change order issued by West Virginia Office of Technology to capture changes in equipment via formal memo. Maintenance subscription and coverage will be transferred to any item replaced thru Cisco's RMA process, or Equal.

3.1.7 Contract Item #7 – Extended Service Agreement – Cisco SMARTNet Total Care Service 8x5xNBD, CON-SNT-N9336FB or Equal

3.1.7.1 The Vendor must provide a quantity of one (1) license of Cisco SMARTNet Total Care Service 8x5xNBD, **CON-SNT-N9336FB** or Equal for Nexus 9336C-FX2 bundle PID.

3.1.7.1.1 The Vendor must register the Cisco hardware listed in Section 3.1.2 Contract Item #2 – Cisco Nexus Core Switches (part #: N9K-C9336C-FX2-B2) with Cisco SMARTNet, or Equal.

3.1.8 Contract Item #8 – Extended Service Agreement – Cisco SMARTNet Total Care Service 8x5xNBD, CON-SNT-N9336FB2 or Equal

3.1.8.1 The Vendor must provide a quantity of one (1) license of Cisco SMARTNet Total Care Service 8x5xNBD, **CON-SNT-N9336FB2** or Equal for Nexus 9336C-FX2 w/ 8x 100G Optics.

3.1.8.1.1 The Vendor must register the Cisco hardware listed in Section 3.1.2 Contract Item #2 – Cisco Nexus Core Switches (part #: N9K-C9336C-FX2-B2) with Cisco SMARTNet, or Equal.

3.1.9 Contract Item #9 – Extended Service Agreement – Cisco SMARTNet Total Care Service 8x5xNBD, CON-SNT-93180YBN or Equal

3.1.9.1 The Vendor must provide a quantity of one (1) license of Cisco SMARTNet Total Care Service 8x5xNBD, **CON-SNT-93180YBN** or Equal for Nexus 93180YC-EX bundle.

3.1.9.1.1 The Vendor must register the Cisco hardware listed in Section 3.1.3 Contract Item #3 – Top of Rack SFP+ Switches, Cisco 93180YC-EX, (part #: N9K-C93180-EX-B24C) with Cisco SMARTNet, or Equal.

3.1.10 Contract Item #10 – Extended Service Agreement – Cisco SMARTNet Total Care Service 8x5xNBD, CON-SNT- 93180B24 or Equal

3.1.10.1 The Vendor must provide a quantity of one (1) license of Cisco SMARTNet Total Care Service 8x5xNBD, **CON-SNT- 93180B24** or Equal Nexus 93180YC-EX w/ 4x QSFP-100G-PSM4-.

3.1.10.1.1 The Vendor must register the Cisco hardware listed in Section 3.1.3 Contract Item #3 – Top of Rack SFP+ Switches, Cisco 93180YC-EX, (part #: N9K-C93180-EX-B24C) with Cisco SMARTNet, or Equal.

3.1.11 Contract Item #11 – Extended Service Agreement – Cisco SMARTNet Total Care Service 8x5xNBD, CON-SNT-93108TBN or Equal

    3.1.11.1 The Vendor must provide a quantity of five (5) license of Cisco SMARTNet 8x5xNBD, **CON-SNT-93108TBN** or Equal for Nexus 93108TC-EX bundle.

        3.1.11.1.1 The Vendor must register the Cisco hardware listed in Section 3.1.4 Contract Item #4 – Top of Rack 10GBase-T Switch, Cisco 93108TC-EX, (part #: N9K-C93108-EX-B24C) with Cisco SMARTNet, or Equal.

3.1.12 Contract Item #12 – Extended Service Agreement – Cisco SMARTNet Total Care Service 8x5xNBD, CON-SNT-93108B24 or Equal

    3.1.12.1 The Vendor must provide a quantity of five (5) license of Cisco SMARTNet 8x5xNBD, **CON-SNT-93108B24** or Equal for Nexus 93108TC-EX w/ 4x QSFP-100G-PSM4-.

        3.1.12.1.1 The Vendor must register the Cisco hardware listed in Section 3.1.4 Contract Item #4 – Top of Rack 10GBase-T Switch, Cisco 93108TC-EX, (part #: N9K-C93108-EX-B24C) with Cisco SMARTNet, or Equal.

3.1.13 Contract Item #13 – Training Services

    3.1.13.1 The Vendor must provide a quantity (160) vouchers and/or learning credits (TRN-CLC-004) or Equal.

        3.1.13.1.1 The Vendor must provide a minimum quantity of forty (40) hours technical training for WVOT Engineers on, or Equal.

        3.1.13.1.2 The Vendor must technical training that is from a Certified Cisco Learning Partner.

        3.1.13.1.3 The Vendor must provide real-time instructor-led training. Training format may be delivered through a live virtual classroom

        3.1.13.1.4 The Vendor must provide course materials and training must be presented in English and provide from a Certified Cisco Learning Partner.

3.1.14 Alternate 'or Equal' Submission

3.1.14.1 Vendor must include alternate brand information with alternative part numbers in comment section of Pricing Page on wvOASIS. The Vendor should include alternate brand information documentation with bid response, but documentation may be requested prior to award.

3.1.14.2 Vendor will assume any costs related to any required installation of new software, hardware and/or training of the alternate submission provided as part of this agreement.

3.1.15 Shipping Authorization

3.1.15.1 The Vendor will not ship items until the WVOT authorizes it to do so in writing. Once the WVOT authorizes the shipping of the equipment, the Vendor has fifteen (15) working days to deliver to the following address: Office of Technology, 908 Bullitt Street, Charleston, WV 25301-1002.

3.1.16 Acceptance of System

3.1.16.1 If the test period produces no issues at a minimum, the agency will issue a Letter of Acceptance of the system, and the contract and warranty period would start at that time.

Prior to an acceptance of the system the following criteria must be met: (1.) successful testing of all components, validating full functionality.

Once acceptance of the system is agreed to by Agency and the Vendor. The Agency will issue a request for Change Order to the West Virginia Purchasing Division stating acceptance of the system thereby beginning the first (1) year warranty.

4. CONTRACT AWARD:

4.1 **Contract Award:** The Contract is intended to provide Agencies with a purchase price for the Contract Items. The Contract shall be awarded to the Vendor that provides the Contract Items meeting the required specifications for the lowest overall total cost as shown on the Pricing Pages.

4.2 **Pricing Page:** Vendor should complete the attached Exhibit A - Pricing Page by providing the unit cost for each contract item. The calculated Overall Total Cost must be entered into wvOASIS pricing section for commodity line 1. The Vendor should complete the Pricing Page in full as failure to complete the Pricing Page in its entirety may result in Vendor's bid being disqualified.

Vendor should provide with their bid a copy of any and all Software Terms and Conditions or licenses that the State of West Virginia or the Agency will have to agree to or accept as a part of this solicitation. This information will be required before contract is issued.

Vendor should include a copy of any Maintenance Terms and Conditions or Licenses that the State of West Virginia or the Agency will be required to agree to and accept as a part of this solicitation. This information will be required before contract is issued.

Any product or service not on the Agency provided Cost Sheet will not be allowable. The state cannot accept alternate pricing pages, failure to use Exhibit A Cost Sheet could lead to disqualification of vendors bid.

Vendor should type or electronically enter the information into the Pricing Page to prevent errors in the evaluation.

5. PAYMENT:

5.1 Payment: Vendor shall accept payment in accordance with the payment procedures of the State of West Virginia.

6. DELIVERY AND RETURN:

6.1 Shipment and Delivery: Vendor shall ship the Contract Items immediately after shipping notice to proceed. Vendor shall deliver the Contract Items within fifteen (15) working days after receiving a shipping notice to proceed as per section 3.1.22. Contract Items must be delivered to Agency at Office of Technology, 908 Bullitt Street, Charleston, WV 25301-1002.

6.2 Late Delivery: The Agency placing the order under this Contract must be notified in writing if the shipment of the Contract Items will be delayed for any reason. Any delay in delivery that could cause harm to an Agency will be grounds for cancellation of the Contract, and/or obtaining the Contract Items from a third party.

Any Agency seeking to obtain the Contract Items from a third party under this provision must first obtain approval of the Purchasing Division.

6.3 Delivery Payment/Risk of Loss: Vendor shall deliver the Contract Items F.O.B. destination to the Agency's location.

6.4 **Return of Unacceptable Items:** If the Agency deems the Contract Items to be unacceptable, the Contract Items shall be returned to Vendor at Vendor's expense and with no restocking charge. Vendor shall either make arrangements for the return within five (5) days of being notified that items are unacceptable, or permit the Agency to arrange for the return and reimburse Agency for delivery expenses. If the original packaging cannot be utilized for the return, Vendor will supply the Agency with appropriate return packaging upon request. All returns of unacceptable items shall be F.O.B. the Agency's location. The returned product shall either be replaced, or the Agency shall receive a full credit or refund for the purchase price, at the Agency's discretion.

6.5 **Return Due to Agency Error**: Items ordered in error by the Agency will be returned for credit within 30 days of receipt, F.O.B. Vendor's location. Vendor shall not charge a restocking fee if returned products are in a resalable condition. Items shall be deemed to be in a resalable condition if they are unused and in the original packaging. Any restocking fee for items not in a resalable condition shall be the lower of the Vendor's customary restocking fee or 5% of the total invoiced value of the returned items.

7. VENDOR DEFAULT:

7.1 The following shall be considered a vendor default under this Contract.

7.1.1. Failure to provide Contract Items in accordance with the requirements contained herein.
7.1.2. Failure to comply with other specifications and requirements contained herein.
7.1.3. Failure to comply with any laws, rules, and ordinances applicable to the Contract Services provided under this Contract.
7.1.4. Failure to remedy deficient performance upon request.

7.2 The following remedies shall be available to Agency upon default.

7.2.1 Immediate cancellation of the Contract.
7.2.2 Immediate cancellation of one or more release orders issued under this Contract.
7.2.3 Any other remedies available in law or equity.

8. MISCELLANEOUS:

8.1. Contract Manager: During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

Contract Manager:	Frank Durucan
Telephone Number:	201-559-1474
Fax Number:	973-807-9252
Email Address:	frank@vodanetsystems.com

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

> **EXCEPTION:** The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

> **DEFINITIONS:**

> **"Debt"** means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

> **"Employer default"** means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

> **"Related party"** means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: _____

Authorized Signature: _____ Date: _____

State of _____

County of _____, to-wit:

Taken, subscribed, and sworn to before me this____day of _____, 20____.

My Commission expires_____, 20____.

AFFIX SEAL HERE   **NOTARY PUBLIC** _____

Estimate

VODANET SYSTEMS
VOICE | DATA | NETWORK

Date	Estimate #
3/22/2021	19592

70 Commercial Ave
Unit C
Moonachie, NJ 07074

Name / Address
WV Office of Technology
908 Bullitt St
Charleston Wv 25301-1002

	Project

Item	Description	Qty	Cost	Total
QFX5120-32C-AFI-NEW	Juniper Networks : 32x100G 1U AC PSU Side Intake and Port Side Exhaust	1	7,590.00	7,590.00
SVC-ND-QFX51-32C	Juniper Networks : Juniper Care Next Day Support for QFX5120-32C-AFI - 5-Year	1	892.98	892.98
S-QFX5K-C2-A2-P	Juniper Networks : Perpetual Adv2 Lic for Class 2 products	1	7,969.50	7,969.50
SVC-COR-QFX5KC2A2P	Juniper Networks : JNPR Care Core Supt S-QFX5K-C2-A2-P	1	1,035.00	1,035.00
EX-4PST-RMK	RCK MNT,4-POST ADJ	1	125.00	125.00
QFX520048Y-FAN-AI	FAN AFI for QFX5200	6	0.00	0.00
QFX520048Y-650W-AC-AFI	AC AFI 650W PSU for QFX5200	2	0.00	0.00
CBL-EX-PWR-C13-US	CBL-EX-PWR-C13-US	2	0.00	0.00
JNP-QSFP-100G-BXSR	Juniper Networks : QSFP28 form factor, 100G Bi-Directional Optic, 100M over OM3 (SR)	4	684.13	2,736.52
QFX5120-32C-AFI-NEW	Juniper Networks : 32x100G 1U AC PSU Side Intake and Port Side Exhaust	1	7,590.00	7,590.00
SVC-ND-QFX51-32C	Juniper Networks : Juniper Care Next Day Support for QFX5120-32C-AFI - 5-Year	1	892.98	892.98
S-QFX5K-C2-A2-P	Juniper Networks : Perpetual Adv2 Lic for Class 2 products	1	7,969.50	7,969.50
SVC-COR-QFX5KC2A2P	Juniper Networks : JNPR Care Core Supt S-QFX5K-C2-A2-P	1	1,035.00	1,035.00
EX-4PST-RMK	RCK MNT,4-POST ADJ	1	125.00	125.00
QFX520048Y-FAN-AI	FAN AFI for QFX5200	6	0.00	0.00
QFX520048Y-650W-AC-AFI	AC AFI 650W PSU for QFX5200	2	0.00	0.00
CBL-EX-PWR-C13-US	CBL-EX-PWR-C13-US	2	0.00	0.00
JNP-QSFP-100G-BXSR	Juniper Networks : QSFP28 form factor, 100G Bi-Directional Optic, 100M over OM3 (SR)	4	684.13	2,736.52

Total

Customer Signature

Estimate

VODANET SYSTEMS
VOICE | DATA | NETWORK

Date	Estimate #
3/22/2021	19592

70 Commercial Ave
Unit C
Moonachie, NJ 07074

Name / Address
WV Office of Technology
908 Bullitt St
Charleston Wv 25301-1002

	Project

Item	Description	Qty	Cost	Total
QFX5120-48Y-AFI-NEW	Juniper Networks : 48x25G+8x100G 1U AC PSU side intake and Port side exhaust	1	8,326.92	8,326.92
SVC-ND-QFX51-48Y	Juniper Networks : Juniper Care Next Day Support for QFX5120-48Y - 1-Year	1	975.26	975.26
JNP-QSFP-100G-BXSR	Juniper Networks : QSFP28 form factor, 100G Bi-Directional Optic, 100M over OM3 (SR)	4	684.13	2,736.52
JPSU-650W-AC-AI	Juniper 650W AC Power Supply (FRU Back to Front Air Flow)	2	0.00	0.00
QFX5110-FANAFI	QFX5110-FANAFI FAN Model, back-to-front airflow	5	0.00	0.00
EX-4PST-RMK	RCK MNT,4-POST ADJ,EX2200/3200/3300/4200	1	125.00	125.00
CBL-EX-PWR-C13-US	CBL-EX-PWR-C13-US	2	0.00	0.00
QFX5120-48Y-AFI-NEW	Juniper Networks : 48x25G+8x100G 1U AC PSU side intake and Port side exhaust	1	8,326.92	8,326.92
SVC-ND-QFX51-48Y	Juniper Networks : Juniper Care Next Day Support for QFX5120-48Y - 1-Year	1	975.26	975.26
JNP-QSFP-100G-BXSR	Juniper Networks : QSFP28 form factor, 100G Bi-Directional Optic, 100M over OM3 (SR)	4	684.13	2,736.52
JPSU-650W-AC-AI	Juniper 650W AC Power Supply (FRU Back to Front Air Flow)	2	0.00	0.00
QFX5110-FANAFI	QFX5110-FANAFI FAN Model, back-to-front airflow	5	0.00	0.00
EX-4PST-RMK	RCK MNT,4-POST ADJ	1	125.00	125.00
CBL-EX-PWR-C13-US	CBL-EX-PWR-C13-US	2	0.00	0.00
QFX5120-48T-AFI-NEW	Juniper Networks : 48X10GT+6X100G 1U AC PSU side intake and port side exhaust	5	7,137.36	35,686.80
SVC-ND-QFX51-48T	Juniper Networks : JNPR Care Next Day Support for QFX5120-48T - 5 Years	5	831.63	4,158.15

	Total

Customer Signature

Estimate

Date	Estimate #
3/22/2021	19592

70 Commercial Ave
Unit C
Moonachie, NJ 07074

Name / Address

WV Office of Technology
908 Bullitt St
Charleston Wv 25301-1002

	Project

Item	Description	Qty	Cost	Total
JNP-QSFP-100G-BXSR	Juniper Networks : QSFP28 form factor, 100G Bi-Directional Optic, 100M over OM3 (SR)	20	684.13	13,682.60
JPSU-650W-AFI	Juniper 650W Power Supply (FRU Side to Port Side Air Flow)	10	0.00	0.00
QFX5110-FANAFI	QFX5110-FANAFI FAN Model, back-to-front airflow	25	0.00	0.00
EX-4PST-RMK	RCK MNT,4-POST ADJ	5	125.00	625.00
CBL-EX-PWR-C13-US	CBL-EX-PWR-C13-US	10	0.00	0.00
QFX5120-48T-AFI-NEW	Juniper Networks : 48X10GT+6X100G 1U AC PSU side intake and port side exhaust	5	7,137.36	35,686.80
SVC-ND-QFX51-48T	Juniper Networks : JNPR Care ND Supt QFX5120-48T 5 Years	5	831.63	4,158.15
JNP-QSFP-100G-BXSR	Juniper Networks : QSFP28 form factor, 100G Bi-Directional Optic, 100M over OM3 (SR)	20	684.13	13,682.60
JPSU-650W-AFI	Juniper 650W Power Supply (FRU Side to Port Side Air Flow)	10	0.00	0.00
QFX5110-FANAFI	QFX5110-FANAFI FAN Model, back-to-front airflow	25	0.00	0.00
EX-4PST-RMK	RCK MNT,4-POST ADJ,EX2200/3200/3300/4200	5	125.00	625.00
CBL-EX-PWR-C13-US	CBL-EX-PWR-C13-US	10	0.00	0.00
JNP-QSFP-100G-BXSR	Juniper Networks : QSFP28 form factor, 100G Bi-Directional Optic, 100M over OM3 (SR)	16	684.13	10,946.08
SFPP-10G-SR-C	Juniper Networks : SFP+, 10G-SR Transceiver	48	28.56	1,370.88
EDU-JTC-100-AMER	Education - Juniper Training Credit - $100	100	95.00	9,500.00

Total

Customer Signature

VOICE | DATA | NETWORK

VODANET SYSTEMS

Estimate

Date	Estimate #
3/22/2021	19592

70 Commercial Ave
Unit C
Moonachie, NJ 07074

Name / Address
WV Office of Technology
908 Bullitt St
Charleston Wv 25301-1002

	Project

Item	Description	Qty	Cost	Total
	Correction for Exhibit A - Pricing Page - Line Item 3.1.3

Each Cisco Bundle SKU #N9K-C93108-EX-B24C (requested qty: 5) includes 2 x Nexus 93108TC-EX switch. However, configuration of this bundle (from 3.1.3.4 to 3.1.3.4.10) only includes 1 line item for N9K-C93108TC-EX-B for 5 qty, whereas there should be 2 x N9K-C93108TC-EX-B for 5 qty, totaling 10 x N9K-C93108TC-EX switch. As modifying the Excel file is not allowed, we were able to only include 5 equivalant switch, instead of 10. For this reason, we are including this quote for correct pricing. For any questions, please contact frank@vodanetsystems.com. | | | |

| **Total** | | | | $195,147.46 |

Customer Signature _____

QFX5120 ETHERNET SWITCH

Product Overview

The QFX5120 Switch delivers rich, low latency Layer 2/Layer 3 features and advanced EVPN-VXLAN capabilities, making it an ideal data center top-of-rack and aggregation switch for campus enterprise deployments. Featuring L3 gateway capabilities for routing between virtualized and bare-metal servers, the QFX5120 is designed for extremely agile data centers that require support for overlay/underlay network architectures. Native 25GbE with 100GbE uplink ports on the QFX5120-48Y and QFX5120-48YM, 10GbE/1GbE copper with 100GbE uplink ports on the QFX5120-48T, and 32 100GbE ports on the QFX5120-32C make the QFX5120 family ideal for spine-and-leaf network deployments.

Product Description

The Juniper Networks® QFX5120 Switch delivers high scale, high availability, and high performance for data center and campus deployments. The QFX5120 switch is a versatile routing and switching platform addressing higher server access speed and campus distribution use cases while offering high-density 1GbE/10GbE/25GbE and 100GbE uplinks for collapsed spine data center or campus core deployments.

Product Options

The QFX5120 Switch includes four compact 1 U platforms—the QFX5120-48Y, the QFX5120-48YM, the QFX5120-48T, and the QFX5120-32C—that provide wire-speed packet performance, very low latency, and a rich set of Junos® operating system features.

QFX5120-48Y

The QFX5120-48Y is a 25GbE/100GbE data center leaf and campus distribution switch featuring:

- 48 25GbE (SFP28)/10GbE (SFP+)/1GbE (SFP) downlink ports
- Eight 100GbE (QSFP28)/40GbE (QSFP+) uplink ports
- Up to 4 Tbps L2 and L3 performance (bidirectional), with latency as low as 550 nanoseconds
- A 2.2 GHz quad-core Intel CPU with 16 GB memory and 50 GB SSD storage

Using breakout cables, each of the eight 100GbE QSFP28 ports can be broken into four 25GbE SFP28 ports, while each 40GbE quad small form-factor pluggable plus (QSFP+) transceiver ports can be broken into four 10GbE small form-factor pluggable plus (SFP+) transceiver ports, increasing the total number of supported 25GbE and 10GbE ports per switch to 80.

QFX5120-48YM

The QFX5120-48YM is a 10GbE/25GbE/100GbE data center leaf and campus distribution switch featuring:

- 48 25GbE (SFP28)/10GbE (SFP+)/1GbE (SFP) downlink ports
- Eight 100GbE (QSFP28)/40GbE (QSFP+) uplink ports
- Up to 4 Tbps L2 and L3 performance (bidirectional), with latency as low as 550 nanoseconds
- Media Access Control Security (MACsec) AES-256 support across all ports
- A 2.9 GHz quad-core Intel CPU with 16 GB memory and 100 GB SSD storage

When using breakout cables, two of the 100GbE QSFP28 ports (ports 50 and 52) can be broken into four 25GbE SFP28 or four 10GbE SFP+ ports, increasing the maximum number of 10GbE/25GbE ports supported to 56. When using breakouts, the total number of all ports on the switch, including 6x100GbE ports and 56x10/25GbE, is 62.

QFX5120-48T

The QFX5120-48T is a 10GbE/100GbE data center leaf and campus distribution switch featuring:

- 48 dual-speed 1GbE/10GbE RJ-45 copper downlink ports
- Six dual-speed 100GbE (QSFP28)/40GbE (QSFP+) uplink ports
- Up to 2.16 Tbps L2 and L3 performance (bidirectional), with latency as low as 550 nanoseconds
- A 2.2 GHz quad-core Intel CPU with 16 GB memory and 100 GB SSD storage

Using breakout cables, each 100GbE QSFP28 port can be broken into four 25GbE SFP28 ports, while each 40GbE QSFP+ port can be broken into four 10GbE SFP+ ports, increasing the total number of 25GbE and 10GbE ports per switch to 72.

QFX5120-32C

The QFX5120-32C is a compact 100GbE data center leaf-and-spine and campus distribution switch featuring:

- 32 100GbE (QSFP28) or 40GbE (QSFP+) uplink ports
- A 2.2 GHz quad-core Intel CPU with 16 GB memory and 64 GB SSD storage
- Up to 6.4 Tbps L2 and L3 performance (bidirectional), with latency as low as 550 nanoseconds

Using breakout cables, each 100GbE QSFP28 port can be broken into four 25GbE SFP28 ports and each 40GbE QSFP+ port can be broken into four 10GbE SFP+ ports, increasing the total number of 25GbE and 10GbE ports per switch to 128.

In addition, all QFX5120 switch models include:

- Support for VXLAN as an L2 or L3 gateway
- Advanced Junos OS features such as Ethernet VPN-Virtual Extensible LAN (EVPN-VXLAN), BGP add-path, L3 VPN, and MPLS
- Feature-rich automation capabilities with support for Python and zero-touch provisioning (ZTP)

Junos OS

The high-performance QFX5120 Switch runs Junos OS, Juniper's powerful and robust network operating system that powers all Juniper switches, routers, and firewalls. Key Junos OS features that enhance the functionality and capabilities of the QFX5120 include:

- Software modularity, with process modules running independently in their own protected memory space and with the ability to do process restarts
- Uninterrupted routing and forwarding, with features such as nonstop active routing (NSR) and nonstop bridging (NSB)
- Commit and rollback functionality that ensures error-free network configurations
- A powerful set of scripts for on-box problem detection, reporting, and resolution

Data Center Deployments

Data centers demand high-speed, low-latency, storage- and I/O-converged networking solutions that maximize performance for physical servers, virtual servers, and storage. The QFX5120 Switch addresses these issues with low-latency, lossless, high-density 10GbE, 25GbE, and 100GbE interfaces on a compact 1 U platform. In addition, the QFX5120 offers EVPN-VXLAN L2 and L3 gateway support, making it an ideal solution for either edge routed or centrally routed overlay deployments in the data center. The QFX5120 also supports flexible back-to-front and front-to-back airflow cooling options, ensuring consistency with server designs for hot-aisle or cold-aisle deployments.

Data Center Server Access

The QFX5120-48Y and QFX5120-48YM support tri-speed 1GbE/10GbE/25GbE, making them a perfect fit for top-of-rack deployments. The 48 ports of native 10GbE/25GbE for server connectivity, plus up to eight 40GbE or 100GbE ports for uplink connectivity, provide very low oversubscription of 1.5:1 from access to aggregation.

The QFX5120-48T supports dual-speed 1GbE/10GbE, also making it a perfect fit for top-of-rack deployments. The 48 native 10GbE RJ-45 copper ports for server connectivity, plus up to six 40GbE or 100GbE ports for uplink connectivity, provide unsubscribed (0.8:1) access-to-aggregation ratio.

The QFX5120-32C can also be used for high-density 25GbE server connectivity, with an option to break out the 100GbE ports into four 25GbE ports.

In Figure 1, the QFX5120 is deployed as a leaf acting as an edge-routed gateway. In this topology, the VXLAN tunnel encapsulation and decapsulation take place on the QFX5120 leaf switches, while Juniper Networks QFX5200-32C or Juniper Networks QFX5210-64C spine switches are used for IP transit. Juniper Networks QFX5110-32Q switches can also be used in the spine to build a 40GbE fabric.
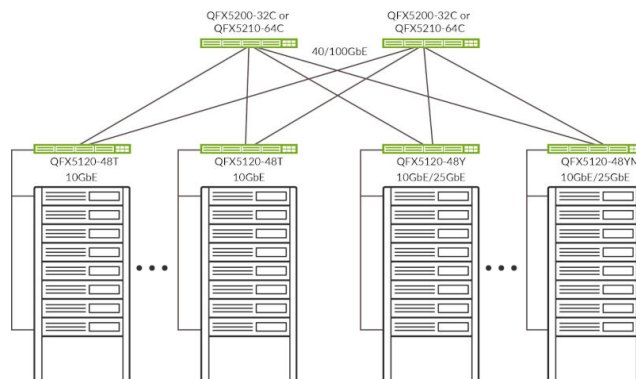

Figure 1: Edge-routed bridging at the leaf with QFX5200-32C/QFX5210-64C as spine switches

In Figure 2, the QFX5120-48YM leaf and Juniper Networks QFX10008 Switch spine are deployed as EVPN-VXLAN switches acting as centrally routed gateways or distributed edge routed gateways. If centrally routed bridging is used, the VXLAN tunnel encapsulation and decapsulation occur on the spine switches for inter-IRB (integrated routing and bridging) symmetric routing purposes. If edge routed bridging is used, the IP first hop gateways are distributed at the leaf-level QFX5120-48YM switches using Type 5 symmetric inter-IRB routing. When using a QFX10000-30C-M MACsec line card installed in a spine QFX10008 Switch working with a leaf QFX5120-48YM switch, the leaf-to-spine architecture offers end-to-end MACsec AES-256 capabilities.
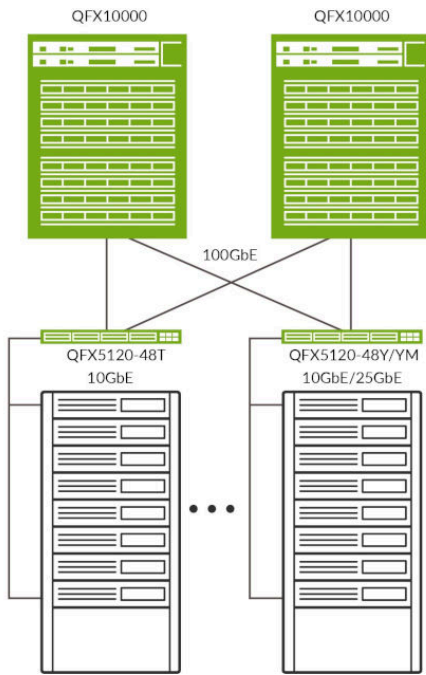
Figure 2: QFX5120-48T and QFX5120-48Y/48YM in a leaf-and-spine deployment

Data Center Spine

The QFX5120-32C, with 32 ports of 100GbE, can serve as the spine in small to medium-sized enterprise data centers. The QFX5120-32C can be deployed in a three-stage IP Clos with EVPN-VXLAN overlay to support as many as 1500 server access ports. The QFX5120-48Y/QFX5120-48YM and QFX5120-32C can also be used as a collapsed spine data center deployment, offering Ethernet segment identifier-link aggregation group (ESI-LAG) connectivity to the rest of the network infrastructure blocks.

All QFX5120 switches can operate in both cut-through and store-and-forward modes, delivering sustained wire-speed switching with sub-microsecond latency and low jitter for any packet size (including jumbo frames) in either mode. With features such as multichassis link aggregation (MC-LAG), the QFX5120 supports active/active server dual-homing and can use full bisectional bandwidth from server to switch.

Equipped with Junos OS, the QFX5120 supports the most advanced and robust routing capabilities in the industry, OSPF for both IPv4 and IPv6, as well as advanced routing capabilities such as IS-IS and BGP. With additional capabilities such as 64-way equal-cost multipath (ECMP) and BGP add path, the QFX5120 is an ideal building block for deploying the most robust L3 underlay for SDN.

Campus Deployments

The QFX5120-48Y and QFX5120-48YM are ideal as campus distribution switches with 10GbE/25GbE downlinks and 40GbE/100GbE uplinks supporting technologies like MC-LAG and EVPN multihoming.

The QFX5120-32C is ideal as a campus core switch with 32 ports of 100GbE and support for technologies like campus fabric core-distribution.

The QFX5120-48T supports dual-speed 1GbE/10GbE, also making it a perfect fit for top-of-rack deployments in campus environments for server connectivity.

MC-LAG and EVPN Multihoming (Collapsed Core/Distribution)

A pair of interconnected QFX5120 switches can be deployed to provide EVPN multihoming (ESI-LAG) or multichassis link aggregation (MC-LAG) in a collapsed core/distribution configuration. This eliminates the need for Spanning Tree Protocol (STP) across the campus network by providing multihoming capabilities from the access to the distribution layer, while distribution to the core is an L3 IP fabric. ESI-LAG also supports horizontal scaling with more than two devices in the distribution layer and can extend EVPN to the core.
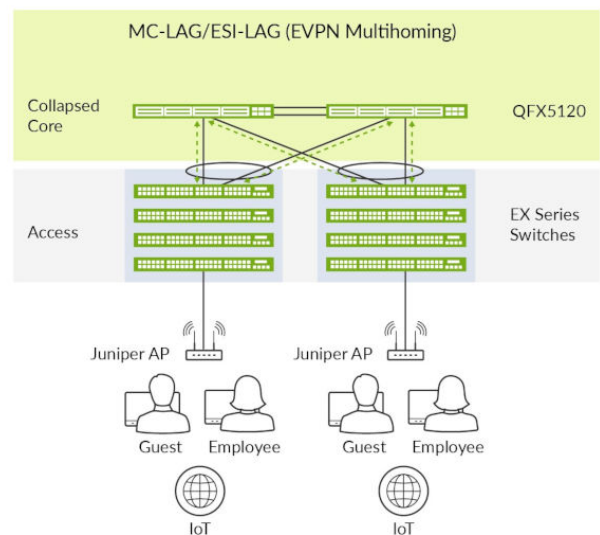

Figure 3: QFX5120 as a campus collapsed core/distribution switch with EVPN multihoming (ESI-LAG) and MC-LAG support.
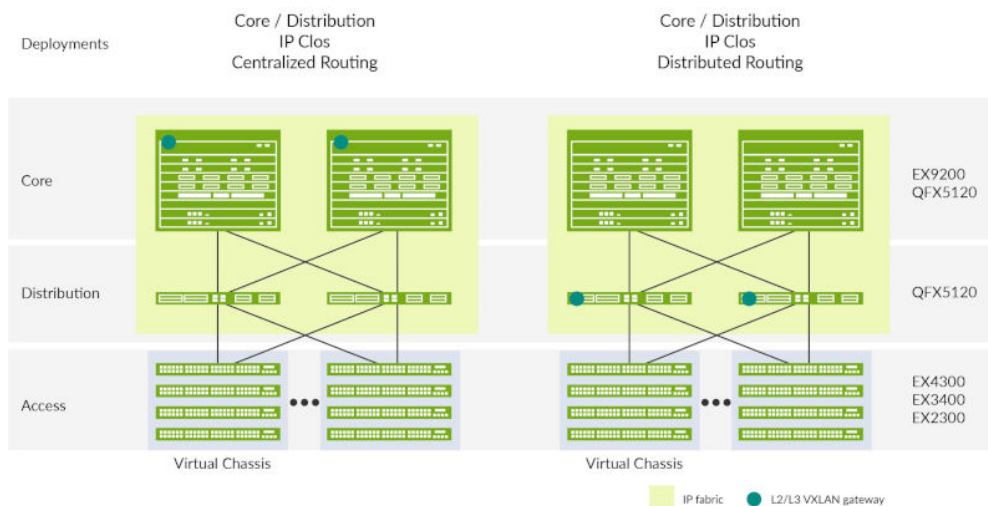
Figure 4: QFX5120 as a campus distribution switch with EVPN-VXLAN L2/L3 gateway support.

Campus Fabric Core-Distribution

A pair of interconnected QFX5120 switches can provide EVPN L2 and L3 VXLAN gateway support. This eliminates the need for STP across the campus network by providing a multihoming capability from the access to the distribution layer, while distribution to the core is an L3 IP fabric using EVPN technology. The IP fabric can also extend to connect multiple enterprise buildings, while VXLAN allows stretching L2 across buildings. An IP Clos network between the distribution and the core layers can exist in two modes, both of which are supported by the QFX5120:

- **Centrally routed bridging overlay**: An IRB interface placed at a central location in the fabric (in this case, a core device)
- **Edge routed bridging overlay**: An IRB interface placed at the edge of the fabric (in this case, a distribution device)

Features and Benefits

- **Automation**: The QFX5120 supports a number of network automation and plug-and-play operational features, including ZTP and event scripts, automatic rollback, and Python scripting.
- **Flexible forwarding table**: The QFX5120 includes a unified forwarding table, which allows the hardware table to be carved into configurable partitions of L2 media access control (MAC), L3 host, and longest prefix match (LPM) tables. In a pure L2 environment, the QFX5120 supports 288,000 MAC addresses. In L3 mode, the table can support 208,000 host entries. In LPM mode, it can support 351,000 prefixes. Junos OS provides configurable options through a CLI that can optimize the QFX5120 for various deployment scenarios.
- **Intelligent buffer management**: The QFX5120 features a total of 32 MB of shared buffers. While 25% of the total buffer space is dedicated, the rest is shared among all ports and is user configurable. The intelligent buffer mechanism in the QFX5120 effectively absorbs traffic bursts while providing deterministic performance, significantly increasing performance over static allocation.

- **MPLS**: A broad set of MPLS features, including L3 VPN, IPv6 provider edge router (6PE), RSVP traffic engineering, and LDP allow standards-based network segmentation and virtualization, enabling the QFX5120 to be deployed as a low latency MPLS label-switching router (LSR).
- **VXLAN overlays**: The QFX5120 switch is capable of both L2 and L3 gateway services. Customers can deploy overlay networks to provide L2 adjacencies for applications over L3 fabrics. The overlay networks use VXLAN in the data plane and EVPN or Open vSwitch Database (OVSDB) for programming the overlays.
- **MACsec and hop-by-hop encryption**: The QFX5120-48YM supports IEEE 802.1AE MACsec AES-256, providing link-layer data confidentiality, data integrity, and data origin authentication. The MACsec feature enables the QFX5120-48YM to support 2 Tbps of near line-rate hardware-based traffic encryption on all 100GbE, 40GbE, 25GbE, 10GbE, and 1GbE ports. Defined by IEEE 802.1AE, MACsec provides secure, encrypted communication at the link layer that is capable of identifying and preventing threats from denial-of-service (DoS) and intrusion attacks, as well as man-in-the-middle, masquerading, passive wiretapping, and playback attacks launched from behind the firewall. When MACsec is deployed on switch ports, all traffic is encrypted on the wire, but traffic inside the switch is not. This allows the switch to apply network capabilities such as quality of service (QoS) and sFlow to each packet without compromising the security of packets on the wire.
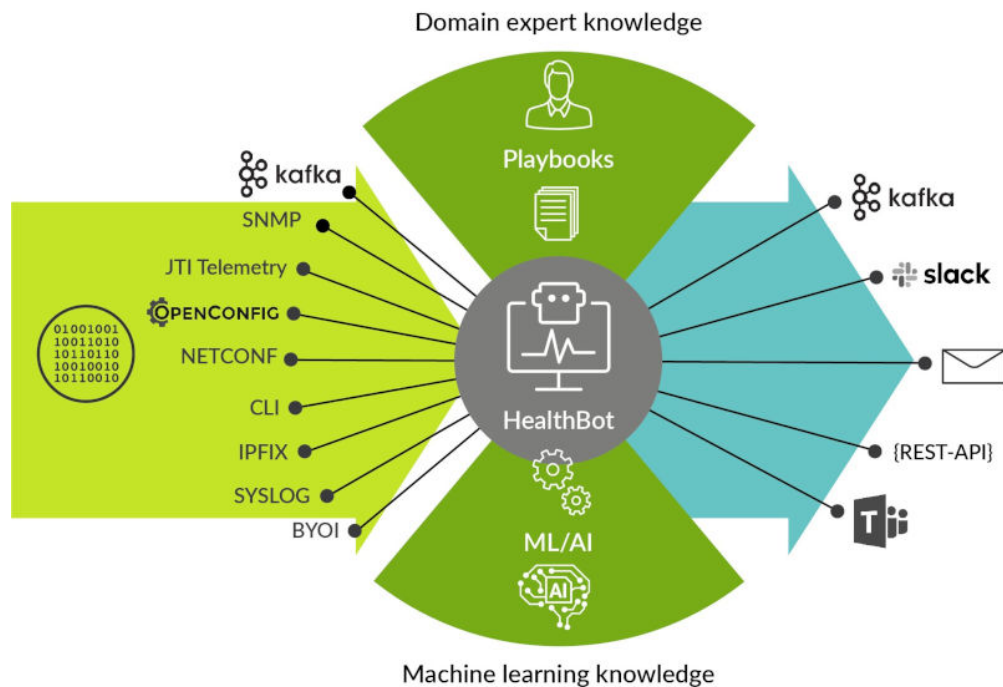
4

Figure 5: Juniper HealthBot overview

In addition, Ethernet-based WAN networks can use MACsec to provide link security over long haul connections. MACsec is transparent to Layer 3 and higher layer protocols and is not limited to IP traffic; it works with any type of wired or wireless traffic carried over Ethernet links.

- **Virtual Chassis**: The QFX5120 supports Juniper Networks unique Virtual Chassis technology, which enables up to four interconnected switches to operate as a single, logical device with a single IP address. This technology allows campus enterprises to eliminate STP and efficiently utilize network links.

Junos Telemetry Interface

The QFX5120 supports Junos telemetry interface (JTI), a modern telemetry streaming tool designed for performance monitoring in complex, dynamic data centers. Streaming data to a performance management system enables network administrators to measure trends in link and node utilization and troubleshoot such issues as network congestion in real time. JTI delivers the following features:

- Application visibility and performance management by provisioning sensors to collect and stream data and analyze application and workload flow paths through the network
- Capacity planning and optimization by proactively detecting hotspots and monitoring latency and microbursts
- Troubleshooting and root cause analysis via high-frequency monitoring and correlation of overlay and underlay networks

Monitoring and Analytics with Juniper HealthBot Software

Juniper® HealthBot software delivers the following features and benefits for enhanced monitoring and analytics:

- Key performance indicator collection and visualization
- Anomaly detection
- Root cause analysis
- Automated remediation
- Multivendor support
- Customizable playbooks
- JTI telemetry

QFX5120-48Y

QFX5120-48YM

QFX5120-48T
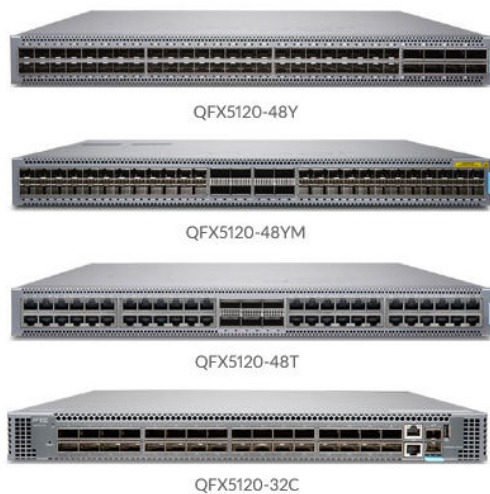
QFX5120-32C

QFX5120 Switch Specifications

Hardware

Switching Capacity

- QFX5120-48Y: 4 Tbps (bidirectional)/1.31 Bpps
- QFX5120-48YM: 4 Tbps (bidirectional)/1.31 Bpps
- QFX5120-48T: 2.16 Tbps (bidirectional)/1001.7 Mpps
- QFX5120-32C: 6.4 Tbps (bidirectional)/2 Bpps
- Switching mode (all models): Cut-through and store-and-forward

Weight

- QFX5120-48Y: 23.7 lb (10.75 kg)
- QFX5120-48YM: 24.8 lb (11.25 kg)
- QFX5120-48T: 24.25 lb (11 kg)
- QFX5120-32C: 21.12 lb (9.58 kg)

Dimensions (H x W x D)

- QFX5120-48Y: 1.72 x 17.36 x 20.48 in. (4.37 x 44.09 x 52.02 cm)
- QFX5120-48YM: 1.72 x 17.36 x 20.48 in. (4.37 x 44.09 x 52.02 cm)
- QFX5120-48T: 1.72 x 17.36 x 20.48 in. (4.37 x 44.09 x 52.02 cm)
- QFX5120-32C: 1.7 x 17.26 x 20.27 in. (4.32 x 43.84 x 51.5 cm)

Power Consumption

- QFX5120-48Y
  - Max load: 450 W
  - Typical load: 260 W
- QFX5120-48YM
  - Max load: 650 W
  - Typical load: 550 W
- QFX5120-48T
  - Max load: 450 W
  - Typical load: 300 W
- QFX5120-32C
  - Max load: 515 W
  - Typical load: 380 W

Airflow

- Front-to-back (airflow out) for hot aisle deployment
- Back-to-front (airflow in) for cold aisle deployment

Interface Options

- QFX5120-48Y
  - 2 management ports: 2 x RJ-45 ports
  - 1GbE SFP: 48 (24 copper 1GbE)
  - 10GbE SFP+: 48/80(with breakout cable)
  - 25GbE SFP: 48/80 (with breakout cable)
  - 40GbE QSFP+: 8 (each QSFP+ port can be configured as a 4 x 10GbE interface or as a 40 Gbps port)
  - 100GbE QSFP28: 8 (each QSFP28 port can be configured as a 4 x 25GbE interface or as a 100 Gbps port)
  - SFP GbE optical and copper module
  - SFP+ 10GbE optical modules
  - SFP+ direct attach copper (DAC) cables: 1/3/5 m twinax copper and 1/3/5/7 m active twinax copper
  - SFP28 DAC cables: 1/3 m twinax copper
  - SFP28 optics: Short reach (SR), long reach (LR)
  - QSFP+ to SFP+: 10GbE direct attach breakout copper (1/3 m twinax copper cable)
- QFX5120-48YM
  - 2 management ports: 2 x RJ-45 ports
  - 1GbE SFP: 48
  - 10GbE SFP+: 48/56 (total of 56 ports with breakout cable on port 50 and 52)
  - 25GbE SFP: 48/56 (total of 56 ports with breakout cable on port 50 and 52)
  - 40GbE QSFP+: 8 (QSFP+ port 50 and 52 can be configured as a 4 x 10GbE interface or as a 40 Gbps port)

- 100GbE QSFP28: 8 (QSFP28 port 50 and 52 can be configured as a 4 x 25GbE interface or as a 100 Gbps port)
- SFP GbE optical
- SFP+ 10GbE optical modules
- SFP+ DAC cables: 1/3/5 m twinax copper and 1/3/5/7 m active twinax copper
- SFP28 DAC cables: 1/3 m twinax copper
- SFP28 optics: Short reach (SR), long reach (LR)
- QSFP+ to SFP+: 10GbE direct attach breakout copper (1/3 m twinax copper cable)

- QFX5120-48T
  - 1 management port: 1 x RJ-45 port
  - 1GbE RJ45 (copper): 48 (each port is dual-speed supporting 1GbE/10GbE)
  - 40GbE QSFP+: 6 (ports 50 and 51 can be configured as a 4 x 10GbE interface or as 40 Gbps interfaces)
  - 100GbE QSFP28: 6 (ports 50 and 51 can be configured as a 4 x 25GbE interface or as 100 Gbps interfaces)

- QFX5120-32C
  - 1 RJ-45 in-band management port
  - 10GbE SFP+: 2 native ports plus 124 (with 4 x 10GbE breakout cable)
  - 25GbE SFP: 124 (with breakout cable)
  - 40GbE QSFP+: 32 (ports 0-31 can be configured as a 4 x 10GbE interface)
  - 100GbE QSFP28: 32 (ports 0-31 can be configured as a 4 x 25GbE interface)
  - SFP GbE optical and copper module
  - SFP+ 10GbE optical modules
  - SFP+ DAC cables: 1/3/5 m twinax copper and 1/3/5/7 m active twinax copper
  - SFP28 DAC cables: 1/3 m twinax copper
  - SFP28 optics: SR, LR
  - QSFP+ to SFP+: 10GbE direct attach breakout copper (1/3 m twinax copper cable)

Common to All Models

- 1 USB 2.0 port
- 1 RS-232 console port
- Supported transceiver and direct attach cable
  - QSFP+ DAC cables: 1/3 m twinax copper
  - QSFP+ optics: SR4, LX4, ESR4, ER4, LR4
  - QSFP28 optics: SR4, ER4, PSM4, CWDM4, LR4
- Rack installation kit
- Versatile four post mounting options for 19-in server rack or datacom rack

Airflow

- Redundant (N+1) and hot-pluggable fan modules for front-to-back and back-to-front airflow
- Redundant variable-speed fans to reduce power draw

Power Supply and Fan Modules

- Dual redundant (1+1) and hot-pluggable 650 W AC/DC power supplies
- 100-240 V single phase AC power
- -48 to -60 V DC power supply
- Redundant 4+1 (QFX5120-48Y/YM and QFX5120-48T) or 5+1 (QFX5120-32C) and hot-pluggable fan modules for front-to- back or back-to-front airflow

Performance Scale (Unidimensional)

- MAC addresses per system: 288,000
- VLAN IDs: 4093
- Number of link aggregation groups (LAGs):
  - 80 (QFX5120-48Y/YM, QFX5120-32C)
  - 64 (QFX5120-48T)
- Number of ports per LAG: 64
- IPv4 unicast routes: 351,000 prefixes; 208,000 host routes; 64 ECMP paths
- IPv4 multicast routes: 104,000
- IPv6 unicast routes: 168,000 prefixes; 104,000 host routes
- IPv6 multicast routes: 52,000
- Address Resolution Protocol (ARP) entries: 64,000
- Jumbo frame: 9216 bytes
- Spanning Tree Protocol (STP)
- Multiple Spanning Tree Protocol (MSTP) instances: 64
- VLAN Spanning Tree Protocol (VSTP) instances: 509
- Traffic mirroring
  - Mirroring destination ports per switch: 4
  - Maximum number of mirroring sessions: 4
  - Mirroring destination VLANs per switch: 4

Software Features Supported

Layer 2 Features

- STP—IEEE 802.1D (802.1D-2004)
- Rapid Spanning Tree Protocol (RSTP) (IEEE 802.1w); MSTP (IEEE 802.1s)
- Bridge protocol data unit (BPDU) protect
- Loop protect
- Root protect
- RSTP and VSTP running concurrently
- VLAN—IEEE 802.1Q VLAN trunking
- Routed VLAN interface (RVI)
- Port-based VLAN
- Private VLAN (PVLAN)

- VLAN translation
- Static MAC address assignment for interface
- Per VLAN MAC learning (limit)
- MAC learning disable
- Link Aggregation and Link Aggregation Control Protocol (LACP) (IEEE 802.3ad)
- MACsec with AES256 (QFX5120-48YM only)
- Virtual Chassis—up to 4 members

Link Aggregation

- MC-LAG
- LAG load sharing algorithm—bridged or routed (unicast or multicast) traffic
- IP: Session Initiation Protocol (SIP), Dynamic Internet Protocol (DIP), TCP/UDP source port, TCP/UDP destination port
- Layer 2 and non-IP: MAC SA, MAC DA, Ethertype, VLAN ID, source port

Layer 3 Features (IPv4)

- Static routing
- Routing protocols (RIP, OSPF, IS-IS, BGP)
- Virtual Router Redundancy Protocol (VRRP)
- Virtual router
- Dynamic Host Configuration Protocol (DHCP) relay
- Proxy Address Resolution Protocol (ARP)

EVPN-VXLAN Features

- MAC virtual routing and forwarding (MAC-VRF) multiple EVPN instances (EVI) with service-types vlan-based, vlan-aware, vlan-bundle
- Symmetric inter-IRB routing with anycast gateway and EVPN type-5 instances
- Proxy IGMPv2—EVPN route types 6/7/8
- ARP/ND proxy/suppression
- ESI-LAG A/A multihoming using Enterprise and SP-style interfaces
- Enhanced Ethernet loop detection
- Filter-based forwarding on IRB.VGA
- EVPN advanced route policing
- VLAN-id overlapping using SP-style interfaces

Multicast Features

- Internet Group Management Protocol (IGMP): v1, v2, v3
- IGMP snooping: v1, v2, and v3 (Layer 2 only)
- IGMP filter
- Protocol Independent Multicast-Sparse Mode (PIM-SM), PIM-Source-Specific Multicast (PIM-SSM), PIM-Dense Mode (PIM-DM) in pure IP fabric use case
- Multicast Source Discovery Protocol (MSDP)

Security and Filters

- Secure interface login and password
- RADIUS
- TACACS+
- Ingress and egress filters: Allow and deny, port filters, VLAN filters, and routed filters, including management port filters
- Filter actions: Logging, system logging, reject, mirror to an interface, counters, assign forwarding class, permit, drop, police, mark
- SSH v1, v2
- Static ARP support in pure IP fabric
- Storm control, port error disable, and autorecovery
- Source MAC address filtering on the port
- DHCP snooping in pure IP fabric use case

Quality of Service (QoS)

- L2 and L3 QoS: Classification, rewrite, queuing
- Rate limiting:
    - Ingress policing: Single-rate two-color policer, two-rate three-color policer
    - Egress policing: Policer, policer mark down action
    - Egress shaping: Per queue on each port
- 10 hardware queues per port (8 unicast and 2 multicast)
- Strict-priority queue (SPQ), shaped-deficit weighted round-robin (SDWRR), weighted random early detection (WRED), weighted tail drop
- 802.1p remarking
- Layer 2 classification criteria: Interface, MAC address, Ethertype, 802.1p, VLAN
- Congestion avoidance capabilities: WRED
- Trust IEEE 802.1p (ingress)
- Remarking of bridged packets
- Default inner to outer DiffServ code point (DSCP) copy for EVPN-VXLAN

IP Storage

- Priority-based flow control (PFC)—IEEE 802.1Qbb, DCBX
- PFC using DSCP and explicit congestion notification (ECN) for ROCEv2

High Availability

- Bidirectional Forwarding Detection (BFD)
- Uplink failure detection

MPLS

- Static label-switched paths (LSPs)
- RSVP-based signaling of LSPs
- LDP-based signaling of LSPs
- LDP tunneling (LDP over RSVP)
- MPLS class of service (CoS)

- MPLS LSR support
- IPv6 tunneling (6PE) (via IPv4 MPLS backbone)
- IPv4 L3 VPN (RFC 2547, RFC 4364)

Management and Operations

- Role-based CLI management and access
- CLI via console, telnet, or SSH
- Extended ping and traceroute
- Junos OS configuration rescue and rollback
- Image rollback
- SNMP v1/v2/v3
- Junos XML management protocol
- sFlow v5
- Beacon LED for port and system
- ZTP
- OpenStack Neutron Plug-in
- Python
- Junos OS event, commit, and OP scripts
- JTI

Traffic Mirroring

- Port-based
- LAG port
- VLAN-based
- Filter-based
- Mirror to local
- Mirror to remote destinations (L2 over VLAN)

Standards Compliance

IEEE Standard

- IEEE 802.1D
- IEEE 802.1w
- IEEE 802.1
- IEEE 802.1Q
- IEEE 802.1p
- IEEE 802.1ad
- IEEE 802.3ad
- IEEE 802.1AB
- IEEE 802.3x
- IEEE 802.1Qbb
- IEEE 802.1Qaz

T11 Standards

- INCITS T11 FC-BB-5

Supported RFCs

- RFC 768 UDP
- RFC 783 Trivial File Transfer Protocol (TFTP)
- RFC 791 IP
- RFC 792 ICMP

- RFC 793 TCP
- RFC 826 ARP
- RFC 854 Telnet client and server
- RFC 894 IP over Ethernet
- RFC 903 RARP
- RFC 906 TFTP Bootstrap
- RFC 951 1542 BootP
- RFC 1058 Routing Information Protocol
- RFC 1112 IGMP v1
- RFC 1122 Host requirements
- RFC 1142 OSI IS-IS Intra-domain Routing Protocol
- RFC 1256 IPv4 ICMP Router Discovery Protocol (IRDP)
- RFC 1492 TACACS+
- RFC 1519 Classless Interdomain Routing (CIDR)
- RFC 1587 OSPF not-so-stubby area (NSSA) Option
- RFC 1591 Domain Name System (DNS)
- RFC 1745 BGP4/IDRP for IP—OSPF Interaction
- RFC 1772 Application of the Border Gateway Protocol in the Internet
- RFC 1812 Requirements for IP Version 4 Routers
- RFC 1997 BGP Communities Attribute
- RFC 7348 VXLAN—Virtual extensible Local Area Network
- RFC 8365 NVO—Network Virtualization Overlay Solution Using Ethernet VPN (EVPN-VXLAN)
- RFC 2030 SNTP, Simple Network Time Protocol
- RFC 2068 HTTP server
- RFC 2131 BOOTP/DHCP relay agent and Dynamic Host
- RFC 2138 RADIUS Authentication
- RFC 2139 RADIUS Accounting
- RFC 2154 OSPF with Digital Signatures (Password, MD-5)
- RFC 2236 IGMP v2
- RFC 2267 Network ingress filtering
- RFC 2328 OSPF v2 (edge mode)
- RFC 2338 VRRP
- RFC 2362 PIM-SM (edge mode)
- RFC 2370 OSPF Opaque LSA Option
- RFC 2385 Protection of BGP Sessions via the TCP MD5 Signature Option
- RFC 2439 BGP Route Flap Damping
- RFC 2453 RIP v2
- RFC 2474 Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers
- RFC 2597 Assured Forwarding PHB (per-hop behavior) Group
- RFC 2598 An Expedited Forwarding PHB
- RFC 2697 A Single Rate Three Color Marker
- RFC 2698 A Two Rate Three Color Marker
- RFC 2796 BGP Route Reflection—An Alternative to Full Mesh IBGP

- RFC 2918 Route Refresh Capability for BGP-4
- RFC 3065 Autonomous System Confederations for BGP
- RFC 3376 IGMP v3 (source-specific multicast include mode only)
- RFC 3392 Capabilities Advertisement with BGP-4
- RFC 3446 Anycast RP
- RFC 3569 SSM
- RFC 3618 MSDP
- RFC 3623 Graceful OSPF Restart
- RFC 4271 Border Gateway Protocol 4 (BGP-4)
- RFC 4360 BGP Extended Communities Attribute
- RFC 4456 BGP Route Reflection: An Alternative to Full Mesh Internal BGP (IBGP)
- RFC 4486 Subcodes for BGP Cease Notification Message
- RFC 4724 Graceful Restart Mechanism for BGP
- RFC 4812 OSPF Restart Signaling
- RFC 4893 BGP Support for Four-octet AS Number Space
- RFC 5176 Dynamic Authorization Extensions to RADIUS
- RFC 5396 Textual Representation of Autonomous System (AS) Numbers
- RFC 5668 4-Octet AS Specific BGP Extended Community
- RFC 5880 Bidirectional Forwarding Detection (BFD) Dynamic Host Configuration Protocol (DHCP) server

Supported MIBs

- RFC 1155 SMI
- RFC 1157 SNMPv1
- RFC 1212, RFC 1213, RFC 1215 MIB-II, Ethernet-Like MIB and TRAPs
- RFC 1850 OSPFv2 MIB
- RFC 1901 Introduction to Community-based SNMPv2
- RFC 2011 SNMPv2 for Internet Protocol using SMIv2
- RFC 2012 SNMPv2 for the Transmission Control Protocol using SMIv2
- RFC 2013 SNMPv2 for the User Datagram Protocol using SMIv2
- RFC 2233 The Interfaces Group MIB using SMIv2
- RFC 2287 System Application Packages MIB
- RFC 2570 Introduction to Version 3 of the Internet-standard Network Management Framework
- RFC 2571 An Architecture for describing SNMP Management Frameworks (read-only access)
- RFC 2572 Message Processing and Dispatching for the SNMP (read-only access)
- RFC 2576 Coexistence between SNMP Version 1, Version 2, and Version 3
- RFC 2578 SNMP Structure of Management Information MIB
- RFC 2579 SNMP Textual Conventions for SMIv2
- RFC 2580 Conformance Statements for SMIv2
- RFC 2665 Ethernet-like Interface MIB
- RFC 2787 VRRP MIB
- RFC 2790 Host Resources MIB
- RFC 2819 RMON MIB
- RFC 2863 Interface Group MIB
- RFC 2932 IPv4 Multicast MIB
- RFC 3410 Introduction and Applicability Statements for Internet Standard Management Framework
- RFC 3411 An Architecture for Describing SNMP Management Frameworks
- RFC 3412 Message Processing and Dispatching for the SNMP
- RFC 3413 Simple Network Management Protocol (SNMP) Applications (all MIBs are supported except the Proxy MIB)
- RFC 3414 User-based Security Model (USM) for version 3 of SNMPv3
- RFC 3415 View-based Access Control Model (VACM) for the SNMP
- RFC 3416 Version 2 of the Protocol Operations for the SNMP
- RFC 3417 Transport Mappings for the SNMP
- RFC 3418 Management Information Base (MIB) for the SNMP
- RFC 3584 Coexistence between Version 1, Version 2, and Version 3 of the Internet-standard Network Management Framework
- RFC 3826 The Advanced Encryption Standard (AES) Cipher Algorithm in the SNMP User-based Security Model
- RFC 4188 Definitions of Managed Objects for Bridges
- RFC 4318 Definitions of Managed Objects for Bridges with Rapid Spanning Tree Protocol
- RFC 4363b Q-Bridge VLAN MIB

Approvals

Safety

- CAN/CSA-C22.2 No. 62368-1-14 Information Technology Equipment—Safety
- UL 62368-1 Information Technology Equipment—Safety
- EN 62368-1: 2014 Information Technology Equipment—Safety
- IEC 62368-1: 2014 2nd Edition Information Technology Equipment—Safety (All country deviations): CB Scheme
- IEC 60950-1:2005/A2:2013 Information Technology Equipment—Safety (All country deviations): CB Scheme

EMC

- EN 300 386 V1.6.1 (2012-09) Electromagnetic compatibility and radio spectrum matters (ERM) Telecommunication network equipment
- EN 300 386 V2.1.1 (2016-07) Telecommunication network equipment; EMC requirements; Harmonized Standard covering the essential requirements of the Directive 2014/30/EU

- EN 55032:2012 (CISPR 32:2012) Electromagnetic compatibility of multimedia equipment—Emission requirements
- EN 55024:2010 (CISPR 24:2010) Information technology equipment—immunity characteristics—limits and methods of measurement
- IEC/EN 61000 Immunity Test
- AS/NZS CISPR 32:2015 Australia/New Zealand Radiated and Conducted Emissions
- FCC 47 CFR Part 15 USA Radiated and Conducted Emissions
- ICES-003 Canada Radiated and Conducted Emissions
- VCCI-CISPR 32:2016 Japanese Radiated and Conducted Emissions
- BSMI CNS 13438 Taiwan Radiated and Conducted Emissions (at 10 meters)
- KN32/KN35 Korea Radiated Emission and Immunity Characteristics (at 10 meters)
- KN61000 Korea Immunity Test
- TEC/SD/DD/EMC-221/05/OCT-16 India EMC standard

Environmental Compliance

Restriction of Hazardous Substances (ROHS) 6/6

Silver PSU Efficiency

Recycled material

Waste Electronics and Electrical Equipment (WEEE)

Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

China Restriction of Hazardous Substances (ROHS)

Telco

- Common Language Equipment Identifier (CLEI) code

Environmental Ranges

- Operating temperature: 32° to 104° F (0° to 40° C)
- Storage temperature: -40° to 158° F (-40° to 70° C)
- Operating altitude: Up to 6000 ft (1829 m)
- Relative humidity operating: 5% to 90% (noncondensing)
- Relative humidity nonoperating: 0% to 95% (noncondensing)

Juniper Networks Services and Support

Juniper Networks leads the market in performance-enabling services designed to accelerate, extend, and optimize your deployments. Our services enable you to maximize operational efficiency, reduce costs, and minimize risk while achieving a faster time-to-value for your network.

By leveraging best practices from across the industry, you get the maximum levels of system performance, designed and delivered by the world's leading professional technology experts.

For more information, please visit www.juniper.net/us/en/products-services.

Installation and Implementation Service

Juniper Professional Services offers a Data Center Switching QuickStart program to ensure that the solution is operational and the customer has a complete understanding of areas such as configuration and ongoing operations. The QuickStart service provides an onsite consultant who works with the client team to quickly develop the initial configuration and deployment of a small Juniper Networks data center switching environment. A knowledge transfer session, which is intended as a review of local implementation and configuration options, is also included, but is not intended as a substitute for formalized training.

Ordering Information

Product	Description
Switch Hardware	
QFX5120-48Y-AFI2	QFX5120-48Y, 48x25GbE+8x100GbE, 1 U, AC airflow in
QFX5120-48Y-AFO2	QFX5120-48Y, 48x25GbE+8x100GbE, 1 U, AC airflow out
QFX5120-48Y-DC-AFI2	QFX5120-48Y, 48x25GbE+8x100GbE, 1 U, DC airflow in
QFX5120-48Y-DC-AFO2	QFX5120-48Y, 48x25GbE+8x100GbE, 1 U, DC airflow out
QFX5120-48YM-AFI	48x25GbE+8x100GbE MACsec AES256 switch, AC, back-to-front air flow
QFX5120-48YM-AFO	48x25GbE+8x100GbE MACsec AES256 switch, AC, front-to-back air flow
QFX5120-48YM-DC-AI	48x25GbE+8x100GbE MACsec AES256 switch, DC, back-to-front air flow, DC power
QFX5120-48YM-DC-AO	48x25GbE+8x100GbE MACsec AES256 switch, AC, front-to-back air flow, DC power
QFX5120-48T-AFI	QFX5120-48T, 48x10GbE+6x100GbE, 1 U, AC airflow in
QFX5120-48T-AFO	QFX5120-48T, 48x10GbE+6x100GbE, 1 U, AC airflow out
QFX5120-48T-DC-AFI	QFX5120-48T, 48x25GbE+6x100GbE, 1 U, DC airflow in
QFX5120-48T-DC-AFO	QFX5120-48T, 48x25GbE+6x100GbE, 1 U, DC airflow out
QFX5120-32C-AFI	QFX5120-32C, 32x100GbE, 1 U, AC airflow in
QFX5120-32C-AFO	QFX5120-32C, 32x100GbE, 1 U, AC airflow out
QFX5120-32C-DC-AFI	QFX5120-32C, 32x100GbE, 1 U, DC airflow in
QFX5120-32C-DC-AFO	QFX5120-32C, 32x100GbE, 1 U, DC airflow out
QFX5110-FANAFI	FANAFI fan model, back-to-front airflow
QFX5110-FANAFO	FANAFO fan model, front-to-back airflow
EX-4PST-RMK	4 post rack mount
MACsec Encryption	
S-QFX5KC1-MACSEC-3	Class C1 QFX5000, MACsec AES 256 Encryption Sub Software, Term: 3 Yrs
S-QFX5KC1-MACSEC-5	Class C1 QFX5000, MACsec AES 256 Encryption Sub Software, Term: 5 Yrs
S-QFX5KC1-MACSEC-P	Class C1 QFX5000, MACsec AES 256 Encryption Software, Perpetual

Product	Description
Flex Software	
S-QFX5K-C1-A1-3	Flex Sub Software, Class 1 QFX5000 line, Adv 1, Term: 3 Yrs
S-QFX5K-C1-A1-5	Flex Sub Software, Class 1 QFX5000 line, Adv 1, Term: 5 Yrs
S-QFX5K-C1-A1-P	Flex Software, Class 1 QFX5000 line, Adv 1, Perpetual
S-QFX5K-C1-A2-3	Flex Sub Software, Class 1 QFX5000 line, Adv 2, Term: 3 Yrs
S-QFX5K-C1-A2-5	Flex Sub Software, Class 1 QFX5000 line, Adv 2, Term: 5 Yrs
S-QFX5K-C1-A2-P	Flex Software, Class 1 QFX5000 line, Adv 2, Perpetual
S-QFX5K-C1-P1-3	Flex Sub Software, Class 1 QFX5000 line, Prem 1, Term: 3 Yrs
S-QFX5K-C1-P1-5	Flex Sub Software, Class 1 QFX5000 line, Prem 1, Term: 5 Yrs
S-QFX5K-C1-P1-P	Flex Software, Class 1 QFX5000 line, Adv 3, Perpetual
Services	
SVC-COR-QFX51-48M	Juniper Care Core Support for QFX5120-48YM Switches
SVC-ND-QFX51-48M	Juniper Care Next Day Support for QFX5120-48YM
SVC-COR-QFX5KC1-MS	Juniper Care Core Support for S-QFX5KC1-MACSEC-P
Optics and Transceivers	
JNP-SFP-25G-SR	SFP28 25GBASE-SR Optics for up to 100 m transmission over serial multimode fiber-optic (MMF) OM4 fiber (QFX5120-48Y)
JNP-SFP-25G-LR	SFP28 25GBASE-SR Optics for up to 10 km transmission over serial single-mode fiber-optic (SMF) (QFX5120-48Y)
JNP-SFP-25G-DAC-1M	25GbE SFP to SFP copper cable, 1 m (QFX5120-48Y)
JNP-SFP-25G-DAC-3M	25GbE SFP to SFP copper cable, 3 m (QFX5120-48Y)
JNP-QSFP-100G-SR4	QSFP28 100GbE, SR4, 100 m (all models)
JNP-QSFP-100G-PSM4	QSFP28 100GBASE-PSM4 optics for up to 500 m transmission over parallel SMF (all models)
JNP-QSFP-100G-CWDM	QSFP28 100GbE, CWDM4, 2 km (all models)
JNP-QSFP-100G-LR4	QSFP28 100GbE, LR4, 10 km (all models)
JNP-100G-DAC-1M	QSFP28 to QSFP28 Ethernet Direct Attach Copper (twinax copper cable), 1 m (all models)
JNP-100G-DAC-3M	QSFP28 to QSFP28 Ethernet Direct Attach Copper (twinax copper cable), 3 m (all models)

Product	Description
JNP-100G-4X25G-1M	QSFP28 to SFP+ 25GbE Direct Attach Breakout Copper (twinax copper cable), 1 m (all models)
JNP-100G-4X25G-3M	QSFP28 to SFP+ 25GbE Direct Attach Breakout Copper (twinax copper cable), 3 m (all models)
Software Feature Licenses	
S-QFX5K-C1-A1-3	QFX5120 Advanced 1 (OSPF/BGP/ISIS/MC-LAG), three-year term license with support (QFX5120-48Y, QFX5120-48T)
S-QFX5K-C1-A2-3	QFX5120 Advanced 2 (Multicast, Virtual Chassis, EVPN-VXLAN), three-year term license with support (QFX5120-48Y, QFX5120-48T)
S-QFX5K-C1-P1-3	QFX5120 Premium 1 (RSVP, LDP, L3VPN), three-year term license with support (QFX5120-48Y, QFX5120-48T)
S-QFX5K-C1-A1-5	QFX5120 Advanced 1 (OSPF/BGP/ISIS/MC-LAG), five-year term license with support (QFX5120-48Y, QFX5120-48T)
S-QFX5K-C1-A2-5	QFX5120 Advanced 2 (Multicast, Virtual Chassis, EVPN-VXLAN), five-year term license with support (QFX5120-48Y, QFX5120-48T)
S-QFX5K-C1-P1-5	QFX5120 Premium 1 (RSVP, LDP, L3VPN), five-year term license with support (QFX5120-48Y, QFX5120-48T)
S-QFX5K-C2-A1-3	QFX5120 Advanced 1 (OSPF/BGP/ISIS/MC-LAG), three-year term license with support (QFX5120-32C)
S-QFX5K-C2-A2-3	QFX5120 Advanced 2 (Multicast, Virtual Chassis, EVPN-VXLAN), three-year term license with support (QFX5120-32C)
S-QFX5K-C2-P1-3	QFX5120 Premium 1 (RSVP, LDP, L3VPN), three-year term license with support (QFX5120-32C)
S-QFX5K-C2-A1-5	QFX5120 Advanced 1 (OSPF/BGP/ISIS/MC-LAG), five-year term license with support (QFX5120-32C)
S-QFX5K-C2-A2-5	QFX5120 Advanced 2 (Multicast, Virtual Chassis, EVPN-VXLAN), five-year term license with support (QFX5120-32C)
S-QFX5K-C2-P1-5	QFX5120 Premium 1 (RSVP, LDP, L3VPN), five-year term license with support (QFX5120-32C)

Table 1. QFX5120-48YM Optics Support.

1GbE	10GbE	25GbE	40GbE	100GbE
EX-SFP-GE10KT15R13	EX-SFP-10GE-LRM	JNP-25G-AOC-10M	JNP-40G-AOC-10M	JNP-100G-DAC-1M
EX-SFP-GE40KT13R15	EX-SFP-10GE-SR	JNP-25G-AOC-20M	JNP-40G-AOC-20M	JNP-100G-DAC-3M
EX-SFP-GE40KT15R13	EX-SFP-10GE-USR	JNP-25G-AOC-30M	JNP-40G-AOC-30M	JNP-QSFP-100G-CWDM
EX-SFP-1GE-SX	EX-SFP-10GE-DAC-1M	JNP-SFP-25G-SR	JNP-QSFP-AOCBO-10M	JNP-QSFP-100G-LR4
EX-SFP-1GE-SX-ET	JNP-10G-AOC-10M	JNP-SFP-25G-DAC-3M	JNP-QSFP-AOCBO-1M	JNP-QSFP-100G-SR4
EX-SFP-GE80KCW1490	JNP-10G-AOC-15M	JNP-SFP-25G-DAC-5M	JNP-QSFP-AOCBO-3M	QSFP-100G-ER4L
EX-SFP-GE80KCW1510	JNP-10G-AOC-1M	JNP-SFP-25G-LR	JNP-QSFP-AOCBO-5M	
EX-SFP-GE10KT13R15	JNP-10G-AOC-20M		JNP-QSFP-AOCBO-7M	
EX-SFP-GE80KCW1530	JNP-10G-AOC-30M		JNP-QSFPP-40G-BXSR	
EX-SFP-GE80KCW1550	JNP-10G-AOC-3M		QFX-QSFP-40G-ESR4	
EX-SFP-GE80KCW1570	JNP-10G-AOC-5M		QFX-QSFP-DAC-1M	
EX-SFP-GE80KCW1590	JNP-10G-AOC-7M		QFX-QSFP-DACBO-1M	
	JNP-SFP-10G-BX10D		QFX-QSFP-DACBO-3M	
	JNP-SFP-10G-BX10U		QSFPP-40GBASE-SR4	
	SRX-SFPP-10G-SR-ET			

About Juniper Networks

Juniper Networks brings simplicity to networking with products, solutions and services that connect the world. Through engineering innovation, we remove the constraints and complexities of networking in the cloud era to solve the toughest challenges our customers and partners face daily. At Juniper Networks, we believe that the network is a resource for sharing knowledge and human advancement that changes the world. We are committed to imagining groundbreaking ways to deliver automated, scalable and secure networks to move at the speed of business.

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NETWORKS

Juniper Networks is a Leader

2020 Gartner Magic Quadrant
Wired and Wireless LAN Access Infrastructure

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JUNIPER NETWORKS | Engineering Simplicity

Juniper Networks is a Leader

2020 Magic Quadrant for Wired and Wireless LAN Access Infrastructure

Figure 1. Magic Quadrant for Wired and Wireless LAN Access Infrastructure

Juniper Networks is positioned **highest** for **execution** in the Leaders' Quadrant.

"In our opinion, this report validates the unique advantages of the Juniper AI-driven enterprise, including rich AIOps functionality and proactive self-driving automation for optimized user experiences."
 - Jeff Aaron, VP of Enterprise Marketing at Juniper

Access a Complimentary Copy

Gartner Magic Quadrant for Wired and Wireless LAN Access Infrastructure by Bill Menezes, Christian Canales, Tim Zimmerman, Mike Toussaint, 4 November 2020. This graphic was published by Gartner, Inc. as part of a larger research document and should be evaluated in the context of the entire document. The Gartner document is available upon request from Juniper Networks. Gartner does not endorse any vendor, product or service depicted in its research publications, and does not advise technology users to select only those vendors with the highest ratings or other designation. Gartner research publications consist of the opinions of Gartner's research organization and should not be construed as statements of fact. Gartner disclaims all warranties, expressed or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.
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Gartner Peer Insights –Customer Reviews Say it All

"The EX series is very versatile. We use them in almost every conceivable manner. They are solid and reliable switches."

– NETWORK ENGINEER

"Never looking back. Deployment of Mist APs has been a real treat."

– LEAD NETWORK ENGINEER

Mist's APs were super simple to install and integrate into our existing infrastructure. Marvis AI is extremely powerful and provides insights that we didn't know were issues. Things have just worked out of the box.

–NETWORK ENGINEER

Gartner peerinsights customers' choice 2019 ™

WIRED AND WIRELESS LAN ACCESS INFRASTRUCTURE

APRIL 2019

Juniper driven by Mist AI

Juniper received the highest ratings of any other vendor in this

Customers' Choice 2020

4.9 ★★★★★ 161 Ratings

5 Star	▬▬▬▬▬▬	91%
4 Star	▬	9%
3 Star	▏	1%
2 Star		0%
1 Star		0%
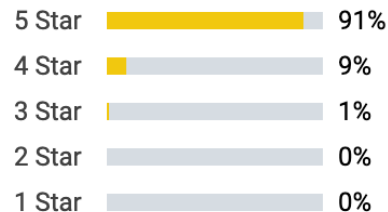
JUNIPER NETWORKS

Juniper Networks
Products: Mist Systems Wireless Access Points, EX Series Switches, Mist Wi-Fi Assurance Service, Mist BLE Engagement Location Based Services

"The perfect WiFi you couldn't have even dreamed of two years ago."

From the first steps of PoC to the half a year in production we haven't just been satisfied but many times it has provided more than we could have even wished for. Back in the day WiFi was considered good if you didn't ...

Our AI-Driven Enterprise Mission

AI Engine

Wireless   Wired   SD-WAN   Data Center

Devices and Users   Multicloud Apps

Connected Security
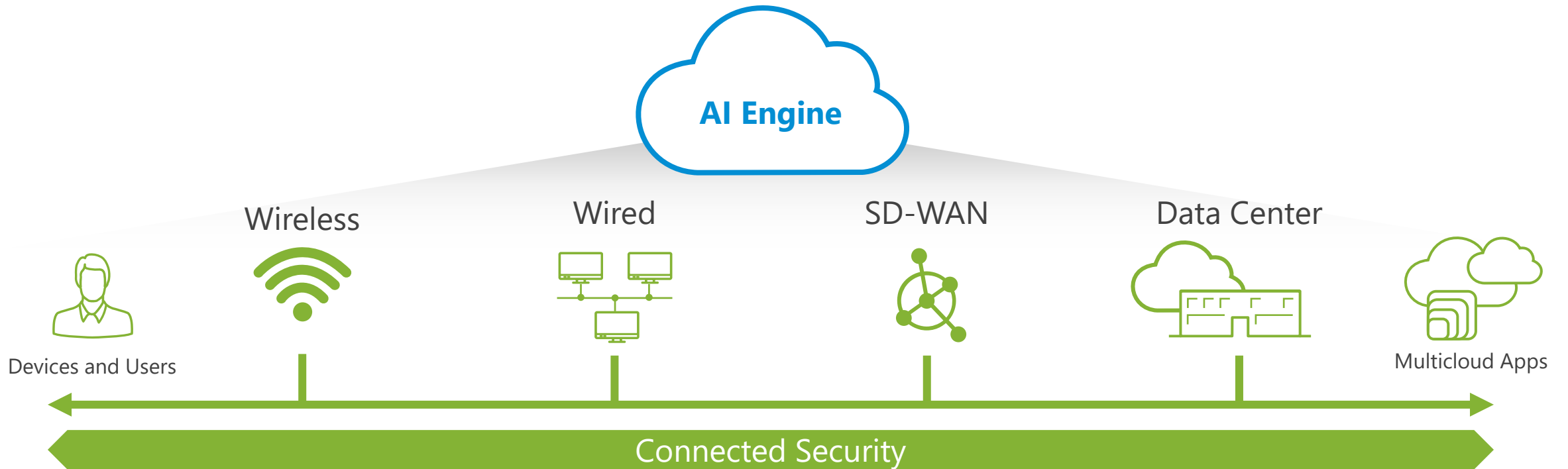
The Juniper AI-Driven Enterprise – Version 4.0

Key tenets of the AI-driven Enterprise

- Focus is on **user experiences**
- AI-driven automation, insight and actions
  - Across Wired/ Wireless/Security/WAN
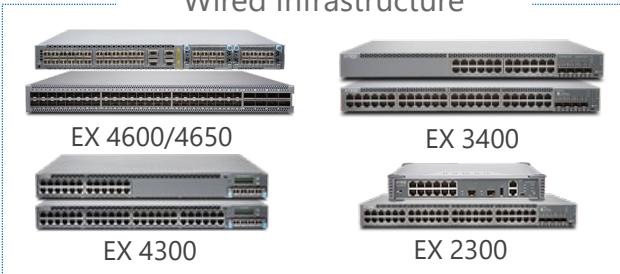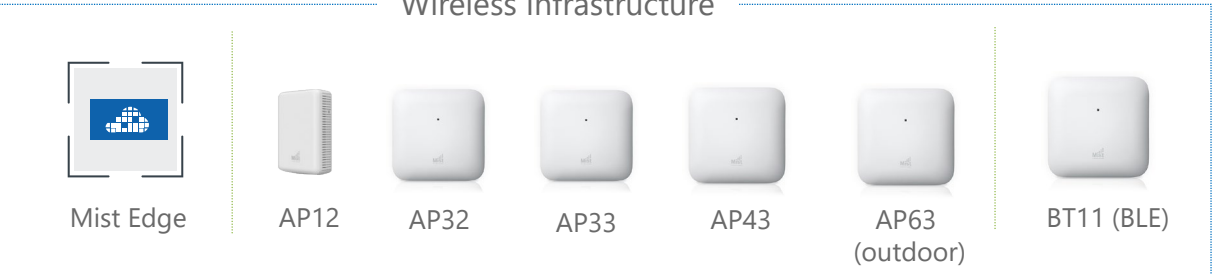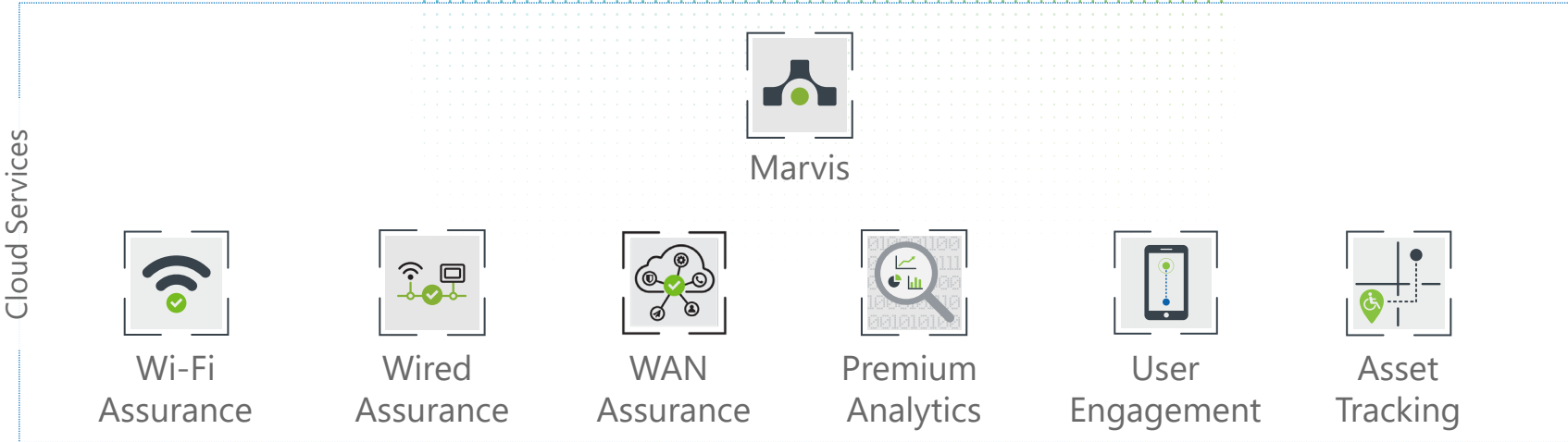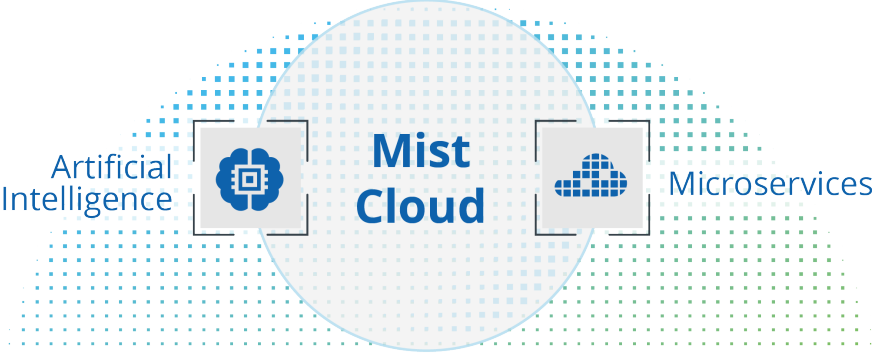- Modern cloud for agility, resiliency and scale
- AIOps

1.0
Wireless

2.0
Wired

AI Engine

Mist
A Juniper Company

Visibility and Policy Control

3.0
Security

4.0
WAN

Data Center
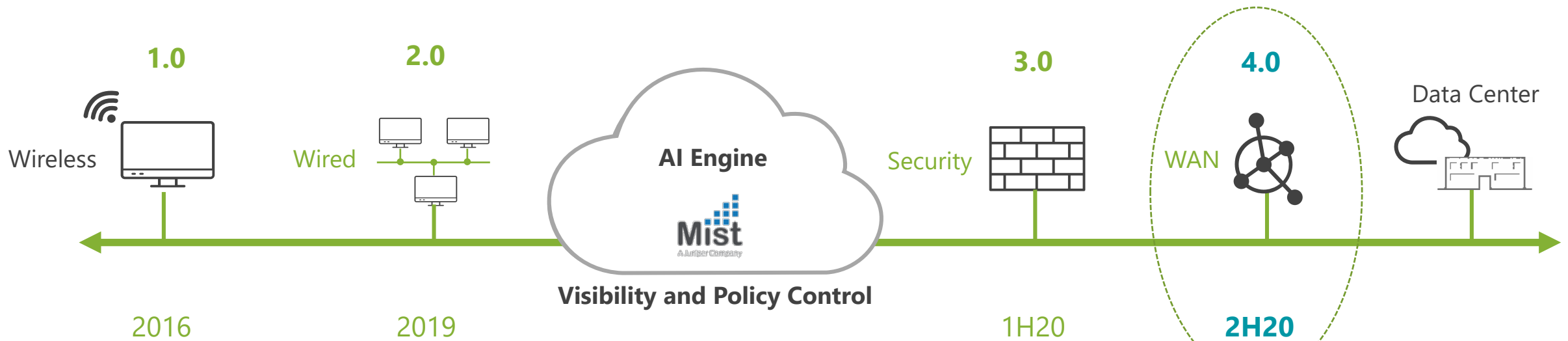
2016

Mist Unveils Cloud-Based Wireless Networking Platform to Deliver Amazing Mobile Experiences

Cupertino, CA, June 28, 2016

2019

Juniper Networks Brings AI-driven Simplicity and Reliability to Enterprise Networks with New Mist Wired Assurance Service and Marvis™ Actions

1H20

Juniper Networks Expands Connected Security Portfolio with Encrypted Traffic Analysis for Juniper Advanced Threat Prevention and SecIntel for Mist Wireless

2H20

AI-Driven Enterprise Solution

Mist Cloud

Artificial Intelligence

Microservices

Marvis

Cloud Services

- Wi-Fi Assurance
- Wired Assurance
- WAN Assurance
- Premium Analytics
- User Engagement
- Asset Tracking

Wireless Infrastructure

- Mist Edge
- AP12
- AP32
- AP33
- AP43
- AP63 (outdoor)
- BT11 (BLE)

Wired Infrastructure

- EX 4600/4650
- EX 3400
- EX 4300
- EX 2300

WAN Infrastructure

- SRX

The AI-Driven Enterprise is Here... and Driving Real Value!

DARTMOUTH

Network resolved **75%** of all helpdesk tickets on its own

G A P

97% improvement in point-of-sale errors across 1,500 stores

servicenow.

98% reduction in end-user trouble tickets, down from hundreds a month

CISD

Cut all Wi-Fi issues across school district by **50%**

9 of the Forbes 10

40% of the Forbes 1000

6 of the top 10 global retailers

17 of the 20 largest global banks

14 of the top 20 world's most prominent universities

Additional Resources

Weekly Live Demo

North America - 10:00 AM PT / 1:00 PM ET

Europe - 9:00 BST / 10:00 CET

Asia Pacific - 10:00 AM AET / 12:00 PM NZT

Sign Up Below

**AI-DRIVEN ENTERPRISE DEMO
LIVE ON THURSDAYS**

**4 of the Fortune 10 switched
to Juniper LAN/WLAN/WAN
products driven by Mist AI.**

REGISTER NOW →

JUNIPER
NETWORKS

Wired & Wireless Wednesday

https://www.mist.com/demos

Transformation Thursdays: AI-Driven Enterprise Demo

https://www.juniper.net/us/en/forms/ai-driven-demo/

Thank you

JUNIPER NETWORKS® | Engineering Simplicity

PARTNER
ADVANTAGE
Reseller Partner

VODANET SYSTEMS LLC

JUNIPER NETWORKS
RESELLER PARTNER

Helda Lopes

Helda Lopes
Vice President, Marketing

August 2020

This certificate is valid for up to one year from the signature date and certification can be withdrawn at any time. Juniper Networks can confirm the validity or otherwise of this certificate. Juniper Business Use Only

JUNIPER NETWORKS | Engineering Simplicity

MASTER PURCHASE AND LICENSE AGREEMENT

This Master Purchase and License Agreement (the "**Agreement**") is entered into between Juniper and the party accepting these terms ("**Company**" or "**End User**") (each individually, a "**Party**", and collectively, the "**Parties**"), and consists of the General Terms and Conditions set forth below, the Online Policies, Guidelines and Procedures, and the following Schedule(s) and/or Special Terms attached to the General Terms and Conditions, all of which are incorporated, as applicable, into this Agreement by this reference:

- Channel Schedule: Terms and Conditions Applicable to resellers only;
- End User Schedule: Terms and Conditions Applicable to End Users only;
- Glossary: The glossary of defined terms; and
- Special Terms: Supplemental terms and conditions applicable to specific transactions, including, but not limited to, Agency Terms, System Integrator Terms, or Federal Terms.

GENERAL TERMS AND CONDITIONS

1. Scope. These General Terms and Conditions ("**GTC**") set forth terms and conditions for the purchase and/or licensing of Hardware, Software, Services, and/or Cloud Services by the Company during the Agreement Term.

2. Precedence. In the event of any conflict, the following documents that are listed higher in order have precedence and apply in place of any substantially similar terms and conditions of a document lower in the order:

- The GTC and the Glossary;
- The terms and conditions of the applicable Schedule;
- The terms and conditions of any applicable Special Terms;
- The terms and conditions of an attachment to one of the above;
- The terms and conditions of Descriptive Content; and
- The terms and conditions of any Online Policies, Guidelines and Procedures.

3. Term. This Agreement is effective from the date of Company's acceptance (the "**Effective Date**") and will have an initial term until the twelve (12) months immediately following the Effective Date ("**Initial Term**"). After the Initial Term, this Agreement shall automatically renew for successive one-year terms ("**Renewal Term**") (collectively, the "**Agreement Term**"); unless, however, before this Agreement automatically renews, either party gives no less than ninety (90) days' notice to the other party, that the Agreement will terminate at end of the then current-term.

4. Transactional Terms.

The following terms apply as indicated within the applicable Schedule(s).

a) <u>Payment</u>. All payments due hereunder must be made net thirty (30) days from the date of invoice. Juniper may require other payment arrangements and may further require a credit check. Unless otherwise stated herein, payments shall be made in U.S. dollars. Accounts past due are subject to a monthly charge of 1.5% or the maximum amount permitted by law, whichever is less, based on the outstanding overdue balance.

b) <u>Ordering</u>. Company must comply with the Purchase Order Requirements. Company's non-compliance with the Purchase Order Requirements may result in Juniper's rejection of Company's Purchase Order. Juniper will confirm its ability to meet Company's requested delivery dates or propose alternative dates. The planned delivery date is referred to as the "**Scheduled Delivery Date**."

c) <u>Cancellations and Rescheduling</u>. Unless revisions are required by Juniper, Company may not cancel, reschedule, or otherwise modify Purchase Orders, in whole or in part, less than thirty (30) days prior to the Scheduled Delivery Date. Should a request for a cancellation or rescheduling received thirty (30) days or less prior to the Scheduled Delivery Date be approved by Juniper (in its sole discretion), the Hardware, Software, Cloud Services and/or Services will be subject to an order cancellation charge equal to ten percent (10%) of the purchase price.

d) <u>Delivery</u>. Except for purchases made indirectly through Authorized Resellers, Company understands and agrees that the terms below in this Section, as supplemented by the additional delivery terms posted in the Shipping Terms Exhibit as set forth at <u>https://www.juniper.net/Shipping-Terms-Exhibit</u> (the "**Shipping Terms Exhibit**"), are the sole and exclusive terms of delivery and supersede all additional or inconsistent terms of any Purchase Order or other ordering document.

e) <u>Taxes</u>. All prices payable under this Agreement are exclusive of Taxes and are paid net of any applicable withholding tax. The Company shall be responsible for paying Taxes arising from purchases of Hardware, Software, Cloud Services and/or Service. If applicable, valid exemption documentation for each taxing jurisdiction shall be provided to Juniper prior to invoicing. The Company shall: (i) promptly notify Juniper if its exemption is revoked or modified; (ii) render reasonable assistance to Juniper by promptly providing valid tax receipts and other required documentation of the payment of any withholding taxes; (iii) promptly provide any applications for reduced tax rates; and (iv) promptly notify and assist Juniper in any audit or tax proceeding, related to transactions hereunder; (v) comply with all applicable tax laws and regulations; and (vi), fully indemnify, defend and otherwise pay or reimburse Juniper for all costs and damages related to any liability incurred by Juniper as a result of the Company's non-compliance or delay with its responsibilities herein. Neither party shall be liable for taxes or assessments on the other Party's net income, gross income, capital, net worth, franchise, privilege, property, or any similar taxes or assessments.

5. Company Affiliates. Company guarantees the payment and performance of and shall remain liable for, and shall defend and indemnify Juniper against, any and all acts or omissions in violation of the terms of this Agreement by any Affiliate of the Company. If at any point during the Agreement Term, any Affiliate of the Company no longer meets the definition of an Affiliate, such Affiliate shall no longer be able to purchase under the terms of this Agreement.

6. Confidentiality

a) Scope. "Confidential Information" means all information disclosed, directly or indirectly, to the other party (the "**Receiving Party**") and labeled as confidential or proprietary, stated at the time of oral disclosure to be confidential or proprietary, or by the nature of the information and the circumstances of the disclosure, the Receiving Party should reasonably infer to be confidential or proprietary. Confidential Information does not include information which: (i) is or becomes generally known through no fault of the Receiving Party; (ii) is known to the Receiving Party at the time of receipt, as evidenced by the Receiving Party's records; (iii) is hereafter furnished to the Receiving Party by a third party as a matter of right and without restriction on disclosure; or (iv) is independently developed, as evidenced by contemporaneous records by the Receiving Party without use of or reference to such Confidential Information.

b) Protection. The Receiving Party will use a reasonable degree of care to maintain all Confidential Information to accomplish the purposes of this Agreement or as otherwise agreed in writing by the disclosing Party. The Receiving Party will not disclose to any third party nor use Confidential Information for any unauthorized purpose. The Receiving Party may only disclose Confidential Information: (i) to its employees and representatives that have a need to know to accomplish the purposes of this Agreement; and (ii) in response to a valid order of a court or other governmental body or as otherwise required by law to be disclosed, provided the Receiving Party, to the extent legally permissible, gives sufficient notice to the disclosing party to enable the disclosing party to take protective measures. Except as otherwise expressly set forth in this Agreement, no rights or licenses to intellectual property in Confidential Information is granted by either Party under this Agreement, whether express, implied or otherwise, to the other Party. The obligations imposed on the Receiving Party shall survive the expiration or termination of this Agreement.

c) Injunctive Relief. In the event of a threatened or actual breach of this Section 6, the non-breaching party shall be entitled to seek immediate injunctive or other equitable relief, in addition to, and not in lieu of, any other available remedies.

7. Data Protection. All data collected, processed, and/or used in connection with this Agreement is subject to the Juniper Privacy Policy. Juniper shall maintain appropriate administrative, physical, and technical safeguards for protection of the security, confidentiality, and integrity of End User Data as described in the User Guides and/or the applicable Documentation. To the extent End User Data includes Personal Data, as defined in the Data Protection Agreement ("**DPA**") located at https://www.juniper.net/us/en/privacy-policy/customer-dpa/, the terms of the DPA are hereby incorporated by reference and shall apply.

8. Intellectual Property. Subject to the express rights and licenses granted by Juniper in this Agreement, Company acknowledges and agrees that: (i) any and all intellectual property rights in or to the Hardware, Software, Services, and/or Cloud Services are the sole and exclusive property of Juniper or its licensors; (ii) Company shall not acquire any ownership interest in any such intellectual property rights under this Agreement; and (iii) if Company acquires any intellectual property rights in or relating to any product or Services sold or licensed under this Agreement

(including any rights in any derivative works or patent improvements relating thereto), by operation of Law, or otherwise, such rights are deemed and are hereby irrevocably assigned to Juniper, without further action by either Party.

9. Company's Indemnity

a) Except to the extent caused by the gross negligence or willful misconduct of Juniper, its employees or agents, Company will indemnify, defend and hold harmless Juniper and its directors, officers, employees, shareholders, agents, and affiliates (the "**Indemnitees**") from any and all losses, damages, liabilities, judgments, settlements, interest, penalties, fines, costs, and expenses of whatever kind, including attorney's fees, arising out of any third-party claims arising out of or resulting from the following (whether actual or alleged): (i) fraud, misrepresentation, gross negligence, willful misconduct, or breach of or noncompliance with any provision of this Agreement; (ii) any false or inaccurate representation regarding an export license or the applicability or inapplicability of a license requirement or exception; (iii) violation of any applicable Laws, including without limitation any customs, export control, or sanctions laws or regulations; and/or (iv) any obligation for which Company maintains insurance.

THE INDEMNIFICATION OBLIGATIONS SET FORTH ABOVE SHALL APPLY IN EACH CASE WHETHER OR NOT CONTRIBUTED TO, OR CAUSED IN PART BY, THE ACTIVE OR PASSIVE NEGLIGENCE OR FAULT (OTHER THAN GROSS NEGLIGENCE OR WILLFUL MISCONDUCT) OF JUNIPER, ITS EMPLOYEES, OR AGENTS.

b) Notwithstanding anything to the contrary set forth above in this Section, (i) an Indemnitee may participate, at its own expense, in any defense and settlement directly or through counsel of its choice, and (ii) Company will not enter into any settlement agreement on terms that would diminish the rights provided to the Indemnitee, accept any liability, or increase the obligations assumed by the Indemnitee under this Agreement, without the prior written consent of the Indemnitee.

10. Intellectual Property Indemnity

a) <u>Obligations</u>. Subject to Section 11 below and the provisions of this Section 10, Juniper shall indemnify and defend any suit brought against Company to the extent that it is based upon a claim that a Juniper Hardware, Software, Service, and/or Cloud Service sold or licensed to Company under this Agreement infringes any third-party United States patent, copyright, or trademark ("**IP Claims**") and will pay all damages and costs that a court finally awards against Company as a result of such claim; provided, that Company: (i) as soon as possible but in any event within thirty (30) days of becoming aware of such claim (whether or not a claim has been filed): (1) gives Juniper written notice of such claim, and (2) furnishes Juniper with a copy of each communication, notice or other document relating to the claim; (ii) gives Juniper complete control of the defense and settlement of such claim; and (iii) gives all reasonable information and assistance in the defense or settlement of such claim at Company's expense. It is incumbent on Company to provide notice to Juniper as soon as it becomes aware of any potential claim, in order for Juniper to mitigate any potential damages.

b) <u>Remedy</u>. Should a Juniper Hardware, Software, Service, and/or Cloud Service become, or in Juniper's opinion, likely become the subject of an IP Claim, Juniper, at its option, may either: (i) procure for Company the right to continue using the Juniper Hardware, Software, Service, and/or Cloud Service, or (ii) replace or modify the allegedly infringing item to make it non-infringing provided material functionality is maintained. If, in Juniper's sole opinion, neither of the foregoing alternatives is commercially reasonable, Juniper will grant Company a refund of the purchase price of the relevant Hardware, Software, Service, and/or Cloud Service depreciated on

a five-year straight-line basis provided that Company, at Juniper's option, either returns the Product to Juniper, certifies the destruction thereof, or ceases to use the Service.

c) <u>Exclusions</u>. Juniper shall have no obligation or liability for, and Company shall indemnify Juniper and its Affiliates against, any claim of infringement which is based, in whole or in part, upon (i) the combination, operation or use of the Hardware, Software, Service, and/or Cloud Service with any hardware, software or service supplied by a party other than Juniper; (ii) any alteration or modification of the Hardware, Software, Service and/or Cloud Service which is not pre-approved by Juniper in writing; (iii) any non-Juniper hardware, software, or service; (iv) any specifications, designs or instructions provided to Juniper by or on behalf of Company; (v) Company's failure to promptly implement an update or modification to the Hardware, Software and/or Service (e.g., install a Supported Release) provided by Juniper; or (vi) use of the Hardware, Software, Service and/or Cloud Service in a manner other than which it was designed or in a manner other than as specified by Juniper; or (vii) any circumstance for which Company is obligated to indemnify any Indemnitee. Juniper shall not be obligated or responsible for any settlement entered into or damages arising from admissions by Company without Juniper's prior written consent.

THE INFRINGEMENT INDEMNITY SET FORTH IN THIS SECTION STATES JUNIPER'S ENTIRE LIABILITY AND OBLIGATION AND COMPANY'S SOLE REMEDY FOR CLAIMS OF INFRINGEMENT OR MISAPPROPRIATION OF THIRD-PARTY PATENT, COPYRIGHT, TRADEMARK, AND/OR OTHER INTELLECTUAL PROPERTY RIGHTS.

11. Limitation of Liability

IN NO EVENT SHALL JUNIPER OR ITS AFFILIATES HAVE ANY LIABILITY FOR ANY LOST PROFITS, LOSS OF DATA OR COSTS OF PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES, OR FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR IN CONNECTION WITH, THIS AGREEMENT, UNDER ANY THEORY OF LIABILITY, INCLUDING, WITHOUT LIMITATION, INDEMNIFICATION. THOSE RESULTING FROM THE USE OF HARDWARE, SOFTWARE, SERVICES, AND/OR CLOUD SERVICES PURCHASED HEREUNDER, OR THE FAILURE OF HARDWARE, SOFTWARE, SERVICES, AND/OR CLOUD SERVICES TO PERFORM, OR FOR ANY OTHER REASON. THESE LIMITATIONS SHALL APPLY NOTWITHSTANDING THE FAILURE OF THE ESSENTIAL PURPOSE OF ANY EXCLUSIVE OR LIMITED REMEDY. JUNIPER SHALL NOT HAVE ANY LIABILITY FOR THE ACTS OR OMISSIONS OF ANY THIRD PARTY (OTHER THAN FOR JUNIPER'S SUBCONTRACTORS).

JUNIPER'S AND ITS AFFILIATES' AGGREGATE LIABILITY ARISING OUT OF, OR IN CONNECTION WITH, THIS AGREEMENT AND/OR SALE OR LICENSING OF HARDWARE, SOFTWARE, SERVICES, AND/OR CLOUD SERVICES SHALL BE LIMITED TO THE GREATER OF $100,000 OR THE AMOUNT PAID BY COMPANY FOR THE HARDWARE, SOFTWARE, SERVICES, AND/OR CLOUD SERVICES IN THE TWELVE MONTHS PRECEDING THE CLAIM IN QUESTION UP TO A MAXIMUM OF $2,000,000.

12. Warranty Disclaimer. Except as expressly set forth in this Agreement, and to the extent permitted by applicable Law, Juniper (on behalf of itself and its Affiliates) EXPRESSLY DISCLAIMS ALL REPRESENTATIONS AND WARRANTIES, WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHERWISE, WITH REGARD TO THE HARDWARE, SOFTWARE, SERVICES, AND CLOUD SERVICES, INCLUDING WITHOUT LIMITATION ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT OF PROPRIETARY RIGHTS, ALL WARRANTIES ARISING FROM COURSE OF DEALING,

USAGE, OR TRADE PRACTICE, AND ALL WARRANTIES THAT THE HARDWARE, SOFTWARE, SERVICES, OR CLOUD SERVICES WILL MEET THE REQUIREMENTS OF COMPANY OR ANY OTHER PERSON OR ENTITY, BE AVAILABLE OR OPERATE WITHOUT INTERRUPTION, ACHIEVE ANY INTENDED RESULT, OR BE COMPATIBLE OR WORK WITH ANY SOFTWARE, SYSTEM, PRODUCT, OR SERVICE.

13. Termination

a) <u>Termination for Convenience</u>. Except for End Users, either Party may terminate this Agreement, in whole or in part (excluding the GTC), for its convenience upon thirty (30) days prior written notice to the other Party. Juniper will be entitled to payment for Purchase Orders that include Hardware, Software, and/or Cloud Services, that are accepted and shipped to, delivered to, or received by Company as of the date of termination. If Company terminates this Agreement, then Company will not be entitled to a refund or credit for any months remaining for any purchased Services. In the event that, following the termination of this Agreement and prior to the execution of any subsequent purchase or license agreement between the Parties, Company places Purchase Orders and Juniper accepts such Purchase Orders, then any such Purchase Orders shall be governed by the terms and conditions of this Agreement notwithstanding the earlier termination of this Agreement; provided, however, that acceptance by Juniper of any such Purchase Order will not be considered an extension of the term of this Agreement nor a renewal thereof.

b) <u>Termination for Breach</u>. If either Party breaches a provision of this Agreement and fails to cure such breach within 30 days after receiving written notice of the breach from the other Party, then the non-breaching Party shall have the right to terminate this Agreement at any time; provided if a breach cannot be cured within 30 days but is capable of cure, the breaching party shall not be in default if, within 30 days of receiving notice of breach, in good faith, it begins and continues to attempt to cure the breach. In such case, the breaching party shall have a reasonable time to cure the breach before being in default. Juniper shall be entitled to all such sums as are due in accordance with this Agreement for the delivered Hardware, Software, and Cloud Services, as well as Services performed and rendered up to the date of termination, such sums due and payable in accordance with the Agreement.

c) <u>Survival of Provisions</u>. With the exception of Section 10 above, the terms of the GTC shall survive termination hereof for any reason.

14. Services Suspension and Termination Rights. Except for Cloud Services, Juniper may suspend any unpaid Services with thirty (30) days' notice to the Company. Where the Company continues to be in default, Juniper may in addition to any other remedy, terminate those Services with or without notice to Company (or to any End User) in which case, Juniper will have no liability for ceasing the Services.

15. Miscellaneous

a) <u>Governing Law</u>. This Agreement shall be interpreted and governed by the laws of the State of California without regard to its conflict of laws principles or to the U.N. Convention on Contracts for the International Sale of Goods, the application of which is hereby excluded. For any disputes arising out of this Agreement, the Parties consent to the personal and exclusive jurisdiction of, and venue in, the state and federal courts within Santa Clara County, California.

b) <u>Compliance with Laws; Export Requirements</u>.

Company and its personnel shall always comply with the Compliance Rules.

In the course of Company's purchase, resale, or use (as applicable) of Hardware, Software, Cloud Services and/or Services, Company shall comply strictly with all export and import laws. In addition, Company shall fulfill the additional duties regarding export and import controls and trade sanctions as described in the applicable sections of the Export Notes attached as part of the Shipping Terms Exhibit (https://www.juniper.net/assets/us/en/local/pdf/additional-resources/juniper-networks-shipping-terms-exhibit.pdf.)

Company shall not directly or indirectly export, re-export, transfer, divert, release, or import Hardware, Software, Cloud Services and/or Services, to any other person or entity (nor make any use thereof) except with all required government approvals, permits, and licenses or as otherwise permitted under U.S. and other applicable Laws. Without limiting the foregoing, Company shall not export or re-export, directly or indirectly, any Hardware, Software, Cloud Services and/or Services to any Group E country (currently Syria, Cuba, Iran, North Korea) (Supp 1 to EAR Part 740) or the region of Crimea.

c) Force Majeure. Except for Company's payment obligations contained herein, neither Party will be responsible for any failure or delay in performance due to causes beyond its reasonable control, provided such Party promptly notifies the other Party in writing of such event.

d) Assignment. Company may not assign or delegate or otherwise transfer its licenses, rights, or duties under this Agreement except with the prior written consent of Juniper. Any attempted prohibited assignment will be void. Juniper may assign, sub-contract or delegate any or all of its rights and/or its obligations under this Agreement to any Affiliate of Juniper without the consent of Company. Subject to the foregoing, this Agreement shall be binding upon and inure to the benefit of the Parties hereto and their successors and assigns.

e) Notices. Any notices related to this Agreement must be in writing and sent by registered mail or receipted courier service, in the case of: (i) Juniper, to the Address Details; and (ii) the Company, to the address provided by the Company. Juniper may permit other notification methods as described in the Onboarding Information. Notices may also be posted on the relevant Juniper website.

f) Audit. Company will maintain accurate and legible records for a period of three years after the termination or expiration of the Agreement, and will grant to Juniper, or its designee, reasonable access to and copies of, any information reasonably requested by Juniper to verify compliance with the terms of this Agreement.

g) Severability; Remedies; Waiver. In the event that any one or more provisions contained herein shall be held by a court of competent jurisdiction to be invalid, illegal, or unenforceable in any respect, the validity, legality, and enforceability of the remaining provisions contained herein shall not in any way be affected or impaired. Except as otherwise expressly provided herein, the remedies contained herein are cumulative and in addition to any other remedies at law or equity. A Party's failure to enforce any provision of this Agreement shall not constitute a waiver of any future enforcement of that or any other provision of this Agreement.

h) No Third-Party Beneficiaries. With the exception of Section 2 (e) of the End User Schedule, this Agreement does not constitute a third party beneficiary contract and, unless expressly and specifically stated in this Agreement, shall not be construed to be for the benefit of any person or entity not a party hereto, and no such person or entity shall have any license, right, or claim in connection with this Agreement.

i) Guidelines and Policies. Juniper may at any time modify any Online Policies, Guidelines and Procedures effective when posted to the applicable site, provided that no such modification shall affect the provision of

Hardware, Software, Cloud Services and/or Services under any Purchase Order accepted by Juniper prior to the effective date of such modification. By ordering Hardware, Software, Cloud Services and/or Services under this Agreement, Company understands that it is bound by Juniper's then-current version of its Online Policies, Guidelines and Procedures.

j) <u>Entire Agreement; Amendment</u>. The terms and conditions contained in the Agreement, including the GTC and applicable Schedule(s), any Special Terms, Attachments, Online Policies, Guidelines and Procedures incorporated by reference herein, constitute the entire agreement between the Parties and supersede all previous and/or contemporaneous agreements and understandings, whether oral or written, between the Parties hereto with respect to the subject matter of this Agreement. No waiver, consent, modification, amendment or change of the terms contained herein shall be binding unless in writing and signed by the relevant authorized representatives of each of the Parties.

16. The English Version of Agreement Governs

The English language version of this Agreement constitutes the entire understanding and contract between the Parties and supersedes all prior agreements, commitments or representations between the Parties, whether oral or written, as well as any downloaded or translated version of this Agreement, whether or not such downloaded or translated version is signed (including by digital or other electronic means) by either Party. Any copy of this Agreement made by reliable means (for example, photocopy or facsimile) is considered an original.

END USER SCHEDULE

(Applies to all of End User's purchases of Hardware, Software, Cloud Services and/or Services for internal use)

1. Scope of Agreement. This End User Schedule is between Juniper and the End User that licenses the right to use the Software and/or access the Cloud Services, and purchases the Hardware and/or Services as part of a solution (collectively, "**Juniper Solutions**"), either (i) directly from Juniper, and/or (ii) indirectly through Authorized Resellers, solely for internal use and not for resale. The applicable sections below will govern the licensing and/or purchase of the applicable Juniper Solutions.

2. Terms for all Juniper Solutions

a) <u>Transactional Terms</u>. Section 4 of the GTC applies to direct Orders only and does not apply to End User orders from an Authorized Reseller.

b) <u>Pricing</u>. Unless purchasing or licensing via an Authorized Reseller, or as otherwise negotiated on a deal by deal basis and set forth in a Quote or Purchase Order acknowledgement, the purchase price for the Hardware, Software, Cloud Services, and/or Services is as set forth in Juniper's then current price list effective at the time an End User Purchase Order is accepted by Juniper.

c) <u>Use of Third Party Products / Applicable Terms</u>. For non-Juniper branded products and/or services delivered in connection with this End User Schedule, such third-party products and/or services shall be separately governed and licensed by the applicable third-party product and/or services terms and conditions. Such third-party terms and conditions shall supersede this End User Schedule for non-Juniper branded products and/or services. For

the avoidance of doubt, the third-party supplier of non-Juniper branded products and services shall be solely responsible for support, warranties, indemnities and other terms and conditions applicable to such products and services.

d) <u>End of Life / End of Service</u>. Juniper will provide End of Life ("**EOL**") and End of Service ("**EOS**") notifications to End User for discontinued Hardware, Software, Cloud Services, and/or Services, either directly or through an announcement posted on the Juniper website, in accordance with Juniper's EOL/EOS Policies.

e) <u>Third Party Licensors</u>. To the extent that Juniper has embedded any third party software or components in any Juniper Solution, that third party licensor may enforce its license rights against the End User under the terms of this Agreement.

f) <u>End of Entitlement</u>. Upon cessation of the right to Use of Software or Cloud Services, End User shall promptly permanently delete, destroy or return all copies of the Software and any Confidential Information to Juniper, and End User shall, provide written certification that it has complied with this paragraph 2(f), if requested by Juniper.

3. Specific Terms for Hardware

a) <u>Hardware Warranty Policy</u>. The terms and conditions of the Juniper Product Warranty are available at https://support.juniper.net/support/warranty/.

b) <u>Title Transfer</u>. If End User decides to transfer title to its Juniper Platform, then it must remove all Software and/or Embedded Software before transferring title. All transferred Juniper Platforms and subsequent Software licensing are subject to the Service and Support Inspection and Reinstatement Policy.

4. Specific Terms for Services

a) <u>Support Services (Maintenance Services, Advanced Services, Education Services)</u>. The following terms in this Section constitute the End User Support Agreement ("**EUSA**") as referred to in the applicable Descriptive Content.

> i. <u>Service Term</u>. Subject to Juniper's acceptance of a valid Purchase Order from End User or an Authorized Reseller, the term of the applicable Service Contract will begin on: (1) the date of Purchase Order acceptance if the Purchase Order does not include the associated Hardware (if any) or the Service Contract is for Software only; (2) the date the Hardware is deemed delivered by Juniper if the Purchase Order for the Service Contract includes associated Hardware; or (3) the date as agreed to in writing between the Parties (including as quoted by Juniper and listed in the Purchase Order), if any, in which event such date shall supersede any date determined under (1) or (2).

> ii. <u>Renewal Term</u>. The start date of the Service Contract following the initial Services term of the Services (and any subsequent renewal terms) will begin on the day after the immediately preceding Service Contract expired.

> iii. <u>Renewal Process</u>. Subject to then applicable EOL/EOS Policies, no less than sixty (60) days prior to the expiration of the initial and subsequent Service Contract term, a notice of expiration and a Quote for the fees for the new Service Contract term will be provided by Juniper to End User or an Authorized Reseller. If End User wishes to purchase further Services, then End User shall provide a Purchase Order to Juniper or an Authorized Reseller, as per the Quote, to match the quotation on or before the expiration date of the then-current Service Contract term. Upon Juniper's receipt of such Order, End User or an Authorized Reseller placing the Order shall be invoiced in accordance with the terms of this End User Schedule.

iv. <u>Subcontracting</u>. Juniper may subcontract with, or assign to, its Affiliates or other third parties the obligations for performance of any Services.

v. <u>Descriptive Content</u>. Scope and details of Support Service-specific terms are specified in the applicable Descriptive Content that is attached to or referred to in a Schedule or Quote, or is made available through the then-current Juniper website. The version of the applicable document that is effective as of the date of the applicable Quote, shall be deemed incorporated by reference into the Purchase Order.

vi. <u>True Up</u>. End User must promptly True Up any unpurchased Support Services rendered by Juniper.

b) <u>Professional Services</u>. End User may request on an "as-needed", non-exclusive basis Professional Services. Where Juniper agrees to provide such Professional Services the Parties will mutually agree on a SOW, which shall include at a minimum: (i) a reasonably detailed description of the project or Professional Services to be performed; (ii) a schedule and completion date; (iii) the position description of who will perform the applicable Professional Services; (iv) an acceptance procedure for the Professional Services rendered; (v) a compensation and payment schedule; and (vi) the identity of the End User who will receive the benefit of the Professional Services. Where the Professional Services are provided to End User through an Authorized Reseller, the Authorized Reseller will deliver such services under a SOW as agreed between End User and such Authorized Reseller.

i. <u>End User Obligations</u>. End User: (1) shall be responsible for the accuracy and completeness of the information End User provides to Juniper; (2) agrees to provide all necessary direction and cooperation to enable Juniper to provide the Professional Services; and (3) agrees to provide instructions in a manner reasonably requested by Juniper and Juniper shall be entitled to act on any such instructions, whether provided verbally, electronically, or in writing by a person known to Juniper and that Juniper reasonably believes to be authorized to act on End User's behalf or End User's designee.

ii. <u>Juniper Obligations</u>. Juniper: (1) will not be responsible for any delays or liability arising from missing, delayed, incomplete, inaccurate or outdated information provided by End User, or if End User does not provide adequate access to its employees, agents, and other representatives necessary for Juniper to perform the Professional Services; and (2) represents and warrants that the Professional Services will be provided in a professional and workmanlike manner and performed in accordance with generally accepted industry standards; and (3) will be solely responsible for securing suitably trained and experienced personnel to perform Professional Services hereunder.

5. Specific Terms for Software and Cloud Services

a) <u>License and Right to Use</u>. Subject to the terms and conditions of this End User Schedule, Juniper grants End User a non-exclusive, non-transferable (subject to Section 5 b) below): (i) license to Use the Software, and (ii) right to Use the Cloud Services, during the License Term and/or Subscription Term, as applicable, for up to the Licensed Units. Licenses or rights to Use the Software and/or Cloud Services that are not expressly granted in this End User Schedule shall not arise by implication or otherwise and are hereby expressly reserved. End User shall have no right or license in the Software, nor a right to Use the Cloud Services, unless End User rightfully acquired the Software or purchased the right to Use the Cloud Services from an Approved Source. Unless expressly authorized by Juniper, Use of the Software and/or Cloud Services may not exceed the Licensed Units for such Software and/or Cloud Services.

b) <u>General Restrictions</u>. Unless expressly authorized by Juniper, or except to the extent transfer may not be legally restricted under applicable Law, End User shall not sublicense, transfer, or assign, whether voluntarily or by operation of law, any right or license in or to the Software and/or Cloud Services to any other person or legal entity, including an End User Affiliate, even if End User transfers title to the Juniper Platform or when a lease to any Juniper Platform ceases. Any such attempted sublicense, transfer, or assignment shall be void. Further, End User shall not: (i) directly or indirectly, decompile, disassemble, reverse engineer, modify, unbundle, detach or separate any part of or embed within, or create derivative works based on, any Software and/or Cloud Services; (ii) sell, resell, rent or lease any Software and/or Cloud Services; (iii) unless expressly authorized by Juniper, make any copies of Software and/or Cloud Services except as reasonably necessary for archival and "cold" back-up purposes, but not for failover or "warm" back-up purposes; (iv) remove (or, if the license includes the right to make copies of the Software, fail to include in those copies) any readme files, notices, disclaimers, marks, or labels included in or on the Software and/or any Juniper Platform as delivered by Juniper or any Juniper Authorized Reseller; and (v) Use or allow Use of the Software or Cloud Services in violation of any applicable Law or to support or facilitate any illegal activity.

c) <u>Fulfillment Email and License Activation</u>. To download purchased Software, or Use Cloud Services, End User must register with Juniper by name as the end user of the Software or Cloud Services. Juniper will send a Fulfillment Email to End User's email that is registered with Juniper or as provided by the End User on the Purchase Order. Juniper shall not be liable for acts and omissions of the Authorized Reseller, including but not limited to, the Authorized Reseller's failure to include End User's proper email address on the Purchase Order to Juniper. The Fulfillment Email will provide End User, or the Authorized Reseller, with details on how to activate and Use the Software or Cloud Services that End User has purchased.

d) <u>Subscription Term</u>. The applicable Subscription Term will be listed in the SKU. The Subscription start date will commence on the date of the Fulfillment Email. The Subscription will end at the expiration of the Subscription Term. Unless agreed to in writing, the Subscription will not automatically renew. For any new Subscription: (i) new Subscriptions can be purchased at any time, provided that such purchases are not for retroactive coverage; and (ii) upon End User's timely renewal of a Subscription, the start date of End User's renewed Subscription Term will be the day following the expiration of its then-current Subscription Term.

e) <u>Expired Subscription Renewals</u>. For all Subscriptions that have lapsed: (i) Subscription renewals will be backdated to the day following the end of the expired Subscription term; and (ii) after a thirty (30) day lapse, access to the Software and/or Cloud Services may be disabled, Cloud Service functionality may be reduced or limited to read only access, and/or End User's right to Use will be revoked. If access is disabled due to a lapse of thirty (30) days, then End User must purchase a new Subscription to resume the Cloud Service. Expired Subscription renewals are subject to the Service and Support Inspection and Reinstatement Policy.

f) <u>Non-Commercial Purposes/Trial Terms</u>. Software or Cloud Services that are licensed for non-commercial purposes, including but not limited to trial, demonstration, education, or for End User's internal testing and lab purposes ("**Non-commercial Purposes**") are provided by Juniper "AS IS WITH ALL FAULTS AND WITHOUT EXPRESS OR IMPLIED WARRANTIES, CONDITIONS, OR REMEDIES and shall be offered free of charge until the earlier of: (i) cancellation of the free trial of Software or Cloud Services in Juniper's sole discretion and without notice; (ii) expiration of the free trial of Software or Cloud Services, time-limited by Juniper under additional trial terms; (iii) if applicable, the Client Software, is no longer a supported release under an active Service Contract under the terms of this End User Schedule or, to the extent applicable, an accepted agreement for Software

support and Maintenance Services between End User and Juniper; or (iv) the start date of any purchased Software or Cloud Services ordered by End User. In no event shall Juniper have any obligation to continue nor any obligation to renew any Software License or Cloud Service Subscription used for Non-commercial Purposes. Software and/or Cloud Services that have been licensed for Non-commercial Purposes shall not be Used in a production environment. Additional trial terms and conditions may appear on an applicable Juniper registration web page. Any such additional terms and conditions are incorporated into this End User Schedule by reference and are legally binding.

g) <u>Federal Government End User Provisions</u>. The Software and Cloud Services herein constitute "commercial items" and include "commercial computer software" and "commercial computer software documentation." Pursuant to Federal Acquisition Regulations 12.211 and 12.212 or Defense Federal Acquisition Regulation Supplement 227.7102-1 and 227.7202-3, as applicable, and Department of Defense transactions DFAR 252.227-7015, as applicable, the U.S. Government shall have only the license rights in technical data, computer software, and computer software documentation specified in this Agreement, and no Authorized Reseller may agree to grant End User any rights in Juniper's technical data inconsistent with this Agreement. Any provisions within this Agreement that are inconsistent with federal procurement regulations are not enforceable against the U.S. Government. If a government agency has a need for rights not conveyed under these terms, it must negotiate with Juniper to determine if there are acceptable terms for transferring such rights, and a mutually acceptable written addendum specifically conveying such rights must be included in any applicable contract or agreement.

h) <u>Data Protection</u>.   In connection with End User's use of Software and/or Cloud Services, Juniper collects and uses Processed Data in accordance with the Juniper Privacy Policy. By using the Software and/or Cloud Services, End User agrees to allow Juniper to collect and use Processed Data as contemplated in this Agreement.

i) <u>Software Warranty and Performance</u>. The terms and conditions of the Juniper Product Warranty applicable to Software are available at https://support.juniper.net/support/warranty/. During the Subscription Term, Juniper will provide the Cloud Services with commercially reasonable care in material conformance with the Documentation and Descriptive Content.

6. Supplemental terms for Software

a) <u>Scope</u>. The terms in this Section apply solely to End User's licensing of Software.

b) <u>Software Use</u>. End User may Use the Software on any device that supports it, EXCEPT: (i) Software under an Embedded Software License; (ii) for operating system Software that is licensed and purchased separately from the Juniper Platform, which, assuming such operating system Software is under an effective warranty or Maintenance Services agreement, may only be Used on a replacement Juniper Platform (obtained from Juniper or an Authorized Reseller) in the event of a Hardware failure (with prompt written notice to Juniper); (iii) for Software and its Updates that End User accesses through a Commercial Cloud Service provider acting as an Authorized Reseller or other Juniper-authorized Commercial Cloud Service provider, in which case End User shall be entitled to access and Use only such Software Instance(s) as may be provisioned for End User in the Commercial Cloud Service environment and End User's right to Use shall be solely through the Commercial Cloud Service; or (iv) as otherwise agreed to in a written amendment to this End User Schedule or as set forth in any custom terms between the Parties).

c) <u>Software Updates</u>. Juniper grants End User a license and right to use, solely during the Perpetual License term or Subscription Term, Updates made available as part of Maintenance Services contracted for such Software license or Juniper Platform (for Embedded Software Licenses and its associated Feature Set Licenses), for up to the Licensed Units. Each Update, if any, shall be subject to the same terms and conditions as the Software to which such Update pertains.

d) <u>Source Code</u>. In the limited event that licensed Software includes source code, such source code is provided for reference purposes only unless expressly licensed otherwise by Juniper or its licensors.

e) <u>Perpetual Licensing</u>. Subject to End User's compliance with the terms of this End User Schedule, Software with a Perpetual License will be licensed to End User for a perpetual License term. The perpetual License term will commence on the date that: (i) for Embedded Software or bundled Software with a Hardware component, the Hardware component is delivered; or (ii) in all other cases, Juniper sends End User the associated Fulfillment Email.

f) <u>License Compliance Management</u>. End User shall track its Use of Juniper Software in order to True Up unlicensed use and/or use of a specific Juniper Licensing model. Such tracking may be managed by: (i) the Juniper Agile Licensing ("**JAL**") License Manager tool; (ii) a successor tool provided by Juniper; or (iii) by End User's manual tracking.

g) <u>Java Trademark Guidelines</u>. End User must: (i) comply with the Java Trademark Guidelines; (ii) not do anything harmful to, or inconsistent with, the rights of the Java Rightsholder; and (iii) assist the Java Rightsholder in protecting and restoring its rights, to the extent that the Software contains Java.

h) <u>Use of Software with Third Party Cloud Services</u>. End User's right of access and Use of the Software as part of a third party cloud service is subject to the ongoing validity and compliance with the applicable third party cloud service terms of use imposed by the third party cloud service provider. Termination, suspension, or unavailability of the third party cloud service is at End User's own risk and End User acknowledges that Juniper shall have no liability or duty arising out of any such termination, suspension or unavailability. For purposes of clarity, if End User uses the Software with a Juniper Cloud Service, then such Cloud Service will be subject to Section 7 of this Schedule below.

7. Supplemental terms for Cloud Services

a) <u>Cloud Service Subscriptions</u>. If End User purchases Cloud Services, Juniper will provide End User with a Subscription for non-perpetual Cloud Services, that includes Support Services as defined in the applicable CSD. Juniper reserves all rights, title and interest in and to the Cloud Services, including all related intellectual property rights. No rights are granted to End User hereunder other than as expressly set forth herein.

b) <u>End User's Responsibilities</u>. End User shall: (i) require its Users' compliance with this End User Schedule; (ii) if applicable, be solely responsible for the accuracy, quality, integrity and legality of End User Data and of the means by which End User acquired End User Data; (iii) prevent unauthorized Use of the Cloud Services, and notify Juniper promptly both orally and in writing of any such unauthorized Use; (iv) Use the Cloud Services only in accordance with the User Guides, CSDs, and applicable Laws; (v) obtain any and all third party consents necessary for the use and processing of End User Data in connection with Cloud Services as contemplated in this Agreement; (vi) if applicable, maintain the supported release of the Client Software and also maintain the Juniper Hardware and/or Software, if any, connected with the Cloud Service under the terms of the applicable

Descriptive Content; and (vii) Use the Cloud Services with only appropriately licensed and/or Juniper approved third party software and technology. If the Cloud Service is made available as a feature of a Juniper Solution, the Juniper Solution(s) is/are not provided as a part of the Cloud Service and must be purchased separately from Juniper or an Authorized Reseller. Unless the Cloud Service is a security Cloud Service, to the extent that the Cloud Service includes security features and functionalities, End User will not rely on the Cloud Service as End User's network's sole, complete, or timely source of protection from network security threats, including but not limited to, Malicious Code.

c) <u>Additional Cloud Service Restrictions</u>. End User shall not: (i) authorize or allow any person's or entity's direct or indirect access to the Cloud Services (or Use the Cloud Services) other than a User or Users acting for End User's sole benefit in furtherance of End User's internal business operations; (ii) Use the Cloud Services with third party products other than those for which the Cloud Services were purchased or otherwise intended to be used with the Cloud Services, as provided by Juniper in any of the applicable Documentation; (iii) Use the Cloud Services to store or transmit infringing, libelous, or otherwise unlawful or tortious material, or to store or transmit material in violation of third-party privacy rights; (iv) Use the Cloud Services to store or transmit Malicious Code (except to the extent that the Cloud Services include malware scanning, security screening or other threat detection features, such as the option for End User to submit custom threat feeds); (v) interfere with or disrupt the integrity or performance of the Cloud Services or third-party data contained therein; (vi) attempt to gain unauthorized access to the Cloud Services or their related systems or networks; (vii) permit any third party to access the Cloud Services except as permitted herein; or (viii) allow any individual, entity or organization to gain access to the Cloud Service if End User knows, or has reason to believe, that such individual, entity or organization is (or is acting on behalf of) either: (1) any individual, entity or organization identified as a sanctioned party on any list maintained and published by the U.S. Department of Treasury, Office of Foreign Asset Control, or on any similar list of sanctioned parties published by an agency of the US, the EU or any member country of the EU; or (2) an entity or organization 50% or more controlled, directly or indirectly, by a party so listed.

Juniper reserves the right, without liability, to disable End User's access to the Cloud Services in the event of any material breach by End User or its Users or anyone on End User's behalf, of the provisions set forth in this Section.

d) <u>Network Connection</u>. End User shall be solely responsible for procuring and maintaining End User's network connections and telecommunication links from End User's systems to Juniper's servers from which the Cloud Services are accessed. End User shall be solely liable for problems, conditions, delays, delivery failures and all other loss or damage arising from or relating to End User's network connections or telecommunications links, or internet connection.

e) <u>Cloud Service Subscription Activations</u>. For Cloud Services that are purchased as part of a Juniper Solution that includes Hardware, or purchased as standalone Cloud Services, the Subscription Term begins upon delivery of the Fulfillment Email to End User.

f) <u>Cloud Service Subscription Cancellations</u>. Pre-paid Subscriptions to Cloud Services are non-cancellable and non-refundable unless such cancellation is due to Juniper's uncured breach of these terms of this End User Schedule, in which case End User shall be entitled to a pro-rata refund taking into account the remaining term of such Cloud Services at the time of such cancellation.

g) <u>Cloud Services Provided Through Software</u>. Depending upon the Cloud Service purchased, as described within the applicable User Guides, the Cloud Services may be provided through licensed Software which is subject to the End User Software licensing terms in this End User Schedule.

h) <u>Descriptive Content</u>. The scope and details of Cloud Service-specific terms are specified in the applicable Descriptive Content that is attached to or referred to in a Schedule and/or Quote or is made available through the then-current Juniper website. The version of the applicable document that is effective as of the date of the applicable Quote, shall be deemed incorporated by reference into the Purchase Order.

GLOSSARY

A. Definitions applicable to the General Terms and Conditions

"<u>Address Details</u>" means the Juniper corporate address as set forth at https://www.juniper.net/us/en/contact-us/corporate-counsel/, but does not include any email address (if listed).

"<u>Advanced Services</u>" means the resident engineer services and resident consulting services, as well as other services posted at https://support.juniper.net/support/guidelines/ and provided by Juniper.

"<u>Affiliate</u>" of a party means, any entity and its successors controlled by, controlling, or under common control with, such party, where "control" in any of the foregoing forms means ownership, either direct or indirect, of more than 50% of the equity interest entitled to vote for the election of directors or equivalent governing body. An entity shall be considered an Affiliate only so long as such entity continues to meet the foregoing definition.

"<u>Agreement</u>" has the meaning set forth in the Preamble.

"<u>Agreement Term</u>" has the meaning set forth in Section 3 of the GTC.

"<u>Authorized Reseller</u>" means a reseller of Juniper Hardware, Software, Services and/or Cloud Services that sells Juniper Hardware, Software, Services and/or Cloud Services contracts to End Users pursuant to a valid contract with Juniper to conduct such resale activities.

"<u>Business Partner Code of Conduct</u>" means the code of conduct which is located and accessible at http://www.juniper.net/assets/us/en/local/pdf/additional-resources/business-partner-code-of-conduct.pdf.

"<u>Channel Schedule</u>" means the terms and conditions applicable to Authorized Resellers only.

"<u>Cloud Services</u>" means online services provided over the Internet by Juniper to which Sections 5 and 7 of the End User Schedule applies.

"<u>Codes</u>" means: (a) Juniper's Business Partner Code of Conduct; and (b) any other policies, guidelines or references that Juniper makes available to Company from time to time.

"<u>Company</u>" means the Party referenced in the Preamble purchasing and/or licensing Hardware, Software, Services and/or Cloud Services from Juniper hereunder.

"Compliance Rules" means: (a) Laws; (b) any legislation or regulation with respect to anti-bribery, anti-slavery, anti-corruption (including the U.S. Foreign Corrupt Practices Act and the UK Bribery Act) or anti-terrorism; and (c) any Codes.

"Confidential Information" has the meaning set forth in Section 6 of the GTC.

"CSD" or "Cloud Service Description" means a Cloud Service Description, including but not limited to: the incorporated Support Services with any Cloud Service, Juniper's obligations in providing the Cloud Service, and Cloud Service specific privacy and data protection information posted at http://www.juniper.net/support/guidelines.html and referencing this Agreement as governing terms for the Cloud Services described therein.

"Descriptive Content" means materials, documentation, and information that describes the Hardware, Software, Services, and/or Cloud Services as made available by Juniper from time to time, and includes "Data Sheets," "Service Description Document(s)," or "Cloud Service Description(s)".

"Documentation" in any form whatsoever, means any Juniper manuals, materials, guides, specifications, tables, charts, diagrams, pictures, schematics, plans, methods, reports or testing procedures, and any information required for training or education purposes and includes any updates, changes, or derivatives of any of the foregoing.

"DPA" has the meaning set forth in Section 7 in the GTC.

"Education Services" means training and education services provided by Juniper.

"Effective Date" has the meaning set forth in Section 3 in the GTC.

"End User" means the person or organization that originally purchases, leases or licenses Hardware, Software, Services and/or Cloud Services from Juniper or an Authorized Reseller for use in such person's or organization's own business operations and not for further distribution or sale.

"End User Data" means all information submitted by Company to Juniper and may include third party data that Company submits to Juniper.

"End User Schedule" means the terms and conditions applicable to End Users only.

"Hardware" means the physical components of Juniper's equipment delivered in connection with this Agreement.

"Indemnitees" has the meaning set forth in Section 9 of the GTC.

"IP Claims" has the meaning set forth in Section 10 of the GTC.

"Juniper " means, if Hardware, Software, Services and/or Cloud Services are shipped, rendered, delivered or deployed by Juniper or an Authorized Reseller to a location in: (a) North America, Central America or South America, Juniper Networks (U.S.), Inc; (b) United Kingdom, Juniper Networks (U.K.) Limited; (c) India, Juniper Networks Solution India Private Limited; (d) Australia, Juniper Networks Australia Pty Ltd; or where a location is not listed above, Juniper Networks International B.V., and in the case of on-site Services, exclusively means the local Juniper Contracting Entity.

"Juniper Contracting Entity" means the Affiliate of Juniper that is the Juniper signatory to the Statement of Work.

"Juniper Privacy Policy" means the Juniper Privacy Policy posted at the following URL: https://www.juniper.net/us/en/privacy-policy/.

"Laws" means laws, ordinances, codes, rules, standards, and regulations of any territory or jurisdiction.

"Maintenance Services" means the technical support services and maintenance provided by Juniper as fully described in the applicable SDD or CSD.

"Onboarding Information" means information that Juniper provides to the Company (as updated from time to time) for the purposes of transacting under this Agreement and, in the case where Company provides information to Juniper, may include End User Data.

"Online Policies, Guidelines and Procedures" means, without limitation, any policies, guidelines, or procedures, that are applicable to any Hardware, Software, Cloud Services, and Services, or that are referenced in this Agreement and that are posted at Juniper's website, www.juniper.net.

"Party" and "Parties" have the meaning set forth in the Preamble.

"Professional Services" means plan, build, migration and optimization services set forth in a Statement of Work.

"Purchase Order" or "Order" means an Order issued to and accepted by Juniper which is fully authorized by a Company representative and subject to the terms and conditions of this Agreement.

"Purchase Order Requirements" means the Purchase Order Requirements located at https://partners.juniper.net/partnercenter/sales/product-ordering/.

"Preamble" means the terms and conditions contemplated before Section 1 of the GTC.

"Quote" means a Juniper quotation issued to the End User or the Authorized Reseller.

"Receiving Party" has the meaning set forth in Section 6 of the GTC.

"Schedule" means the Channel Schedule and/or the End User Schedule attached to these General Terms and Conditions.

"SDD" or "Services Description Document" means a Services Description Document posted at http://www.juniper.net/support/guidelines.html and referencing this Agreement as governing terms for the services described therein.

"Services" means collectively Maintenance Services, Advanced Services, Education Services, and Professional Services.

"Shipping Terms Exhibit" has the meaning set forth in Section 4 of the GTC.

"Special Terms" has the meaning set forth in Section 2 of the GTC.

"Software" means the Juniper machine-readable object code and accompanying activation keys, if any, made available under this Agreement, whether incorporated in the Hardware (e.g., firmware) or delivered

separately, and includes Software Releases and any Updates of that Software the End User is entitled to through Maintenance Services.

"Software Release" means a new production version of the Software.

"Statement of Work" or "SOW" means the scope and details of customized Professional Services documented in a mutually agreed to Statement of Work entered into in connection with this Agreement.

"Supported Release" means the version of the Software and certain prior versions of the Software as set forth in Juniper's then current EOL/EOS Policies.

"Tax" or "Taxes" means all taxes, levies, imposts, all custom duties, tariffs, import fees, fines or other charges of whatsoever nature however imposed by any jurisdiction, country or any subdivision or authority thereof in any way connected with this Agreement or any instrument or agreement required hereunder, and all interest, penalties or similar liabilities with respect thereto, except such taxes as are imposed on or measured by a Party's net income or property.

"Update" is defined in the Service Description Document that pertains to the Maintenance Services purchased or included with the Software, as applicable.

B.   **Definitions applicable to the End User Schedule**

"Approved Source" means Juniper or an Authorized Reseller.

"Client Software" means the portion of the Software which enables End User to access, manage or utilize the Cloud Service.

"Commercial Cloud Service(s)" means a service offered and administered by Juniper, or an authorized third party, whereby End User may without downloading or otherwise taking delivery of a copy of the Software use and access Instances of Software running in a virtual machine environment resident in a networked cloud facility or group of facilities.

"Embedded Software" means the operating system Software pre-installed on the Juniper Platform, and is required for the proper functioning of the Juniper Platform and/or for the proper functioning of the cloud services purchased in connection with the Juniper Platform.

"Embedded Software Licenses" means the limited right to Use the Embedded Software and included in the purchase of the Juniper Platform but does not include the right to Use Separately Licensable Features and may not be used in excess of the Licensed Units identified in the SKU for the Juniper Platform. Embedded Software Licenses are Perpetual unless the Juniper Hardware is leased or provided for demonstration purposes, in which case the Embedded Software License term shall follow the lease term or demonstration period and shall terminate automatically upon the expiration of the lease term or demonstration period.

"Embargoed Region" means a country or region subject to comprehensive embargo under US or Netherlands law or regulation or that is classified under US Export Administration Regulations (EAR) as a Group E:1 or E:2 country (see US EAR Supplement No. 1 to Part 740). Regions qualifying under this definition of Embargoed Region as of January 2018 include Cuba, Iran, North Korea, Syria, and the region of Crimea.

"End User Data" means all information submitted by End User to the Cloud Services and may include third party data that End User submits to the Cloud Services.

"EOL/EOS Policies" means policies and guidelines published at https://www.juniper.net/support/eol/# pertaining to product end of life notifications, last order date, end of engineering support, end of support, and like product end of life milestones for Juniper Hardware, Software, Services, and/or Cloud Services.

"Feature Set License" means the limited right to Use solely the certain set of features and functionalities of the Software as described in the Fulfillment Email and SKU, regardless of whether any additional feature or functionality is unlocked and thus accessible to End User in the Software. Feature Set Licenses may also be combined with other Juniper Software licenses.

"Fulfillment Email" means the email document that confirms the End User's purchase of the Software Licenses and/or the Cloud Service for the associated Subscription Term, SKU(s) and, if applicable, contains the activation code or license key, respectively for Software Licenses and/or the Cloud Service, and may be sent by Juniper to (a) the End User directly; or (b) the Authorized Reseller transacting with the End User.

"Instance" means each time the Software runs on any device.

"Java Rightsholder" means Oracle America, Inc.

"Java Trademark Guidelines" are available at http://www.oracle.com/us/technologies/java/java-licensing-logo-guidelines-1908204.pdf.

"Juniper Platform" means any Juniper-provided, but not any third-party-provided, Hardware.

"Juniper Solutions" has the meaning set forth in Section 1 of the End User Schedule.

"License Metric" means a unit of measurement that restricts the scope of use of the Software (e.g., Feature Set License, Instance, Network Element or Node, Session Socket or CPU Socket or Throughput or any other unit of measurement set forth in a SKU) or Fulfillment Email).

"License Term" means the period of time that the Software is licensed to be Used by End User, subject to the terms and conditions of this Agreement.

"Licensed Units" mean a number of units under a License Metric that limits the Use of the licensed Software or use of the Cloud Services (e.g. 10M, 50 Nodes, 1000 Sessions or any other units under a License Metric set forth in a SKU or Fulfillment Email) as set forth in the Fulfillment Email.

"Malicious Code" means viruses, worms, time bombs, trojan horses and other harmful or malicious code, files, scripts, agents, programs, or any identifying information or other metadata associated with them, such as suspected malicious website, URL, or IP addresses.

"Network Element" or "Node" means a physical or virtual device that is recognizable by the Software as a unique device that the Software may directly or indirectly administer, monitor, manage, provision, or configure.

"Non-commercial License" means Software that is used for Non-commercial Purposes.

"Non-commercial Purposes" has the meaning set forth in Section 7.

"Perpetual License" means a license that continues until the first to occur of termination by Juniper or End User's violation of any term or condition of this Agreement, unless such violation is waived in writing by Juniper, and does not include a Subscription License or a Non-commercial License.

"Processed Data" means information about End User's devices or systems generated or otherwise provided in connection with End User's usage of the Cloud Service, as well as any network management information or configuration data generated or otherwise provided from the use of End User's Processed Data with the Cloud Service.

"Separately Licensable Features" means specific features and functionalities of the Software that may only be Used if a Feature Set License is obtained and such features and functionalities are expressly set forth in a SKU) or Fulfillment Email.

"Session" means a stateful information exchange connection established for communication between two devices through a gateway.

"Service and Support Inspection and Reinstatement Policy" means Juniper's Service and Support Inspection and Reinstatement Policy that can be accessed at https://support.juniper.net/support/pdf/guidelines/990222.pdf.

"Service Contract" means a contract for Support Services provided directly by Juniper to the End User as more fully described in the relevant Services Description Document ("SDD") or Cloud Services Description ("CSD") posted at http://www.juniper.net/support/guidelines.html (and any reference to the 'End User Support Agreement or 'EUSA' in a SDD or CSD is a reference to the applicable terms and conditions within this Schedule), and itemized in a Quote and/or Purchase Order as applicable.

"SKU" means a stock-keeping unit or unique identifier for each distinct product and service that can be purchased and any summary description of such product or service associated therewith.

"Socket" or "CPU Socket" means a mechanical component that provides electrical connectivity between a microprocessor and a printed circuit board.

"Subscription" means a license to Use the Software and/or Cloud Services with accompanying Maintenance Services solely during a fixed Subscription Term, unless terminated earlier by Juniper pursuant to the terms and conditions of this Agreement.

"Subscription Term" means the period of time during which a Software subscription or Cloud Services subscription is active, as set forth in the Fulfillment Email.

"Support Services" means collectively Maintenance Services, Advanced Services, and Education Services.

"Throughput" means the maximum possible bits of inbound data traffic capable of being processed per second by an Instance of Software. A Throughput license may not be split across multiple Instances. Throughput licenses will be identified in the SKU description and Fulfillment Email in units of megabits per second (Mbps or M), gigabits per second (Gbps or G), or terabits per second (Tbps or T).

"True Up" means an End User accounting and payment for all deployments or Use of unpurchased or unlicensed Juniper Hardware, Software, Services and/or Cloud Services.

"<u>Update</u>" is defined in the Service Description Document that pertains to the Maintenance Services purchased or included with the Software, as applicable, and any End User rights to Use apply only to the: (a) active or deployed Update; or (b) then-current Update.

"<u>Use</u>" and "<u>Used</u>" means, in the case of: (a) Software, to install, utilize, access, activate, or view the Software in executable form; or (b) Cloud Service, to access or consume that Cloud Service.

"<u>User Guide</u>" means the online user guide, technical guide, data sheets, and/or CSD for the Cloud Services, accessible via a Juniper designated website as updated from time to time.

"<u>Users</u>" means individuals who: (a) are authorized by End User to use on End User's behalf the Software or Cloud Services for which Subscriptions have been purchased by End User or as part of a free trial; and (b) include, without limitation, end users, employees, consultants, contractors and agents with which End User transacts business.

Section	Part Number	Description	Manufacturer and Model if bidding "or Equal" products	Unit of Measure	Quantity	Unit Cost	Extended Cost
		Equipment					
3.1.1	**N9K-C9336C-FX2-B2**	**Contract Item #1** - Cisco 2xNexus Core Switches 9336C-FX2, **(2xNexus 9336C-FX2 w/ 8x 100G Optics)** or Equal	Juniper QFX5120-32C-AFI Bundle SKU	EA	1	$ -	$ -
3.1.1.3.1	N9K-C9336C-FX2-B	Nexus 9336C-FX2 bundle PID, or Equal	**Juniper QFX5120-32C-AFI**	EA	1	$ 7,590.00	$ 7,590.00
3.1.1.3.2	NXOS-9.2.3	Nexus 9500, 9300, 3000 Base NX-OS Software Rel 9.2.3, or Equal		EA	1	$ -	$ -
3.1.1.3.3	NXK-ACC-KIT-1RU	Nexus 3K/9K Fixed Accessory Kit, 1RU front and rear removal, or Equal	**Juniper EX-4PST-RMK**	EA	1	$ 125.00	$ 125.00
3.1.1.3.4	NXA-FAN-65CFM-PE	Nexus Fan, 65CFM, port side exhaust airflow, or Equal	**Juniper QFX520048Y-FAN-AI**	EA	3	$ -	$ -
3.1.1.3.5	NXA-PAC-1100W-PE2	Nexus AC 1100W PSU - Port Side Exhaust, or Equal	**Juniper QFX520048Y-650W-AC-AFI**	EA	2	$ -	$ -
3.1.1.3.6	CAB-9K12A-NA	Power Cord, 125VAC 13A NEMA 5-15 Plug, North America, or Equal	**Juniper CBL-EX-PWR-C13-US**	EA	2	$ -	$ -
3.1.1.3.7	NXK-PICK-BIDI	PID to select QSFP-100G-SR-BD Optic in the bundle, or Equal	-	EA	1	$ -	$ -
3.1.1.3.8	QSFP-40/100-SRBD	100G and 40GBASE SR-BiDi QSFP Transceiver, LC, 100m OM4 MMF, or Equal	**Juniper JNP-QSFP-100G-BXSR**	EA	4	$ 684.13	$ 2,736.52
3.1.1.3.9	N9K-C9336C-FX2-B	Nexus 9336C-FX2 bundle PID, or Equal	**Juniper QFX5120-32C-AFI**	EA	1	$ 7,590.00	$ 7,590.00
3.1.1.3.10	NXOS-9.2.3	Nexus 9500, 9300, 3000 Base NX-OS Software Rel 9.2.3, or Equal		EA	1	$ -	$ -
3.1.1.3.11	NXK-ACC-KIT-1RU	Nexus 3K/9K Fixed Accessory Kit, 1RU front and rear removal, or Equal	**Juniper EX-4PST-RMK**	EA	1	$ 125.00	$ 125.00
3.1.1.3.12	NXA-FAN-65CFM-PE	Nexus Fan, 65CFM, port side exhast airflow, or Equal	**Juniper QFX520048Y-FAN-AI**	EA	3	$ -	$ -
3.1.1.3.13	NXA-PAC-1100W-PE2	Nexus AC 1100W PSU - Port Side Exhaust, or Equal	**Juniper QFX520048Y-650W-AC-AFI**	EA	2	$ -	$ -
3.1.1.3.14	CAB-9K12A-NA	Power Cord, 125VAC 13A NEMA 5-15 Plug, North America, or Equal	**Juniper CBL-EX-PWR-C13-US**	EA	2	$ -	$ -
3.1.1.3.15	NXK-PICK-BIDI	PID to select QSFP-100G-SR-BD Optic in the bundle, or Equal	-	EA	1	$ -	$ -
3.1.1.3.16	QSFP-40/100-SRBD	100G and 40GBASE SR-BiDi QSFP Transceiver, LC, 100m OM4 MMF, or Equal	**Juniper JNP-QSFP-100G-BXSR**	EA	4	$ 684.13	$ 2,736.52
3.1.1.3.17	N93-LAN1K9	LAN Enterprise License for Nexus 9300 Platform, or Equal	**Juniper S-QFX5K-C2-A2-P**	EA	1	$ 7,969.50	$ 7,969.50
3.1.1.3.18	CON-ECMU-N93LAN	SWSS UPGRADES LAN Enterprise License for Nexus 9300 Pl, or Equal	**Juniper SVC-COR-QFX5KC2A2P**	EA	1	$ 1,035.00	$ 1,035.00
3.1.1.3.19	N93-LAN1K9	LAN Enterprise License for Nexus 9300 Platform, or Equal	**Juniper S-QFX5K-C2-A2-P**	EA	1	$ 7,969.50	$ 7,969.50
3.1.1.3.20	CON-ECMU-N93LAN	SWSS UPGRADES LAN Enterprise License for Nexus 9300 Pl, or Equal	**Juniper SVC-COR-QFX5KC2A2P**	EA	1	$ 1,035.00	$ 1,035.00
3.1.1.3.21	QSFP-100G-CU1M	100GBASE-CR4 Passive Copper Cable, 1m, or Equal	**Juniper JNP-100G-DAC-1M**	EA	1	$ 54.96	$ 54.96
3.1.2	**N9K-C93180-EX-B24C**	**Contract Item #2** - Cisco 2xNexus Top of Rack SFP+ Switches, Cisco 93180YC-EX, **(2xNexus 93180YC-EX w/ 8x 100G Optics)** or Equal	Juniper QFX5120-48Y-AFI Bundle SKU	EA	1	$ -	$ -
3.1.2.3.1	N9K-C93180YC-EX-B	Nexus 93180YC-EX bundle PID, or Equal	**Juniper QFX5120-48Y-AFI**	EA	1	$ 8,326.92	$ 8,326.92
3.1.2.3.2	NXK-PICK-BIDI	PID to select QSFP-100G-SR-BD Optic in the bundle, or Equal		EA	1	$ -	$ -
3.1.2.3.3	QSFP-40/100-SRBD	100G and 40GBASE SR-BiDi QSFP Transceiver, LC, 100m OM4 MMF, or Equal	**Juniper JNP-QSFP-100G-BXSR**	EA	4	$ 684.13	$ 2,736.52
3.1.2.3.4	NXA-PAC-650W-PE	Nexus NEBs AC 650W PSU - Port Side Exhaust, or Equal	**Juniper JPSU-650W-AC-AI**	EA	2	$ -	$ -
3.1.2.3.5	NXA-FAN-30CFM-F	Nexus 2K/3K/9K Single Fan, port side exhaust airflow, or Equal	**Juniper QFX5110-FANAFI**	EA	4	$ -	$ -
3.1.2.3.6	N9K-C93180YC-EX-B	Nexus 93180YC-EX bundle PID, or Equal	**Juniper QFX5120-48Y-AFI**	EA	1	$ 8,326.92	$ 8,326.92
3.1.2.3.7	NXK-PICK-BIDI	PID to select QSFP-100G-SR-BD Optic in the bundle, or Equal	-	EA	1	$ -	$ -
3.1.2.3.8	QSFP-40/100-SRBD	100G and 40GBASE SR-BiDi QSFP Transceiver, LC, 100m OM4 MMF, or Equal	**Juniper JNP-QSFP-100G-BXSR**	EA	4	$ 684.13	$ 2,736.52
3.1.2.3.9	NXA-PAC-650W-PE	Nexus NEBs AC 650W PSU - Port Side Exhaust, or Equal	**Juniper JPSU-650W-AC-AI**	EA	2	$ -	$ -
3.1.2.3.10	NXA-FAN-30CFM-F	Nexus 2K/3K/9K Single Fan, port side exhaust airflow, or Equal	**Juniper QFX5110-FANAFI**	EA	4	$ -	$ -
3.1.2.3.11	NXOS-9.2.3	Nexus 9500, 9300, 3000 Base NX-OS Software Rel 9.2.3, or Equal		EA	2	$ -	$ -
3.1.2.3.12	N3K-C3064-ACC-KIT	Nexus 3K/9K Fixed Accessory Kit, or Equal	**Juniper EX-4PST-RMK**	EA	1	$ 125.00	$ 125.00
3.1.2.3.13	CAB-9K12A-NA	Power Cord, 125VAC 13A NEMA 5-15 Plug, North America, or Equal	**Juniper CBL-EX-PWR-C13-US**	EA	2	$ -	$ -
3.1.2.3.14	NXOS-9.2.3	Nexus 9500, 9300, 3000 Base NX-OS Software Rel 9.2.3, or Equal		EA	1	$ -	$ -

3.1.2.3.15	N3K-C3064-ACC-KIT	Nexus 3K/9K Fixed Accessory Kit, or Equal	Juniper EX-4PST-RMK	EA	1	$ 125.00	$ 125.00
3.1.2.3.16	CAB-9K12A-NA	Power Cord, 125VAC 13A NEMA 5-15 Plug, North America, or Equal	Juniper CBL-EX-PWR-C13-US	EA	2	$ -	$ -
3.1.3	N9K-C93108-EX-B24C	Contract Item #3 - Cisco 2xNexus Top of Rack 10GBase-T Switch, Cisco 93108TC-EX, (2xNexus 93108TC-EX w/ 8x 100G Optics), or Equal	Juniper QFX5120-48T-AFI Bundle SKU	EA	5		$ -
3.1.3.4.1	N9K-C93108TC-EX-B	Nexus 93108TC-EX bundle PID, or Equal	Juniper QFX5120-48T-AFI	EA	5	$ 7,137.36	$ 35,686.80
3.1.3.4.2	NXK-PICK-BIDI	PID to select QSFP-100G-SR-BD Optic in the bundle, or Equal		EA	5	$ -	$ -
3.1.3.4.3	QSFP-40/100-SRBD	100G and 40GBASE SR-BiDi QSFP Transceiver, LC, 100m OM4 MMF, or Equal	Juniper JNP-QSFP-100G-BXSR	EA	20	$ 684.13	$ 13,682.60
3.1.3.4.4	CAB-9K12A-NA	Power Cord, 125VAC 13A NEMA 5-15 Plug, North America, or Equal	Juniper CBL-EX-PWR-C13-US	EA	10	$ -	$ -
3.1.3.4.5	NXA-PAC-650W-PE	Nexus NEBs AC 650W PSU - Port Side Exhaust, or Equal	Juniper JPSU-650W-AFI	EA	10	$ -	$ -
3.1.3.4.6	CAB-9K12A-NA	Power Cord, 125VAC 13A NEMA 5-15 Plug, North America, or Equal	Juniper CBL-EX-PWR-C13-US	EA	10	$ -	$ -
3.1.3.4.7	NXOS-9.2.3	Nexus 9500, 9300, 3000 Base NX-OS Software Rel 9.2.3, or Equal		EA	10	$ -	$ -
3.1.3.4.8	N3K-C3064-ACC-KIT	Nexus 3K/9K Fixed Accessory Kit, or Equal	Juniper EX-4PST-RMK	EA	10	$ 125.00	$ 1,250.00
3.1.3.4.9	NXA-FAN-30CFM-F	Nexus 2K/3K/9K Single Fan, port side exhaust airflow, or Equal	Juniper QFX5110-FANAFI	EA	20	$ -	$ -
3.1.3.4.10	NXA-FAN-30CFM-F	Nexus 2K/3K/9K Single Fan, port side exhaust airflow, or Equal	Juniper QFX5110-FANAFI	EA	20	$ -	$ -
3.1.4	QSFP-40/100-SRBD=	Contract Item #4 - Cisco QSFP Transceiver Module 40 Gigabit LAN, (100G and 40GBASE SR-BiDi QSFP Transceiver, LC, 100m OM4 MMF), or Equal	Juniper JNP-QSFP-100G-BXSR	EA	16	$ 684.13	$ 10,946.08
3.1.5	SFP-10G-SR=	Contract Item #5 - Cisco SFP Transceiver Module - 10 Gigabit LAN, or equal	Juniper SFPP-10G-SR-C	EA	48	$ 28.56	$ 1,370.88
		Overall Total for Equipment				$	124,280.24
		Hardware Support					
3.1.6.1	Cisco Smartnet Total Care Service	Contract Item #6 - Cisco Smartnet Total Care Service 8x5xNBD or Equal		EA	1	$ -	$ -
3.1.7	CON-SNT-N9336FB	Contract Item #6 - Cisco Smartnet Total Care Service 8x5xNBD or Equal	Juniper SVC-ND-QFX51-32C	EA	1	$ 892.98	$ 892.98
3.1.8	CON-SNT-N9336FB	Contract Item #6 - Cisco Smartnet Total Care Service 8x5xNBD or Equal	Juniper SVC-ND-QFX51-32C	EA	1	$ 892.98	$ 892.98
3.1.9	CON-SNT-93180YBN	Contract Item #6 - Cisco Smartnet Total Care Service 8x5xNBD or Equal	Juniper SVC-ND-QFX51-48Y	EA	1	$ 975.26	$ 975.26
3.1.10	CON-SNT-93180B24	Contract Item #6 - Cisco Smartnet Total Care Service 8x5xNBD or Equal	Juniper SVC-ND-QFX51-48Y	EA	1	$ 975.26	$ 975.26
3.1.11	CON-SNT-93108TBN	Contract Item #6 - Cisco Smartnet Total Care Service 8x5xNBD or Equal	Juniper SVC-ND-QFX51-48T	EA	1	$ 831.63	$ 831.63
3.1.12	CON-SNT-93108B24	Contract Item #6 - Cisco Smartnet Total Care Service 8x5xNBD or Equal	Juniper SVC-ND-QFX51-48T	EA	1	$ 831.63	$ 831.63
		Overall Total for Hardware Support				$	5,399.74
		Professional Services					
3.1.13		Contract Item #13 - Training Services - Learning Credits (TRN-CLC-004) or Equal.	Juniper EDU-JTC-100-AMER	EA	160	$ 95.00	$ 15,200.00
		Overall Total for Professional Services				$	15,200.00
					Overall Total Cost	$	144,879.98

Any product or service not on the Agency provided Cost Sheet will not be allowable. The state cannot accept alternate pricing pages, failure to use Exhibit A Cost Sheet could lead to disqualification of vendors bid.

ALBERT KRAKUS	3/22/2021
Vendor Signature:	Date: