



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

**State of West Virginia
 Request for Quotation**

Proc Folder: 41557

Doc Description: NETWORK SWITCHES & ACCESS., W/5 YR EXTENDED SERVICE AGREEMEN

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2015-02-13	2015-03-12 13:30:00	CRFQ 0506 MMB1500000002	1

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

Vendor Name, Address and Telephone Number:

03/16/15 09:40:54
 WV Purchasing Division

FOR INFORMATION CONTACT THE BUYER

Gregory Clay
 (304) 558-2566
 gregory.c.clay@wv.gov

Signature X

FEIN #

DATE

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

INVOICE TO		SHIP TO	
PROCUREMENT OFFICER - 304-525-7801 HEALTH AND HUMAN RESOURCES MILDRED MITCHELL - BATEMAN HOSPITAL PO BOX 448 HUNTINGTON WV25709 US		WV OFFICE OF TECHNOLOGY BLDG 5, 10TH FLOOR 1900 KANAWHA BLVD E CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	NETWORK SWITCH	9.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222612	CISCO		

Extended Description :

SECTION 4.2

CATALYST 2960S 48 GIG POE 740W, 4 X SFP LAN BASE SWITCH OR EQUAL

MUST INCLUDE FIVE (5) YEAR EXTENDED SERVICE AGREEMENT.

INVOICE TO		SHIP TO	
PROCUREMENT OFFICER - 304-525-7801 HEALTH AND HUMAN RESOURCES MILDRED MITCHELL - BATEMAN HOSPITAL PO BOX 448 HUNTINGTON WV25709 US		WV OFFICE OF TECHNOLOGY BLDG 5, 10TH FLOOR 1900 KANAWHA BLVD E CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	NETWORK SWITCH	2.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222612	CISCO		

Extended Description :

SECTION 4.3

CATALYST 2960S 24 GIG POE 370 W, 2 x SFP LAN BASE SWITCH OR EQUAL.

MUST INCLUDE FIVE (5) EXTENDED SERVICE AGREEMENT.

PROCUREMENT OFFICER - 304-525-7801 HEALTH AND HUMAN RESOURCES MILDRED MITCHELL - BATEMAN HOSPITAL BOX 448 HUNTINGTON WV25709 US		WV OFFICE OF TECHNOLOGY BLDG 5, 10TH FLOOR 1900 KANAWHA BLVD E CHARLESTON WV 25304 US	
--	--	---	--

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	STACK MODULE	7.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222600	CISCO		

Extended Description :

SECTION 4.4

CISCO CATALYST 2960S FLEX STACK MODULE OR EQUAL

PROCUREMENT OFFICER - 304-525-7801 HEALTH AND HUMAN RESOURCES MILDRED MITCHELL - BATEMAN HOSPITAL PO BOX 448 HUNTINGTON WV25709 US		WV OFFICE OF TECHNOLOGY BLDG 5, 10TH FLOOR 1900 KANAWHA BLVD E CHARLESTON WV 25304 US	
---	--	---	--

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	STACKING CABLE	5.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222600	CISCO		

Extended Description :

SECTIO 4.5

CISCO FLEXSTACK 50CM STACKING CABLE OR EQUAL

PROCUREMENT OFFICER - 304-525-7801 HEALTH AND HUMAN RESOURCES MILDRED MITCHELL - BATEMAN HOSPITAL PO BOX 448 HUNTINGTON WV25709 US		WV OFFICE OF TECHNOLOGY BLDG 5, 10TH FLOOR 1900 KANAWHA BLVD E CHARLESTON WV 25304 US	
---	--	---	--

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
5	STACKING CABLE	2.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222600	CISCO		

Extended Description :

SECTION 4.6

CISCO FLEXSTACK 1M STACKING CABLE OR EQUAL

INVOICE TO		SHIP TO	
PROCUREMENT OFFICER - 304-525-7801 HEALTH AND HUMAN RESOURCES MILDRED MITCHELL - BATEMAN HOSPITAL PO BOX 448 HUNTINGTON WV25709 US		WV OFFICE OF TECHNOLOGY BLDG 5, 10TH FLOOR 1900 KANAWHA BLVD E CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
6	TRANSCEIVER	14.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222600	CISCO		

Extended Description :

SECTION 4.7

CISCO GE SFP, LC CONNECTOR SX TRANSCEIVER OR EQUAL

INVOICE TO		SHIP TO	
PROCUREMENT OFFICER - 304-525-7801 HEALTH AND HUMAN RESOURCES MILDRED MITCHELL - BATEMAN HOSPITAL PO BOX 448 HUNTINGTON WV25709 US		WV OFFICE OF TECHNOLOGY BLDG 5, 10TH FLOOR 1900 KANAWHA BLVD E CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
7	AC POWER CORD	11.00000	EA		

Comm Code	Manufacturer	Specification	Model #
26121636	CISCO		

Extended Description :

SECTION 4.8

AC POWER CORD, 16 AWG OR EQUAL

PROCUREMENT OFFICER - 304-525-7801 HEALTH AND HUMAN RESOURCES MILDRED MITCHELL - BATEMAN HOSPITAL BOX 448 HUNTINGTON WV25709 US	WV OFFICE OF TECHNOLOGY BLDG 5, 10TH FLOOR 1900 KANAWHA BLVD E CHARLESTON WV 25304 US
--	---

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
8	INSERT PACKOUT	11.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222600			

Extended Description :

SECTION 4.9.1
 SECTION 4.9.2

INSERT PACKOUT

MMB150000002	Document Phase Final	Document Description NETWORK SWITCHES & ACCESS. , W/5 YR EXTENDED SERVICE AGREEMEN	Page 6 of 6
---------------------	--------------------------------	---	------------------------------

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

**State of West Virginia
 Request for Quotation**

Proc Folder: 41557

Doc Description: ADDENDUM NO. 1 NETWORK SWITCHES & ACCESS., W/5 YR EXTENDED

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2015-03-10	2015-03-19 13:30:00	CRFQ 0506 MMB1500000002	2

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

Vendor Name, Address and Telephone Number:

FOR INFORMATION CONTACT THE BUYER
 Gregory Clay
 (304) 558-2566
 gregory.c.clay@wv.gov

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

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

INVOICE TO		SHIP TO	
PROCUREMENT OFFICER - 304-525-7801 HEALTH AND HUMAN RESOURCES MILDRED MITCHELL - BATEMAN HOSPITAL PO BOX 448 HUNTINGTON WV25709 US		WV OFFICE OF TECHNOLOGY BLDG 5, 10TH FLOOR 1900 KANAWHA BLVD E CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	NETWORK SWITCH	9.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222612	CISCO		

Extended Description :
 SECTION 4.2
 CATALYST 2960S 48 GIG POE 740W, 4 X SFP LAN BASE SWITCH OR EQUAL
 MUST INCLUDE FIVE (5) YEAR EXTENDED SERVICE AGREEMENT.

INVOICE TO		SHIP TO	
PROCUREMENT OFFICER - 304-525-7801 HEALTH AND HUMAN RESOURCES MILDRED MITCHELL - BATEMAN HOSPITAL PO BOX 448 HUNTINGTON WV25709 US		WV OFFICE OF TECHNOLOGY BLDG 5, 10TH FLOOR 1900 KANAWHA BLVD E CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	NETWORK SWITCH	2.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222612	CISCO		

Extended Description :
 SECTION 4.3
 CATALYST 2960S 24 GIG POE 370 W, 2 x SFP LAN BASE SWITCH OR EQUAL.
 MUST INCLUDE FIVE (5) EXTENDED SERVICE AGREEMENT.

PROCUREMENT OFFICER - 304-525-7801 HEALTH AND HUMAN RESOURCES MILDRED MITCHELL - BATEMAN HOSPITAL BOX 448 HUNTINGTON WV25709 US		WV OFFICE OF TECHNOLOGY BLDG 5, 10TH FLOOR 1900 KANAWHA BLVD E CHARLESTON WV 25304 US	
--	--	---	--

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	STACK MODULE	7.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222600	CISCO		

Extended Description :

SECTION 4.4

CISCO CATALYST 2960S FLEX STACK MODULE OR EQUAL

PROCUREMENT OFFICER - 304-525-7801 HEALTH AND HUMAN RESOURCES MILDRED MITCHELL - BATEMAN HOSPITAL PO BOX 448 HUNTINGTON WV25709 US		WV OFFICE OF TECHNOLOGY BLDG 5, 10TH FLOOR 1900 KANAWHA BLVD E CHARLESTON WV 25304 US	
---	--	---	--

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	STACKING CABLE	5.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222600	CISCO		

Extended Description :

SECTIO 4.5

CISCO FLEXSTACK 50CM STACKING CABLE OR EQUAL

PROCUREMENT OFFICER - 304-525-7801 HEALTH AND HUMAN RESOURCES MILDRED MITCHELL - BATEMAN HOSPITAL PO BOX 448 HUNTINGTON WV25709 US		WV OFFICE OF TECHNOLOGY BLDG 5, 10TH FLOOR 1900 KANAWHA BLVD E CHARLESTON WV 25304 US	
---	--	---	--

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
5	STACKING CABLE	2.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222600	CISCO		

Extended Description :

SECTION 4.6

CISCO FLEXSTACK 1M STACKING CABLE OR EQUAL

INVOICE TO		SHIP TO	
PROCUREMENT OFFICER - 304-525-7801 HEALTH AND HUMAN RESOURCES MILDRED MITCHELL - BATEMAN HOSPITAL PO BOX 448 HUNTINGTON WV25709 US		WV OFFICE OF TECHNOLOGY BLDG 5, 10TH FLOOR 1900 KANAWHA BLVD E CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
6	TRANSCEIVER	14.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222600	CISCO		

Extended Description :

SECTION 4.7

CISCO GE SFP, LC CONNECTOR SX TRANSCEIVER OR EQUAL

INVOICE TO		SHIP TO	
PROCUREMENT OFFICER - 304-525-7801 HEALTH AND HUMAN RESOURCES MILDRED MITCHELL - BATEMAN HOSPITAL PO BOX 448 HUNTINGTON WV25709 US		WV OFFICE OF TECHNOLOGY BLDG 5, 10TH FLOOR 1900 KANAWHA BLVD E CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
7	AC POWER CORD	11.00000	EA		

Comm Code	Manufacturer	Specification	Model #
26121636	CISCO		

Extended Description :

SECTION 4.8

AC POWER CORD, 16 AWG OR EQUAL

PROCUREMENT OFFICER - 304-525-7801 HEALTH AND HUMAN RESOURCES MILDRED MITCHELL - BATEMAN HOSPITAL BOX 448 HUNTINGTON WV25709 US	WV OFFICE OF TECHNOLOGY BLDG 5, 10TH FLOOR 1900 KANAWHA BLVD E CHARLESTON WV 25304 US
--	---

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
8	INSERT PACKOUT	11.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222600			

Extended Description :
 SECTION 4.9.1
 SECTION 4.9.2
 INSERT PACKOUT

MMB150000002	Document Phase Final	Document Description ADDENDUM NO. 1 NETWORK SWITCHES & ACCESS., W/5 YR EXTENDED	Page 6 of 6
---------------------	--------------------------------	--	-----------------------

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

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

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 person attending the pre-bid meeting may represent more than one Vendor.

An attendance sheet provided at the pre-bid meeting shall serve as the official document verifying attendance. The State will not accept any other form of proof or documentation to verify 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 non-binding. Submitted e-mails should have solicitation number in the subject line.

Question Submission Deadline: **MARCH 3, 2015 AT 5:00 PM**

Submit Questions to: **GREG CLAY**

2019 Washington Street, East

Charleston, WV 25305

Fax: (304) 558-4115 (Vendors should not use this fax number for bid submission)

Email: Gregory.C.Clay@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: NETWORK SWITCH & 5 YEAR EXTENDED WARRANTY
BUYER: GREG CLAY
SOLICITATION NO.: CRFQ 0506 MMB1500000002
BID OPENING DATE: MARCH 12, 2015
BID OPENING TIME: 1:30 PM
FAX NUMBER: 304-558-3970

In the event that Vendor is responding to a request for proposal, and chooses to respond in a manner other than by electronic submission through wvOASIS, the Vendor shall submit one original technical and one original cost proposal plus *n/a* convenience copies of each to the Purchasing Division at the address shown above. Additionally, if Vendor does not submit its bid through wvOASIS, 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 12, 2015 AT 1:30 PM
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. **ALTERNATES:** 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.
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 only be granted upon written request and only in accordance with the West Virginia Code § 5A-3-37 and the West Virginia Code of State Rules. A Vendor Preference Certificate form has been attached hereto to allow Vendor to apply for the preference. Vendor's failure to submit the Vendor Preference Certificate form with its bid will result in denial of Vendor Preference. Vendor Preference does not apply to construction projects.
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.

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. **"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.
 - 2.3. **"Director"** means the Director of the West Virginia Department of Administration, Purchasing Division.
 - 2.4. **"Purchasing Division"** means the West Virginia Department of Administration, Purchasing Division.
 - 2.5. **"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.
 - 2.6. **"Solicitation"** means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.
 - 2.7. **"State"** means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.
 - 2.8. **"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 extends for a period of _____ year(s).

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 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. 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 _____ months in total. Automatic renewal of this Contract is prohibited. Notwithstanding the foregoing, Purchasing Division approval is not required on agency delegated or exempt purchases. Attorney General approval may be required for vendor terms and conditions.

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, the vendor agrees that maintenance, monitoring, or warranty services will be provided for one year thereafter with an additional _____ successive one year renewal periods or multiple renewal periods of less than one year provided that the multiple renewal periods do not exceed _____ months in total. Automatic renewal of this Contract is prohibited.

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.

4. **NOTICE TO PROCEED:** Vendor shall begin performance of this Contract immediately upon receiving notice to proceed unless otherwise instructed by the Agency. Unless otherwise specified, the fully executed Award Document will be considered notice to proceed.
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. **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.
7. **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 a 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.
8. **REQUIRED DOCUMENTS:** All of the items checked below must be provided to the Purchasing Division by the Vendor as specified below.

BID BOND: All Vendors shall furnish a 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 _____. The performance bond must be received by the Purchasing Division prior to Contract award. On construction contracts, the performance bond must be 100% of the Contract value.

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.

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.

INSURANCE: The apparent successful Vendor shall furnish proof of the following insurance prior to Contract award and shall list the state as a certificate holder:

Commercial General Liability Insurance: In the amount of 100,000.00 _____ or more.

Builders Risk Insurance: In an amount equal to 100% of the amount of the Contract.

Workers Compensation Insurance In the amount of 100,000.00 or more.

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 above.

LICENSE(S) / CERTIFICATIONS / PERMITS: In addition to anything required under the Section entitled Licensing, of the General Terms and Conditions, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits prior to Contract award, in a form acceptable to the Purchasing Division.

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

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. LITIGATION BOND: The Director reserves the right to require any Vendor that files a protest of an award to submit a litigation bond in the amount equal to one percent of the lowest bid submitted or \$5,000, whichever is greater. The entire amount of the bond shall be forfeited if the hearing officer determines that the protest was filed for frivolous or improper purpose, including but not limited to, the purpose of harassing, causing unnecessary delay, or needless expense for the Agency. All litigation bonds shall be made payable to the Purchasing Division. In lieu of a bond, the protester may submit a cashier's check or certified check payable to the Purchasing Division. Cashier's or certified checks will be deposited with and held by the State Treasurer's office. If it is determined that the protest has not been filed for frivolous or improper purpose, the bond or deposit shall be returned in its entirety.

11. LIQUIDATED DAMAGES: Vendor shall pay liquidated damages in the amount of

_____ for _____

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.

- 12. ACCEPTANCE/REJECTION:** The State may accept or reject any bid in whole, or in part. Vendor's signature on its bid signifies acceptance of the terms and conditions contained in the Solicitation and Vendor agrees to be bound by the terms of the Contract, as reflected in the Award Document, upon receipt.
- 13. 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.
- 14. PAYMENT:** 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. 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.
- 16. 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 § 148-1-7.16.2.
- 17. TIME:** Time is of the essence with regard to all matters of time and performance in this Contract.
- 18. 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.
- 19. COMPLIANCE:** 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 law.
- 20. PREVAILING WAGE:** On any contract for the construction of a public improvement, Vendor and any subcontractors utilized by Vendor shall pay a rate or rates of wages which shall not be less than the fair minimum rate or rates of wages (prevailing wage), as established by the West Virginia Division of Labor under West Virginia Code §§ 21-5A-1 et seq. and available at <http://www.sos.wv.gov/administrative-law/wagerates/Pages/default.aspx>. Vendor shall be responsible for ensuring compliance with

prevailing wage requirements and determining when prevailing wage requirements are applicable. The required contract provisions contained in West Virginia Code of State Rules § 42-7-3 are specifically incorporated herein by reference.

21. **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.
22. **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). No Change shall be implemented by the Vendor until such time as the Vendor receives an approved written change order from the Purchasing Division.
23. **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.
24. **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.
25. **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. Notwithstanding the foregoing, Purchasing Division approval may or may not be required on certain agency delegated or exempt purchases.
26. **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.
27. **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.
28. **BANKRUPTCY:** In the event the Vendor files for bankruptcy protection, the State of West Virginia may deem this Contract null and void, and terminate this Contract without notice.

29. 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>.

30. DISCLOSURE: Vendor's response to the Solicitation and the resulting Contract are considered public documents and will be disclosed to the public in accordance with the laws, rules, and policies governing the West Virginia Purchasing Division. Those laws include, but are not limited to, the Freedom of Information Act found in West Virginia Code §§ 29B-1-1 et seq. and the competitive bidding laws found West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq.

If a Vendor considers any part of its bid to be exempt from public disclosure, Vendor must so indicate by specifically identifying the exempt information, identifying the exemption that applies, providing a detailed justification for the exemption, segregating the exempt information from the general bid information, and submitting the exempt information as part of its bid but in a segregated and clearly identifiable format. Failure to comply with the foregoing requirements will result in public disclosure of the Vendor's bid without further notice. A Vendor's act of marking all or nearly all of its bid as exempt is not sufficient to avoid disclosure and WILL NOT BE HONORED. Vendor's act of marking a bid or any part thereof as "confidential" or "proprietary" is not sufficient to avoid disclosure and WILL NOT BE HONORED. A legend or other statement indicating that all or substantially all of the bid is exempt from disclosure is not sufficient to avoid disclosure and WILL NOT BE HONORED. Additionally, pricing or cost information will not be considered exempt from disclosure and requests to withhold publication of pricing or cost information WILL NOT BE HONORED.

Vendor will be required to defend any claimed exemption for nondisclosure in the event of an administrative or judicial challenge to the State's nondisclosure. Vendor must indemnify the State for any costs incurred related to any exemptions claimed by Vendor. Any questions regarding the applicability of the various public records laws should be addressed to your own legal counsel prior to bid submission.

31. LICENSING: In accordance with West Virginia Code of State Rules §148-1-6.1.7, 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. 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.

32. 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.

33. 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.

34. PURCHASING CARD ACCEPTANCE: The State of West Virginia currently utilizes a Purchasing Card program, administered under contract by a banking institution, to process payment for goods and services. The Vendor must accept the State of West Virginia's Purchasing Card for payment of all orders under this Contract unless the box below is checked.

Vendor is not required to accept the State of West Virginia's Purchasing Card as payment for all goods and services.

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, all Vendors are required to sign, notarize, and submit the Purchasing Affidavit stating that neither the Vendor nor a related party owe a debt to the State in excess of \$1,000. The affidavit must be submitted prior to award, but should be submitted with the Vendor's bid. A copy of the Purchasing Affidavit is included herewith.
- 38. ADDITIONAL AGENCY AND LOCAL GOVERNMENT USE:** This Contract may be utilized by and extends to 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"). This Contract shall be extended to the aforementioned Other Government Entities on the same prices, terms, and conditions as those offered and agreed to in this Contract. If the Vendor does not wish to extend the prices, terms, and conditions of its bid and subsequent contract to the Other Government Entities, the Vendor must clearly indicate such refusal in its bid. 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.requisitions@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.

CERTIFICATION AND SIGNATURE PAGE

By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained 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.

DIVERSATEC RESOURCES, INC

(Company)

Ralph DiFranco, Sr. Account Manager

(Authorized Signature) (Representative Name, Title)

614-818-9741 740-965-3403 3-5-15

(Phone Number) (Fax Number) (Date)

REQUEST FOR QUOTATION
CRFQ 0506 MMB1500000002 - NETWORK SWITCHES

SPECIFICATIONS FOR NETWORK SWITCHES

1. **PURPOSE AND SCOPE:** The West Virginia Purchasing Division is soliciting bids on behalf of Mildred Mitchell-Bateman Hospital located at 1530 Norway Avenue, Huntington WV 25705 to establish a contract for the one time purchase Network Switches to replace existing network equipment and Extended Service Agreement.

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 **“Contract Service”** means extended service agreement as more fully described in these specifications.

 - 2.2 **“Contract Items”** means Catalyst 2960S 48 GigE PoE 740W, 4 x SFP LAN Base Switch; Catalyst 2960S 24 GigE PoE 370W, 2 x SFP LAN Base Switch; Cisco Catalyst 2960S Flex Stack Module; Cisco Flexstack 50CM Stacking Cable; Cisco FlexStack 1 m Stacking Cable; GE SFP, LC connector SX Transceiver; AC Power Cord, 16AWG, CON-SNT-2960S4FS, CON-SNT-2960s2PS and associated hardware or equal.

 - 2.3 **“Solicitation”** means the official notice of an opportunity to supply the State with goods and services that is published by the Purchasing Division identified as CRFQ 0506 **MMB1500000002**.

3. **QUALIFICATIONS:** Vendor, or Vendor’s staff if requirements are inherently limited to individuals rather than corporate entities, shall have the following minimum qualifications:
 - 3.1 Must have a Valid Current West Virginia Business License

4. **GENERAL REQUIREMENTS:** - *Acknowledged and meet all specifications -*
 - 4.1 **Mandatory Contract Service Requirements:** Contract Items and Services must meet or exceed the mandatory requirements listed below.

 - 4.2 Must be Catalyst 2960S 48 GigE PoE 740W, 4 x SFP LAN Base Switch, Part Number WS-C2960S-48FPS-L or equal.

 - 4.3 Must be Catalyst 2960S 24GigE PoE 370W, 2 x SFP LAN Base Switch, Part Number WS-C2960S-24PS-L or equal.

 - 4.4 Must be Cisco Catalyst 2960S FlexStack Stack Module,

REQUEST FOR QUOTATION
CRFQ 0506 MMB150000002 - NETWORK SWITCHES

Part Number C2960S-STACK or equal.

4.5 Must be Cisco FlexStack 50cm Stacking Cable,
Part Number CAB-STK-E-0.5M or equal.

4.5.1 This cable must connect adjacent switches in a stack.

4.6 Must be Cisco FlexStack 1m Stacking Cable,
Part Number Cab-STK-E-1M or equal.

4.6.1 This cable must connect the top and bottom switch in a stack of three (3) switches.

4.7 Must be Cisco GE SFP, LC connector SX Transceiver,
Part Number GLC-SX-MM or equal.

4.8 Must be powered by electricity by AC Power Cord, 16AWG,
Part Number CAB-16AWG-AC or equal.

4.9 Must provide Insert Packout – PI-MSE for the each of the following:

4.9.1 (9) each Catalyst 2960S 48 GigE PoE 740W 4 x SFP LAN Base Switch or equal.

4.9.2 (2) each Catalyst 2960S 24 GigE PoE 370W 2 x SFP LAN Base Switch or equal.

4.10 Vendor must provide an extended service agreement to include the following requirements for a total of five (5) years.

The extended service agreement must be Cisco Smartnet for each switch listed in 4.2.
Part number CON-SNTP-2960S4FS or equal.

The service must include telephone technical support eight (8) hours a day, 8:00am to 4:00pm eastern time zone/five (5) days a week, next day hardware replacement, and software updates.

4.11 Vendor must provide an extended service agreement to include the following requirements for year one (1) and renewals for four (4) additional years for a total of five (5) years.

The extended service agreement must be Cisco Smartnet for each switch listed in Section 4.3.
Part number CON-SNTP-2960S2PS or equal.

REQUEST FOR QUOTATION
CRFQ 0506 MMB150000002 - NETWORK SWITCHES

The service must include telephone technical support eight (8) hours a day, 8:00am to 4:00pm eastern time zone/five (5) days a week, next day hardware replacement, and software updates.

5. CONTRACT AWARD:

5.1 Contract Award: The Contract is intended to provide Agencies with a purchase price for the Contract Items and Service(s). The Contract shall be awarded to the Vendor that provides the Contract Items and Service(s) meeting the required specifications for the lowest overall total cost as shown on the Pricing Page. The renewals included in this purchase are only applicable to the additional years of the "Extended Service Agreements" named within the document and do not include the purchase or renewal of any other items.

5.2 Pricing Page: Vendor should complete the Pricing Page by filling in the price per requested unit, the extended price for the total number of units requested and grand total for all goods and services requested. Vendor should completed the Pricing Page in full as failure to complete the Pricing Page in its entirety may result in Vendor's bid be disqualified.

Vendor may also submit bids using the VSS/WV Oasis website and insert pricing on the commodity lines.

You can go to: <https://prod-fin-vss.wvoasis.gov/webapp/prdvss11/AltSelfService> to submit online bids.

6. PERFORMANCE: Vendor and Agency shall agree upon a schedule for performance of Contract Services and Items and Contract Services Deliverables, unless such a schedule is already included herein by Agency. In the event that this Contract is designated as an open-end contract, Vendor shall perform in accordance with the release orders that may be issued against this Contract.

7. PAYMENT: Agency shall pay a flat fee, as shown on the Pricing Pages, for all Contract Items and Services performed and accepted under this contract. Vendor shall accept payment in accordance with the payment procedures of the State of West Virginia.

8. TRAVEL: Vendor shall be responsible for all mileage and travel costs, including travel time, associated with performance of this Contract. Any anticipated mileage or travel cost may be included in the flat fee or hourly rate listed on Vendor's bid, but such costs will not be paid by the Agency.

9. DELIVERY AND RETURN:

9.1 Shipment and Delivery: Vendor shall ship the Contract Items Immediately after being awarded this Contract and receiving a purchase order or a notice to proceed. Vendor shall

REQUEST FOR QUOTATION
CRFQ 0506 MMB150000002 - NETWORK SWITCHES

deliver the Contract Items within thirty (30) days after receiving a purchase order or notice to proceed. Contract Items must be delivered to Agency at: West Virginia Office of Technology, 1900 Kanawha Boulevard East, Building 5, A-916, Charleston WV 25305.

- 9.2 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 the cancellation of the Contract, and/or obtaining the Contract Items from a third party.

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

- 9.3 Delivery Payment/Risk of Loss:** Vendor shall deliver the Contract Items F.O.B. destination to the Agency's location.
- 9.4 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 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.
- 9.5 Return Due to Agency Error:** Items ordered in error by the Agency will be returned for credit within thirty (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 resalable condition if they are unused and in original packaging. Any restock charge 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.

REQUEST FOR QUOTATION
CRFQ 0506 MMB150000002 - NETWORK SWITCHES

10. FACILITIES ACCESS: Performance of Contract Services may require access cards and/or keys to gain entrance to Agency's facilities. In the event that access card and/or keys are required:

- 10.1** Vendor must identify principle service personnel which will be issued access cards and/or keys to perform service.
- 10.2** Vendor will be responsible for controlling cards and/or keys and will pay replacement fee, if the cards and/or keys become lost or stolen.
- 10.3** Vendor shall notify Agency immediately of any lost, stolen or missing cards and/keys.
- 10.4** Anyone performing under this Contract will be subject to the Agency's security protocol and procedures.
- 10.5** Vendor shall inform all staff of Agency's security protocol and procedures.

11. VENDOR DEFAULT:

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

11.1.1 Failure to perform Contract Services in accordance with the requirements contained herein.

11.1.2 Failure to comply with other specifications and requirements contained herein.

11.1.3 Failure to comply with any laws, rules, and ordinances applicable to the Contract Services Provided under this Contract.

11.1.4 Failure to remedy deficient performance upon request.

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

11.2.1 Immediate cancellation of the Contract

11.2.2 Immediate cancellation of one or more release orders issued under this Contract.

11.2.3 Any other remedies available in law or equity.

REQUEST FOR QUOTATION
CRFQ 0506 MMB150000002 - NETWORK SWITCHES

12. MISCELLANEOUS:

- 12.1 **Point of Contact:** During the performance of this Contract, Vendor must designate and maintain a primary point of contact responsible for overseeing Vendor's responsibilities under this Contract. The Point of Contact must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor shall list its Point Of Contact and his or her contact information below.

Point of Contact: Ralph DiFranco DIANE Milholland

Telephone Number: Office: 614-818-9741 N/A-USE CELL 937-536-2980

Cell: 614-787-6948 937-536-2980

Fax Number: 740-965-3403 DIVERSTEC RESOURCES MAIN OFFICE

Email Address: rdf franco@ALLINTECH.COM dmilholland@ALLINTECH.COM

- 12.2 **Explanation of Award:** Agency will Evaluate the bids received based on the Grand Total Bid Price. A Contract will be awarded to the apparent successful Vendor that provides the Contract Items that meets or exceeds the required specifications contained herein, for the lowest overall Grand Total Bid Price.

Payment to the Vendor will be made in arrears after delivery and 100% of acceptance of Contract Items by the Agency.

Please Complete:

Vendor Business Name: DIVERSTEC RESOURCES, INC.

Vendor Address: 10022 CHESHIRE ROAD

SANBURY, OHIO 43074

Remit to Address: 10022 CHESHIRE ROAD

SANBURY, OHIO 43074

Vendor Telephone Number: 740-965-3400

REQUEST FOR QUOTATION
CRFQ 0506 MMB1500000002 - NETWORK SWITCHES

Vendor Fax Number: 740-965-3403

Vendor Email: dan.frost@diversatec.net

Vendor Authorized Representative: Ralph DiFranco

Vendor Authorized Representative Signature: ^(Please Print) Ralph DiFranco

Date: 3-9-15

SOLICITATION NUMBER: MMB150000002

Addendum Number: 1

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

- Modify bid opening date and time
- Modify specifications of product or service being sought
- Attachment of vendor questions and responses
- Attachment of pre-bid sign-in sheet
- Correction of error
- Other

Description of Modification to Solicitation:

ADDENDUM NO. 1

- 1) TO CHANGE THE BID OPENING DATE FOR THIS CRFQ TO MARCH 19, 2015 AT 1:30 PM EST.
- 2) TO PROVIDE A COPY OF CLARIFICATIONS TO TECHNICAL QUESTIONS SUBMITTED.
- 3) TO PROVIDE ADDENDUM ACKNOWLEDGMENT. THIS DOCUMENT SHOULD BE SIGNED AND RETURNED WITH YOUR BID.

END OF ADDENDUM NO. 1

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.
2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, 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.

ATTACHMENT A

ADDENDUM #1 CRQS MMB150000002

Question #1:

Can we bid on the alternate brands like HP for this solicitation?

Answer #1:

Yes, as long as they alternate brands meet the mandatories listed for each item. You must attach specification sheets with your bid, so that we can compare that they are "equal" to the items solicited.

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: MMB1500000002

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

(Check the box next to each addendum received)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

DIVERSATEC RESOURCES, INC.

Company

Ralph DiFranco

Authorized Signature

3-11-15

Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012



QUOTE #	AAAQ5970-01
DATE	Mar 10, 2015

Diversatec Resources - 10022 Cheshire Rd. - Sunbury, OH. 43074

To
 Mildred Mitchell- Bateman Hospital
 1530 Norway Avenue
 Huntington, WV 25705

Phone

Salesperson	P.O. Number	Payment Terms	Due Date
jstanley			

Qty	Part Number	Description	Unit Price	Total Price
2.00	J9727A	HP 2920-24G-POE+ Switch	\$650.14	\$1,300.28
14.00	J4858C	HP X121 1G SFP LC SX Transceiver	\$61.95	\$867.30
7.00	J9733A	HP 2920 2-port Stacking Module	\$167.45	\$1,172.15
5.00	J9734A	HP 2920 0.5m Stacking Cable	\$44.07	\$220.35
2.00	J9735A	HP 2920 1.0m Stacking Cable	\$55.90	\$111.80
9.00	J9836A	HP 2920-48G-PoE+ 740W Switch	\$1,354.41	\$12,189.69

SUBTOTAL	\$15,861.57
SALES TAX	\$0.00
TOTAL	\$15,861.57

FOB Destination
 Quote is valid for 30 days

NOTE: Must be ordered as a complete configuration to qualify for this pricing. Any change to configuration requires re quoting.

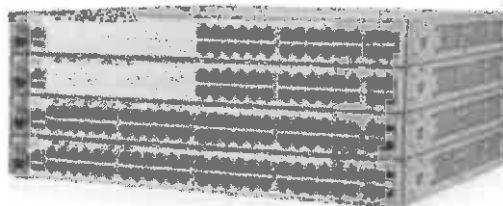
Diversatec Resources - 10022 Cheshire Rd. - Sunbury, OH. 43074

PH: (740)965-3400 FX: (740)965-3403

NBE Certification # - NBE-0946 / Expires 12/18/2016 EDGE Certification # - EDGE-0946 / Expires 12/18/2016



HP 2920 Switch Series



Key features

- High-performance Gigabit Ethernet access switch
- Four optional 10GbE (SFP+ and/or 10GBASE-T) ports
- Stacking capability with a total of four switches
- Layer 2 and Layer 3 plus static and RIP routing, PoE and PoE+ support
- Lifetime Warranty, sFlow, ACLs and rate limiting

Product overview

The HP 2920 Switch Series consists of four switches: the HP 2920-24G and 2920-24G-PoE+ Switches with 24 10/100/1000 ports, and the HP 2920-48G and 2920-48G-PoE+ Switches with 48 10/100/1000 ports. Each switch has four dual-personality ports for 10/100/1000 or SFP connectivity.

In addition, the 2920 switch series supports up to four optional 10 Gigabit Ethernet (SFP+ and/or 10GBASE-T) ports, as well as a two-port stacking module. These options provide you with flexible and easy-to-deploy uplinks and stacking.

Together with static and RIP routing, robust security and management, enterprise-class features, free lifetime warranty and free software updates, the 2920 switch series is a cost-effective, scalable solution for customers who are building high-performance networks. These switches can be deployed at the enterprise edge, in remote branch offices, and in converged networks.

Features and benefits

Quality of Service (QoS)

- **Traffic prioritization (IEEE 802.1p)**
allows real-time traffic classification into eight priority levels mapped to eight queues
- **Layer 4 prioritization**
enables prioritization based on TCP/UDP port numbers
- **Class of Service (CoS)**
sets the IEEE 802.1p priority tag based on IP address, IP Type of Service (ToS), Layer 3 protocol, TCP/UDP port number, source port, and DiffServ
- **Rate limiting**
sets per-port ingress enforced maximums and per-port, per-queue minimums
- **Large buffers**
provide graceful congestion management

Connectivity

- **Flexible 10 Gbps Ethernet connectivity**
up to four optional 10-Gigabit ports (SFP+ and/or 10GBASE-T)
- **Two-port stacking module with up to 40 Gbps/port**
optional two-port stacking module allows stacking of up to four switch units into a single virtual device
- **Auto-MDIX**
automatically adjusts for straight-through or crossover cables on all 10/100 and 10/100/1000 ports
- **Dual-personality functionality**
includes four 10/100/1000 ports or SFP slots for optional fiber connectivity such as Gigabit-SX, -LX, and -LH, or 100-FX
- **IEEE 802.3at Power over Ethernet (PoE+)**
provide up to 30 W per port that allows support of the latest PoE+-capable devices such as IP phones, wireless access points, and security cameras, as well as any IEEE 802.3af-compliant end device; eliminates the cost for additional electrical cabling and circuits that would otherwise be necessary in IP phone and WLAN deployments
- **Pre-standard PoE support**
detects and provides power to pre-standard PoE devices
- **IPv6**
 - **IPv6 host**
allows the switches to be managed and deployed at the edge of IPv6 networks
 - **Dual stack (IPv4/IPv6)**
provides transition mechanism from IPv4 to IPv6; supports connectivity for both protocols
 - **MLD snooping**
forwards IPv6 multicast traffic to the appropriate interface; prevents IPv6 multicast traffic from flooding the network

Performance

- **Energy-efficient design**
 - **High-efficiency power supplies**
80 PLUS Silver Certified power supply increases power savings
 - **Energy-efficient Ethernet (EEE) support**
reduces power consumption in accordance with IEEE 802.3az
- **HP ProVision ASIC architecture**
is designed with the latest HP ProVision ASIC, providing very low latency, increased packet buffering, and adaptive power consumption
- **Selectable queue configurations**
allows for increased performance by selecting the number of queues and associated memory buffering that best meet the requirements of the network applications

Convergence

- **IP multicast snooping and data-driven IGMP**
automatically prevent flooding of IP multicast traffic
- **LLDP-MED (Media Endpoint Discovery)**
is a standard extension of LLDP that stores values for parameters such as QoS and VLAN to automatically configure network devices such as IP phones
- **IEEE 802.1AB Link Layer Discovery Protocol (LLDP)**
is an automated device discovery protocol that provides easy mapping of network management applications
- **PoE and PoE+ allocations**
support multiple methods (automatic, IEEE 802.3at dynamic, LLDP-MED fine grain, IEEE 802.3af device class, or user specified) to allocate and manage PoE/PoE+ power for more efficient energy savings

Resiliency and high availability

- **IEEE 802.1s Multiple Spanning Tree**
provides high link availability in multiple VLAN environments by allowing multiple spanning trees; provides legacy support for IEEE 802.1d and IEEE 802.1w
- **IEEE 802.3ad Link Aggregation Control Protocol (LACP) and HP port trunking**
support up to 60 static, dynamic or distributed trunks active across a stack, with each trunk having up to eight links (ports) per static trunk; trunking across stack members is supported
- **Ring and chain stacking topology**
allows failure of a link or switch in the ring of stacked switches, while the remaining connected switches continue operation

Management

- **SNMPv1, v2, and v3**
provide complete support of SNMP; provide full support of industry-standard Management Information Base (MIB) plus private extensions; SNMPv3 supports increased security using encryption

- **Out-of-band Ethernet management port**
enables management over a separate physical management network, keeping management traffic segmented from network data traffic

Manageability

- **Dual flash images**
provides independent primary and secondary operating system files for backup while upgrading
- **Friendly port names**
allow assignment of descriptive names to ports
- **Find-Fix-Inform**
finds and fixes common network problems automatically, then informs administrator
- **Multiple configuration files**
allow multiple configuration files to be stored to a flash image
- **Software updates**
free downloads from the Web
- **RMON, XRMON, and sFlow**
provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events
- **Troubleshooting**
ingress and egress port monitoring enable network problem solving
- **Uni-Directional Link Detection (UDLD)**
monitors a link between two switches and blocks the ports on both ends of the link if the link goes down at any point between the two devices.

Layer 2 switching

- **VLAN support and tagging**
supports IEEE 802.1Q (4,094 VLAN IDs) and 256 VLANs simultaneously
- **GARP VLAN Registration Protocol**
allows automatic learning and dynamic assignment of VLANs
- **Jumbo packet support**
supports up to 9220-byte frame size to improve the performance of large data transfers
- **IEEE 802.1v protocol VLANs**
isolate select non-IPv4 protocols automatically into their own VLANs

Layer 3 routing

- **Static IP routing**
provides manually configured routing; includes ECMP capability
- **Routing Information Protocol (RIP)**
provides RIPv1 and RIPv2 routing
- **256 static and 2,048 RIP routes**
facilitate segregation of user data without adding external hardware

Security

- **Multiple user authentication methods**
 - **IEEE 802.1X**
is an industry-standard method of user authentication using an IEEE 802.1X supplicant on the client in conjunction with a RADIUS server
 - **Web-based authentication**
is similar to IEEE 802.1X and provides a browser-based environment to authenticate clients that do not support the IEEE 802.1X supplicant
 - **MAC-based authentication**
authenticates the client with the RADIUS server based on the client's MAC address
- **Authentication flexibility**
 - **Multiple IEEE 802.1X users per port**
provides authentication of multiple IEEE 802.1X users per port; prevents user "piggybacking" on another user's IEEE 802.1X authentication
 - **Concurrent IEEE 802.1X, Web, and MAC authentication schemes per port**
switch port will accept up to 32 sessions of IEEE 802.1X, Web, and MAC authentications
- **Access control lists (ACLs)**
provide IP Layer 3 filtering based on source/destination IP address/subnet and source/destination TCP/UDP port number
- **Source-port filtering**
allows only specified ports to communicate with each other
- **RADIUS/TACACS+**
eases switch management security administration by using a password authentication server
- **IEEE 802.1X, MAC or Web authentication**
provides concurrent network access control and Web authentication of up to 24 clients per port
- **Secure shell**
encrypts all transmitted data for secure remote CLI access over IP networks
- **Secure Sockets Layer (SSL)**
encrypts all HTTP traffic, allowing secure access to the browser-based management GUI in the switch
- **Port security**
allows access only to specified MAC addresses, which can be learned or specified by the administrator
- **MAC address lockout**
prevents particular configured MAC addresses from connecting to the network
- **Secure FTP**
allows secure file transfer to and from the switch; protects against unwanted file downloads or unauthorized copying of a switch configuration file

- **Switch management logon security**
helps secure switch CLI logon by optionally requiring either RADIUS or TACACS+ authentication
- **Custom banner**
displays security policy when users log in to the switch
- **STP BPDU port protection**
blocks Bridge Protocol Data Units (BPDUs) on ports that do not require BPDUs, preventing forged BPDU attacks
- **DHCP protection**
blocks DHCP packets from unauthorized DHCP servers, preventing denial-of-service attacks
- **Dynamic ARP protection**
blocks ARP broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data
- **STP Root Guard**
protects the root bridge from malicious attacks or configuration mistakes
- **Identity-driven ACL**
enables implementation of a highly granular and flexible access security policy and VLAN assignment specific to each authenticated network user
- **Per-port broadcast throttling**
selectively configures broadcast control on heavy traffic port uplinks

Monitor and diagnostics

- **Digital optical monitoring of SFP+ and 1000BASE-T transceivers**
allows detailed monitoring of the transceiver settings and parameters

Warranty and support

- **Lifetime warranty**
for as long as you own the product with advance replacement and next-business-day delivery (available in most countries)†
- **Electronic and telephone support**
limited electronic and telephone support is available from HP; to reach our support centers, refer to www.hp.com/networking/contact-support; for details on the duration of support provided with your product purchase, refer to www.hp.com/networking/warrantysummary
- **Software releases**
to find software for your product, refer to www.hp.com/networking/support; for details on the software releases available with your product purchase, refer to www.hp.com/networking/warrantysummary

†HP warranty includes repair or replacement of hardware for as long as you own the product, with next business day advance replacement (available in most countries). The disk drive included with HP AllianceOne Advanced Services and Services z1 Modules, HP Threat Management Services z1 Module, HP AllianceOne Extended z1 Module with Riverbed Steelhead, HP MSM765z1 Mobility Controller and HP Survivable Branch Communication z1 Module powered by Microsoft Lync has a five-year hardware warranty. For details, refer to the Software license and hardware warranty statements at www.hp.com/networking/warranty.

HP 2920 Switch Series

Specifications



	HP 2920-24G Switch (J9728A)	HP 2920-24G-PoE+ Switch (J9727A)
Ports	<p>20 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only</p> <p>4 RJ-45 dual-personality 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T)</p> <p>2 module slots</p> <p>1 Stacking module slot</p> <p>1 Dual-personality (RJ-45 or USB micro-B)</p> <p>1 USB 1.1</p> <p>1 RJ-45 out-of-band management port</p>	<p>20 RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only</p> <p>4 RJ-45 dual-personality 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+)</p> <p>2 module slots</p> <p>1 Stacking module slot</p> <p>1 Dual-personality (RJ-45 or USB micro-B)</p> <p>1 USB 1.1</p> <p>1 RJ-45 out-of-band management port</p>
Power supplies	<p>1 power supply slot</p> <p>1 minimum power supply required</p> <p>includes: 1 x J9739A (HP X331 165W 100-240VAC to 12VDC Modular Power Supply)</p>	<p>1 power supply slot</p> <p>1 minimum power supply required</p> <p>includes: 1 x J9738A (HP X332 575W 100-240VAC to 54VDC Modular Power Supply)</p>
Physical characteristics	17.42(w) x 13.23(d) x 1.75(h) in (44.25 x 33.6 x 4.45 cm) (1U height)	17.42(w) x 13.23(d) x 1.73(h) in (44.25 x 33.6 x 4.4 cm) (1U height)
Weight	11.57 lb (5.25 kg)	12.04 lb (5.46 kg)
Memory and processor	Tri Core ARM1176 @ 625 MHz, 512 MB SDRAM, 1 GB flash MB; packet buffer size: 11.25 MB (6.75 MB Dynamic Egress + 4.5 MB Ingress)	Tri Core ARM1176 @ 625 MHz, 512 MB SDRAM, 1 GB flash; packet buffer size: 11.25 MB (6.5 MB Dynamic Egress + 4.5 MB Ingress)
Performance	<p>100 Mb Latency < 9.0 μs (FIFO 64-byte packets)</p> <p>1000 Mb Latency < 3.3 μs (FIFO 64-byte packets)</p> <p>10 Gbps Latency < 3.3 μs (FIFO 64-byte packets)</p> <p>Throughput 95.2 million pps</p> <p>Switching capacity 128 Gbps</p> <p>Routing table size 2048 entries (IPv4), 256 entries (IPv6)</p> <p>MAC address table size 16000 entries</p>	<p>< 9.0 μs (FIFO 64-byte packets)</p> <p>< 3.3 μs (FIFO 64-byte packets)</p> <p>< 3.3 μs (FIFO 64-byte packets)</p> <p>95.2 million pps</p> <p>128 Gbps</p> <p>2048 entries (IPv4), 256 entries (IPv6)</p> <p>16000 entries</p>
Environment	<p>Operating temperature 32°F to 131°F (0°C to 55°C)</p> <p>Operating relative humidity 15% to 95%, noncondensing</p> <p>Nonoperating/Storage temperature -40°F to 158°F (-40°C to 70°C)</p> <p>Nonoperating/Storage relative humidity 15% to 95%, noncondensing</p> <p>Altitude up to 10,000 ft (3 km)</p> <p>Acoustic Power: 57 dB, Pressure: 41.4 dB</p>	<p>32°F to 131°F (0°C to 55°C)</p> <p>15% to 95%, noncondensing</p> <p>-40°F to 158°F (-40°C to 70°C)</p> <p>15% to 95%, noncondensing</p> <p>up to 10,000 ft (3 km)</p> <p>Power: 61 dB, Pressure: 44.9 dB</p>
Electrical characteristics	<p>Frequency 50/60 Hz</p> <p>80plus.org Certification Silver</p> <p>Maximum heat dissipation 198 BTU/hr (208.89 kJ/hr)</p> <p>Voltage 100-240 VAC</p> <p>Maximum power rating 58 W</p> <p>Idle power 26 W</p> <p>PoE power</p>	<p>50/60 Hz</p> <p>Silver</p> <p>358 BTU/hr (377.69 kJ/hr)</p> <p>100-240 VAC</p> <p>475 W</p> <p>42 W</p> <p>370 W</p>
Notes	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. PoE power is the power supplied by the internal power supply. It is dependent on the type and quantity of power supplies and may be supplemented with the use of an external power supply (EPS). 370 W of PoE+ power is available using the internal default power supply.
Safety	CE Labeled; EN 60825-1 Safety of Laser Products-Part 1; FCC Part 15, Subpart B; GOST; EU RoHS Compliant; EN 55022 Class A; EN 55024: 1998; C-Tick; ICES-003, Class A; VCCI Class A; IEC 60950-1, Second Edition; IEC 60825-1; EN62479:2010; CSA C22.2 No. 60950-1-07 2nd Edition; EN 60950-1:2006+A11:2009+A12:2011; IEC 60950-1 (ed.2): am1	CE Labeled; EN 60825-1 Safety of Laser Products-Part 1; FCC Part 15, Subpart B; GOST; EU RoHS Compliant; EN 55022 Class A; EN 55024: 1998; C-Tick; ICES-003, Class A; VCCI Class A; IEC 60825-1; IEC 60950-1, Second Edition; EN62479:2010; CSA C22.2 No. 60950-1-07 2nd Edition; EN 60950-1:2006+A11:2009+A12:2011; IEC 60950-1 (ed.2): am1

HP 2920 Switch Series

Specifications (continued)

	HP 2920-24G Switch (J9726A)	HP 2920-24G-PoE+ Switch (J9727A)
Emissions	FCC part 15 Class A; VCCI Class A; EN 55022/CISPR 22 Class A	FCC part 15 Class A; VCCI Class A; EN 55022/CISPR 22 Class A
Immunity		
EN	EN 55024, CISPR 24	EN 55024, CISPR 24
ESD	IEC 61000-4-2	IEC 61000-4-2
Radiated	IEC 61000-4-3	IEC 61000-4-3
EFT/Burst	IEC 61000-4-4	IEC 61000-4-4
Surge	IEC 61000-4-5	IEC 61000-4-5
Conducted	IEC 61000-4-6	IEC 61000-4-6
Power frequency magnetic field	IEC 61000-4-8	IEC 61000-4-8
Voltage dips and interruptions	IEC 61000-4-11	IEC 61000-4-11
Harmonics	IEC 61000-3-2	IEC 61000-3-2
Flicker	IEC 61000-3-3	IEC 61000-3-3
Management	HP PCM+; IMC - Intelligent Management Center; command-line interface; Web browser; configuration menu; out-of-band management (RJ-45 Ethernet); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; out-of-band management (serial RS-232C or Micro USB)	HP PCM+; IMC - Intelligent Management Center; command-line interface; Web browser; configuration menu; out-of-band management (RJ-45 Ethernet); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; out-of-band management (serial RS-232C or Micro USB)
Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP 2920 Switch Series

Specifications (continued)

	HP 2920-246 Switch (J9726A)	HP 2920-246-PoE+ Switch (J9727A)	
Standards and protocols (applies to all products in series)	<p>Denial of service protection CPU DoS Protection</p> <p>Device management RFC 1155 Structure and Mgmt Information (SMlv1) RFC 1157 SNMPv1/v2c RFC 1591 DNS (client) RFC 1901 (Community based SNMPv2) RFC 1901-1907 SNMPv2c, SMlv2 and Revised MIB-II RFC 1908 (SNMP v1/2 Coexistence) RFC 2578-2580 SMlv2 RFC 2579 (SMlv2 Text Conventions) RFC 2580 (SMlv2 Conformance) RFC 2819 (RMON groups Alarm, Event, History and Statistics only) RFC 3416 (SNMP Protocol Operations v2) RFC 3417 (SNMP Transport Mappings) HTML and telnet management HTTP, SSHv1, and Telnet Multiple Configuration Files Multiple Software Images SNMP v3 and RMON RFC support SSHv1/SSHv2 Secure Shell TACACS/TACACS+ Web UI</p> <p>General protocols IEEE 802.1AX-2008 Link Aggregation IEEE 802.1D MAC Bridges IEEE 802.1p Priority IEEE 802.1Q VLANs IEEE 802.1s Multiple Spanning Trees IEEE 802.1v VLAN classification by Protocol and Port IEEE 802.1w Rapid Reconfiguration of Spanning Tree IEEE 802.3ab 1000BASE-T IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE 802.3af Power over Ethernet IEEE 802.3at PoE+ IEEE 802.3az Energy Efficient Ethernet IEEE 802.3x Flow Control RFC 768 UDP RFC 783 TFTP Protocol (revision 2) RFC 792 ICMP RFC 793 TCP RFC 826 ARP RFC 854 TELNET RFC 868 Time Protocol RFC 951 BOOTP RFC 1058 RIPv1 RFC 1256 ICMP Router Discovery Protocol (IRDP) RFC 1350 TFTP Protocol (revision 2) RFC 1519 CIDR RFC 1542 BOOTP Extensions RFC 2030 Simple Network Time Protocol (SNTP) v4 RFC 2131 DHCP RFC 2236 IGMP Snooping RFC 2453 RIPv2 RFC 2865 Remote Authentication Dial In User Service (RADIUS) RFC 2866 RADIUS Accounting RFC 3046 DHCP Relay Agent Information Option RFC 3411 An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks RFC 3412 Message Processing and Dispatching for the Simple Network Management Protocol (SNMP) RFC 3413 Simple Network Management Protocol (SNMP) Applications RFC 3414 User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3) RFC 3415 View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP) RFC 3416 Protocol Operations for SNMP RFC 3417 Transport Mappings for the Simple Network Management Protocol (SNMP)</p>	<p>RFC 3418 Management Information Base (MIB) for the Simple Network Management Protocol (SNMP) RFC 3576 Ext to RADIUS (CoA only) RFC 4541 Considerations for Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) Snooping Switches RFC 4675 RADIUS VLAN & Priority RFC 4861 Neighbor Discovery for IP version 6 (IPv6) RFC 4862 IPv6 Stateless Address Autoconfiguration UDLD (Uni-directional Link Detection)</p> <p>IP multicast RFC 1112 IGMP RFC 2236 IGMPv2 RFC 2710 Multicast Listener Discovery (MLD) for IPv6 RFC 3376 IGMPv3 (host joins only) RFC 4541 Considerations for Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) Snooping Switches</p> <p>IPv6 RFC 1981 IPv6 Path MTU Discovery RFC 2460 IPv6 Specification RFC 2710 Multicast Listener Discovery (MLD) for IPv6 RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations (Ping only) RFC 2925 Remote Operations MIB (Ping only) RFC 3019 MLDv1 MIB RFC 3315 DHCPv6 (client and relay) RFC 3513 IPv6 Addressing Architecture RFC 3596 DNS Extension for IPv6 RFC 3810 MLDv2 (host joins only) RFC 4022 MIB for TCP RFC 4113 MIB for UDP RFC 4251 SSHv6 Architecture RFC 4252 SSHv6 Authentication RFC 4253 SSHv6 Transport Layer RFC 4254 SSHv6 Connection RFC 4293 MIB for IP RFC 4419 Key Exchange for SSH RFC 4443 ICMPv6 RFC 4541 IGMP & MLD Snooping Switch RFC 4861 IPv6 Neighbor Discovery RFC 4862 IPv6 Stateless Address Auto-configuration</p> <p>MIBs IEEE 802.1 ap (MSTP and STP MIB's only) RFC 1156 (TCP/IP MIB) RFC 1157 A Simple Network Management Protocol (SNMP) RFC 1213 MIB II RFC 1493 Bridge MIB RFC 1724 RIPv2 MIB RFC 2021 RMONv2 MIB RFC 2578 Structure of Management Information Version 2 (SMlv2) RFC 2579 Textual Conventions for SMlv2 RFC 2580 Conformance Statements for SMlv2 RFC 2613 SMON MIB RFC 2618 RADIUS Client MIB RFC 2620 RADIUS Accounting MIB RFC 2665 Ethernet-Like-MIB RFC 2668 802.3 MAU MIB RFC 2674 802.1p and IEEE 802.1Q Bridge MIB RFC 2737 Entity MIB (Version 2) RFC 2819 RMON MIB RFC 2863 The Interfaces Group MIB RFC 2925 Ping MIB RFC 2933 IGMP MIB RFC 3414 SNMP-User based-SM MIB RFC 3415 SNMP-View based-ACM MIB RFC 3417 Simple Network Management Protocol (SNMP) over IEEE 802 Networks</p>	<p>RFC 3418 MIB for SNMPv3</p> <p>Network management IEEE 802.1AB Link Layer Discovery Protocol (LLDP) RFC 1155 Structure of Management Information RFC 1157 SNMPv1 RFC 2021 Remote Network Monitoring Management Information Base Version 2 using SMlv2 RFC 2576 Coexistence between SNMP versions RFC 2578 Structure of Management Information Version 2 (SMlv2) RFC 2579 Textual Conventions for SMlv2 RFC 2580 Conformance Statements for SMlv2 RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events) RFC 2819 Remote Network Monitoring Management Information Base RFC 2856 Textual Conventions for Additional High Capacity Data Types RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations RFC 3164 BSD syslog Protocol RFC 3176 sFlow RFC 3411 SNMP Management Frameworks RFC 3412 SNMPv3 Message Processing RFC 3414 SNMPv3 User-based Security Model (USM) RFC 3415 SNMPv3 View-based Access Control Model (VACM) ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED) SNMPv1/v2c/v3 XRMON</p> <p>QoS/CoS IEEE 802.1P (CoS) RFC 2474 DiffServ Precedence, including 8 queues/port RFC 2597 DiffServ Assured Forwarding (AF) RFC 2598 DiffServ Expedited Forwarding (EF) Ingress Rate Limiting</p> <p>Security IEEE 802.1X Port Based Network Access Control IEEE 802.1X/Port-Based Network Access Control (2001) RFC 1321 The MD5 Message-Digest Algorithm RFC 1334 PPP Authentication Protocols (PAP) RFC 1492 An Access Control Protocol, Sometimes Called TACACS RFC 1492 TACACS+ RFC 1994 PPP Challenge Handshake Authentication Protocol (CHAP) RFC 2082 RIP-2 MD5 Authentication RFC 2104 Keyed-Hashing for Message Authentication RFC 2138 RADIUS Authentication RFC 2139 RADIUS Accounting RFC 2246 Transport Layer Security (TLS) RFC 2548 Microsoft Vendor-specific RADIUS Attributes RFC 2618 RADIUS Authentication Client MIB RFC 2620 RADIUS Accounting Client MIB RFC 2716 PPP EAP-TLS Authentication Protocol RFC 2818 HTTP Over TLS RFC 2865 RADIUS (client only) RFC 2865 RADIUS Authentication RFC 2866 RADIUS Accounting RFC 2867 RADIUS Accounting Modifications for Tunnel Protocol Support RFC 2868 RADIUS Attributes for Tunnel Protocol Support RFC 2869 RADIUS Extensions RFC 2882 NAS Requirements: Extended RADIUS Practices RFC 3162 RADIUS and IPv6 RFC 3576 Dynamic Authorization Extensions to RADIUS RFC 3579 RADIUS Support For Extensible Authentication Protocol (EAP)</p>

HP 2920 Switch Series

Specifications (continued)

	HP 2920-24G Switch (J9726A)		HP 2920-24G-PoE+ Switch (J9727A)
Standards and protocols (applies to all products in series)	RFC 3580 IEEE 802.1X Remote Authentication Dial In User Service (RADIUS) Usage Guidelines RFC 4576 RADIUS Attributes Access Control Lists (ACLs) draft-grant-tacacs-02 (TACACS) Guest VLAN for 802.1x	MAC Authentication MAC Lockdown MAC Lockout Port Security	Secure Sockets Layer (SSL) SSHv2 Secure Shell Web Authentication

HP 2920 Switch Series

Specifications (continued)



HP 2920-486 Switch (J9728A)



HP 2920-486-PoE+ Switch (J9729A)

Ports	<p>44 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only</p> <p>4 RJ-45 dual-personality 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T)</p> <p>2 module slots</p> <p>1 Stacking module slot</p> <p>1 Dual-personality (RJ-45 or USB micro-B)</p> <p>1 USB 1.1</p> <p>1 RJ-45 out-of-band management port</p>	<p>44 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only</p> <p>4 RJ-45 dual-personality 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+)</p> <p>2 module slots</p> <p>1 Stacking module slot</p> <p>1 Dual-personality (RJ-45 or USB micro-B)</p> <p>1 USB 1.1</p> <p>1 RJ-45 out-of-band management port</p>
Power supplies	<p>1 power supply slot</p> <p>1 minimum power supply required</p> <p>Includes: 1 x J9739A (HP X331 165W 100-240VAC to 12VDC Modular Power Supply)</p>	<p>1 power supply slot</p> <p>1 minimum power supply required</p> <p>Includes: 1 x J9738A (HP X332 575W 100-240VAC to 54VDC Modular Power Supply)</p>
Physical characteristics	<p>17.42(w) x 13.23(d) x 1.73(h) in (44.25 x 33.6 x 4.4 cm) (1U height)</p> <p>11.95 lb (5.42 kg)</p>	<p>17.42(w) x 13.23(d) x 1.73(h) in (44.25 x 33.6 x 4.39 cm) (1U height)</p> <p>12.57 lb (5.7 kg)</p>
Memory and processor	<p>Tri Core ARM1176 @ 625 MHz, 512 MB SDRAM, 1 GB flash; packet buffer size: 11.25 MB (6.75 MB Dynamic Egress + 4.5 MB Ingress)</p>	<p>Tri Core ARM1176 @ 625 MHz, 512 MB SDRAM, 1 GB flash; packet buffer size: 11.25 MB (6.75 MB Dynamic Egress + 4.5 MB Ingress)</p>
Performance	<p>100 Mb Latency < 9.0 μs (FIFO 64-byte packets)</p> <p>1000 Mb Latency < 3.3 μs (FIFO 64-byte packets)</p> <p>10 Gbps Latency < 3.2 μs (FIFO 64-byte packets)</p> <p>Throughput 130.9 million pps</p> <p>Switching capacity 176 Gbps</p> <p>Routing table size 2048 entries (IPv4), 256 entries (IPv6)</p> <p>MAC address table size 16000 entries</p>	<p>< 9.0 μs (FIFO 64-byte packets)</p> <p>< 3.2 μs (FIFO 64-byte packets)</p> <p>< 3.2 μs (FIFO 64-byte packets)</p> <p>130.9 million pps</p> <p>176 Gbps</p> <p>2048 entries (IPv4), 256 entries (IPv6)</p> <p>16000 entries</p>
Environment	<p>Operating temperature 32°F to 131°F (0°C to 55°C)</p> <p>Operating relative humidity 15% to 95%, noncondensing</p> <p>Nonoperating/Storage temperature -40°F to 158°F (-40°C to 70°C)</p> <p>Nonoperating/Storage relative humidity 15% to 95%, noncondensing</p> <p>Altitude up to 10,000 ft (3 km)</p> <p>Acoustic Power: 57 dB, Pressure: 41.8 dB</p>	<p>32°F to 131°F (0°C to 55°C)</p> <p>15% to 95%, noncondensing</p> <p>-40°F to 158°F (-40°C to 70°C)</p> <p>15% to 95%, noncondensing</p> <p>up to 10,000 ft (3 km)</p> <p>Power: 62 dB, Pressure: 45.2 dB</p>
Electrical characteristics	<p>Frequency 50/60 Hz</p> <p>80plus.org Certification Silver</p> <p>Maximum heat dissipation 239 BTU/hr (252.15 kJ/hr)</p> <p>Voltage 100-240 VAC</p> <p>Maximum power rating 70 W</p> <p>Idle power 27 W</p> <p>PoE power</p> <p>Notes Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.</p>	<p>50/60 Hz</p> <p>Silver</p> <p>399 BTU/hr (420.95 kJ/hr)</p> <p>100-240 VAC</p> <p>487 W</p> <p>46 W</p> <p>370 W</p> <p>Notes Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. PoE power is the power supplied by the internal power supply. It is dependent on the type and quantity of power supplies and may be supplemented with the use of an external power supply (EPS). 370 W of PoE+ power is available using the internal default power supply.</p>
Safety	<p>CE Labeled; EN 60825-1 Safety of Laser Products-Part 1; FCC Part 15, Subpart B; GOST; EU RoHS Compliant; EN 55022 Class A; EN 55024: 1998; C-Tick; ICES-003, Class A; VCCI Class A; IEC 60825-1; IEC 60950-1, Second Edition; EN62479:2010; CSA C22.2 No. 60950-1-07 2nd Edition; EN 60950-1:2006+A11:2009+A12:2010+A12:2011; IEC 60950-1 (ed.2): am1</p>	<p>CE Labeled; EN 60825-1 Safety of Laser Products-Part 1; FCC Part 15, Subpart B; GOST; EU RoHS Compliant; EN 55022 Class A; EN 55024: 1998; C-Tick; ICES-003, Class A; VCCI Class A; IEC 60950-1 :Second Edition; IEC 60825-1; EN62479:2010; CSA C22.2 No. 60950-1-07 2nd Edition; EN 60950-1:2006+A11:2009+A1:2010+A12:2011; IEC 60950-1 (ed.2): am1</p>

HP 2920 Switch Series

Specifications (continued)

	HP 2920-48G Switch (J9728A)	HP 2920-48G-PoE+ Switch (J9729A)
Emissions	FCC part 15 Class A; VCCI Class A; EN 55022/CISPR 22 Class A	FCC part 15 Class A; VCCI Class A; EN 55022/CISPR 22 Class A
Immunity		
EN	EN 55024, CISPR 24	EN 55024, CISPR 24
ESD	IEC 61000-4-2	IEC 61000-4-2
Radiated	IEC 61000-4-3	IEC 61000-4-3
EFT/Burst	IEC 61000-4-4	IEC 61000-4-4
Surge	IEC 61000-4-5	IEC 61000-4-5
Conducted	IEC 61000-4-6	IEC 61000-4-6
Power frequency magnetic field	IEC 61000-4-8	IEC 61000-4-8
Voltage dips and interruptions	IEC 61000-4-11	IEC 61000-4-11
Harmonics	IEC 61000-3-2	IEC 61000-3-2
Flicker	IEC 61000-3-3	IEC 61000-3-3
Management	HP PCM+; IMC - Intelligent Management Center; command-line interface; Web browser; configuration menu; out-of-band management (RJ-45 Ethernet); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; out-of-band management (serial RS-232C or Micro USB)	HP PCM+; IMC - Intelligent Management Center; command-line interface; Web browser; configuration menu; out-of-band management (RJ-45 Ethernet); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; out-of-band management (serial RS-232C or Micro USB)
Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP 2920 Switch Series

Specifications (continued)

	HP 2920-48G Switch (J9728A)	HP 2920-48G-PoE+ Switch (J9729A)	
Standards and protocols (applies to all products in series)	<p>Denial of service protection CPU DoS Protection</p> <p>Device management RFC 1155 Structure and Mgmt Information (SMIv1) RFC 1157 SNMPv1/v2c RFC 1591 DNS (client) RFC 1901 (Community based SNMPv2) RFC 1901-1907 SNMPv2c, SMIv2 and Revised MIB-II RFC 1908 (SNMP v1/2 Coexistence) RFC 2578-2580 SMIv2 RFC 2579 (SMIv2 Text Conventions) RFC 2580 (SMIv2 Conformance) RFC 2819 (RMON groups Alarm, Event, History and Statistics only) RFC 3416 (SNMP Protocol Operations v2) RFC 3417 (SNMP Transport Mappings) HTML and telnet management HTTP, SSHv1, and Telnet Multiple Configuration Files Multiple Software Images SNMP v3 and RMON RFC support SSHv1/SSHv2 Secure Shell TACACS/TACACS+ Web UI</p> <p>General protocols IEEE 802.1AX-2008 Link Aggregation IEEE 802.1D MAC Bridges IEEE 802.1p Priority IEEE 802.1Q VLANs IEEE 802.1s Multiple Spanning Trees IEEE 802.1v VLAN classification by Protocol and Port IEEE 802.1w Rapid Reconfiguration of Spanning Tree IEEE 802.3ab 1000BASE-T IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE 802.3af Power over Ethernet IEEE 802.3at PoE+ IEEE 802.3az Energy Efficient Ethernet IEEE 802.3x Flow Control RFC 768 UDP RFC 783 TFTP Protocol (revision 2) RFC 792 ICMP RFC 793 TCP RFC 826 ARP RFC 854 TELNET RFC 868 Time Protocol RFC 951 BOOTP RFC 1058 RIPv1 RFC 1256 ICMP Router Discovery Protocol (IRDP) RFC 1350 TFTP Protocol (revision 2) RFC 1519 CIDR RFC 1542 BOOTP Extensions RFC 2030 Simple Network Time Protocol (SNTP) v4 RFC 2131 DHCP RFC 2236 IGMP Snooping RFC 2453 RIPv2 RFC 2865 Remote Authentication Dial In User Service (RADIUS) RFC 2866 RADIUS Accounting RFC 3046 DHCP Relay Agent Information Option RFC 3411 An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks RFC 3412 Message Processing and Dispatching for the Simple Network Management Protocol (SNMP) RFC 3413 Simple Network Management Protocol (SNMP) Applications RFC 3414 User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3) RFC 3415 View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP) RFC 3416 Protocol Operations for SNMP RFC 3417 Transport Mappings for the Simple Network Management Protocol (SNMP)</p>	<p>RFC 3418 Management Information Base (MIB) for the Simple Network Management Protocol (SNMP) RFC 3576 Ext to RADIUS (CoA only) RFC 4541 Considerations for Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) Snooping Switches RFC 4675 RADIUS VLAN & Priority RFC 4861 Neighbor Discovery for IP version 6 (IPv6) RFC 4862 IPv6 Stateless Address Autoconfiguration UDLD (Uni-directional Link Detection)</p> <p>IP multicast RFC 1112 IGMP RFC 2236 IGMPv2 RFC 2710 Multicast Listener Discovery (MLD) for IPv6 RFC 3376 IGMPv3 (host joins only) RFC 4541 Considerations for Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) Snooping Switches</p> <p>IPv6 RFC 1961 IPv6 Path MTU Discovery RFC 2460 IPv6 Specification RFC 2710 Multicast Listener Discovery (MLD) for IPv6 RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations (Ping only) RFC 2925 Remote Operations MIB (Ping only) RFC 3019 MLDv1 MIB RFC 3315 DHCPv6 (client and relay) RFC 3513 IPv6 Addressing Architecture RFC 3596 DNS Extension for IPv6 RFC 3810 MLDv2 (host joins only) RFC 4022 MIB for TCP RFC 4113 MIB for UDP RFC 4251 SSHv6 Architecture RFC 4252 SSHv6 Authentication RFC 4253 SSHv6 Transport Layer RFC 4254 SSHv6 Connection RFC 4293 MIB for IP RFC 4419 Key Exchange for SSH RFC 4443 ICMPv6 RFC 4541 IGMP & MLD Snooping Switch RFC 4861 IPv6 Neighbor Discovery RFC 4862 IPv6 Stateless Address Auto-configuration</p> <p>MIBs IEEE 802.1ap (MSTP and STP MIB's only) RFC 1156 (TCP/IP MIB) RFC 1157 A Simple Network Management Protocol (SNMP) RFC 1213 MIB II RFC 1493 Bridge MIB RFC 1724 RIPv2 MIB RFC 2021 RMONv2 MIB RFC 2578 Structure of Management Information Version 2 (SMIv2) RFC 2579 Textual Conventions for SMIv2 RFC 2580 Conformance Statements for SMIv2 RFC 2613 SMON MIB RFC 2618 RADIUS Client MIB RFC 2620 RADIUS Accounting MIB RFC 2665 Ethernet-Like-MIB RFC 2668 802.3 MAU MIB RFC 2674 802.1p and IEEE 802.1Q Bridge MIB RFC 2737 Entity MIB (Version 2) RFC 2819 RMON MIB RFC 2863 The Interfaces Group MIB RFC 2925 Ping MIB RFC 2933 IGMP MIB RFC 3414 SNMP-User based-SM MIB RFC 3415 SNMP-View based-ACM MIB RFC 3417 Simple Network Management Protocol (SNMP) over IEEE 802 Networks</p>	<p>RFC 3418 MIB for SNMPv3</p> <p>Network management IEEE 802.1AB Link Layer Discovery Protocol (LLDP) RFC 1155 Structure of Management Information RFC 1157 SNMPv1 RFC 2021 Remote Network Monitoring Management Information Base Version 2 using SMIv2 RFC 2576 Coexistence between SNMP versions RFC 2578 Structure of Management Information Version 2 (SMIv2) RFC 2579 Textual Conventions for SMIv2 RFC 2580 Conformance Statements for SMIv2 RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events) RFC 2819 Remote Network Monitoring Management Information Base RFC 2856 Textual Conventions for Additional High Capacity Data Types RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations RFC 3164 BSD syslog Protocol RFC 3176 sFlow RFC 3411 SNMP Management Frameworks RFC 3412 SNMPv3 Message Processing RFC 3414 SNMPv3 User-based Security Model (USM) RFC 3415 SNMPv3 View-based Access Control Model (VACM) ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED) SNMPv1/v2c/v3 XRMON</p> <p>QoS/CoS IEEE 802.1P (CoS) RFC 2474 DiffServ Precedence, including 8 queues/port RFC 2597 DiffServ Assured Forwarding (AF) RFC 2598 DiffServ Expedited Forwarding (EF) Ingress Rate Limiting</p> <p>Security IEEE 802.1X Port Based Network Access Control IEEE 802.1X:Port-Based Network Access Control (2001) RFC 1321 The MD5 Message-Digest Algorithm RFC 1334 PPP Authentication Protocols (PAP) RFC 1492 An Access Control Protocol, Sometimes Called TACACS RFC 1492 TACACS+ RFC 1994 PPP Challenge Handshake Authentication Protocol (CHAP) RFC 2082 RIP-2 MD5 Authentication RFC 2104 Keyed-Hashing for Message Authentication RFC 2138 RADIUS Authentication RFC 2139 RADIUS Accounting RFC 2246 Transport Layer Security (TLS) RFC 2548 Microsoft Vendor-specific RADIUS Attributes RFC 2618 RADIUS Authentication Client MIB RFC 2620 RADIUS Accounting Client MIB RFC 2716 PPP EAP-TLS Authentication Protocol RFC 2818 HTTP Over TLS RFC 2865 RADIUS (client only) RFC 2865 RADIUS Authentication RFC 2866 RADIUS Accounting RFC 2867 RADIUS Accounting Modifications for Tunnel Protocol Support RFC 2868 RADIUS Attributes for Tunnel Protocol Support RFC 2869 RADIUS Extensions RFC 2882 NAS Requirements: Extended RADIUS Practices RFC 3162 RADIUS and IPv6 RFC 3576 Dynamic Authorization Extensions to RADIUS RFC 3579 RADIUS Support For Extensible Authentication Protocol (EAP)</p>

HP 2920 Switch Series

Specifications (continued)

	HP 2920-48G Switch (J9728A)		HP 2920-48G-PoE+ Switch (J9729A)
Standards and protocols (applies to all products in series)	RFC 3580 IEEE 802.1X Remote Authentication Dial In User Service (RADIUS) Usage Guidelines RFC 4576 RADIUS Attributes Access Control Lists (ACLs) draft-grant-tacacs-02 (TACACS) Guest VLAN for 802.1x	MAC Authentication MAC Lockdown MAC Lockout Port Security	Secure Sockets Layer (SSL) SSHv2 Secure Shell Web Authentication

HP 2920 Switch Series accessories

Modules

NEW HP 2920 2-Port 10GbE SFP+ Module (J9731A)

NEW HP 2920 2-port 10GBASE-T Module (J9732A)

NEW HP 2920 2-Port Stacking module (J9733A)

Transceivers

HP X121 1G SFP LC SX Transceiver (J4858C)

HP X121 1G SFP LC LX Transceiver (J4859C)

HP X122 1G SFP LC BX-D Transceiver (J9142B)

HP X122 1G SFP LC BX-U Transceiver (J9143B)

HP X121 1G SFP LC LH Transceiver (J4860C)

HP X121 1G SFP RJ45 T Transceiver (J8177C)

HP X111 100M SFP LC FX Transceiver (J9054C)

HP X112 100M SFP LC BX-D Transceiver (J9099B)

HP X112 100M SFP LC BX-U Transceiver (J9100B)

HP X132 10G SFP+ LC SR Transceiver (J9150A)

HP X132 10G SFP+ LC LR Transceiver (J9151A)

HP X132 10G SFP+ LC LRM Transceiver (J9152A)

HP X132 10G SFP+ LC ER Transceiver (J9153A)

HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable (J9281B)

HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable (J9283B)

HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable (J9285B)

HP X242 10G SFP+ to SFP+ 10m Direct Attach Copper Cable (J9286B)

HP X242 10G SFP+ to SFP+ 15m Direct Attach Copper Cable (J9287B)

HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable (J9300A)

HP X244 10G XFP to SFP+ 3m Direct Attach Copper Cable (J9301A)

HP X244 10G XFP to SFP+ 5m Direct Attach Copper Cable (J9302A)

Cables

HP 0.5 m Multimode OM3 LC/LC Optical Cable (AJ833A)

HP 1 m Multimode OM3 LC/LC Optical Cable (AJ834A)

HP 2 m Multimode OM3 LC/LC Optical Cable (AJ835A)

HP 5 m Multimode OM3 LC/LC Optical Cable (AJ836A)

HP 15 m Multimode OM3 LC/LC Optical Cable (AJ837A)

HP 30 m Multimode OM3 LC/LC Optical Cable (AJ838A)

HP 50 m Multimode OM3 LC/LC Optical Cable (AJ839A)

HP 0.5 m PremierFlex OM3+ LC/LC Optical Cable (BK837A)

HP 1 m PremierFlex OM3+ LC/LC Optical Cable (BK838A)

HP 2 m PremierFlex OM3+ LC/LC Optical Cable (BK839A)

HP 5 m PremierFlex OM3+ LC/LC Optical Cable (BK840A)

HP 15 m PremierFlex OM3+ LC/LC Optical Cable (BK841A)

HP 30 m PremierFlex OM3+ LC/LC Optical Cable (BK842A)

HP 50 m PremierFlex OM3+ LC/LC Optical Cable (BK843A)

NEW HP 2920 0.5m Stacking Cable (J9734A)

NEW HP 2920 1.0m Stacking Cable (J9735A)

NEW HP 2920 3.0m Stacking Cable (J9736A)

Mounting Kit

HP X410 1U Universal 4-post Rack Mounting Kit (J9583A)

HP 2920-24G Switch (J9726A)

NEW HP X331 165W 100-240VAC to 12VDC Modular Power Supply (J9739A)

HP 2920-24G-PoE+ Switch (J9727A)

NEW HP X332 575W 100-240VAC to 54VDC Modular Power Supply (J9738A)

HP 2920-48G Switch (J9728A)

NEW HP X331 165W 100-240VAC to 12VDC Modular Power Supply (J9739A)

HP 2920-48G-PoE+ Switch (J9729A)

NEW HP X332 575W 100-240VAC to 54VDC Modular Power Supply (J9738A)



To learn more, visit hp.com/networking

© Copyright 2013 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Microsoft is a U.S. registered trademark of Microsoft Corporation.

4AA4-5213ENW, Created February 2013



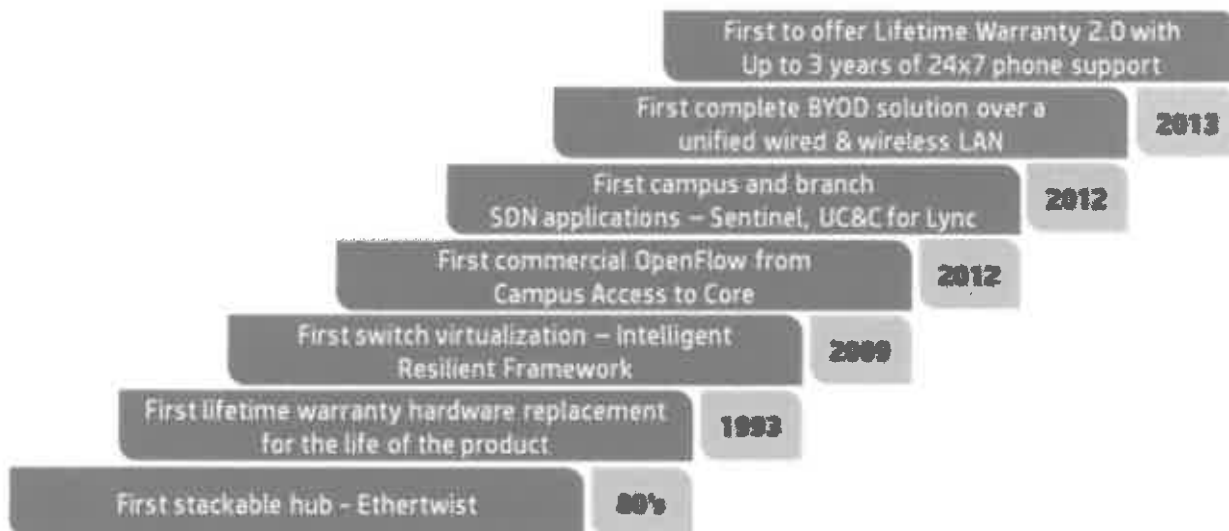
Fact sheet

HP Lifetime Warranty 2.0

New ideas and innovations in the technology space often redefine the economics of the status quo. As a leader in campus and branch networking, HP has been at the forefront of developing products and services that challenge the status quo and deliver significantly improved economics for organizations.

In 1993, HP introduced the first lifetime warranty for network products, setting a benchmark for availability with next-business-day replacement of products for as long as customers own them. Product design, manufacturing excellence, and overall quality enabled HP to make this bold commitment.

In an industry where the standard warranty was typically 90 days, the warranty set a new industry benchmark and other vendors were forced to follow with their own restricted adaptations of lifetime warranty. These limited lifetime warranties were riddled with fine print, and they didn't deliver complete hardware coverage.



HP track record in advancing campus economics

The HP Lifetime Warranty 2.0 for networking products raises the benchmark yet again, setting a new standard for warranty and service coverage.

Simplifying networking product support

The Lifetime Warranty 2.0 provides all of the value of the original lifetime warranty and extends it with up to three years of 24x7 phone support included in the product purchase price. Benefits include simplicity and cost-effectiveness:

Simple

- Extends support availability for always on networks
- Streamlines purchasing with one SKU
- Strengthens confidence and peace of mind

Cost-Effective

- Eliminates hidden costs – included as part of purchase price
- Lowers upfront and ongoing support costs
- Reduces cost for additional add-on service enhancements

Lifetime Warranty 2.0 and Hardware Warranty 2.0

The comprehensive Lifetime Warranty covers all components, including fans and power supplies, with next-business-day hardware replacement in most countries.

Hardware Warranty 2.0 extends 24x7 phone support to non-Lifetime warranty products to match the hardware warranty duration of either one year or three years.

Lifetime Warranty 2.0					
Original Lifetime Warranty					24x7 Phone Support
Product Category	Warranty duration	Advance replacement delivery	Software/OS releases	Business Hours Phone Support	
FlexCampus*	Lifetime ¹	Next-business day ²	As long as owned ³	As long as owned	3 years
FlexBranch*	Lifetime ¹	Next-business day ²	As long as owned ³	As long as owned	3 years
Small Business*	Lifetime ¹	Next-business day ²	As long as owned ³	As long as owned	3 years

*See hp.com/networking/warrantysummary for included products

Hardware Warranty 2.0					
Original Warranty					24x7 Phone Support
Product Category	Warranty duration	Advance replacement delivery	Software/OS releases	Business Hours Phone Support	
FlexCampus*	1 year	Next-business day ²	As long as owned ³	1 year	1 year
		10 days			
		Next-business day ²	1 year		
FlexBranch*	1 year	Next-business day ²	As long as owned ³ 1 year	1 year	1 year
Small Business*	3 years	Next-business day ²	As long as owned ³	3 years	3 years

*See hp.com/networking/warrantysummary for included products

For more information

To learn more, visit hp.com/networking/warranty.

¹ Hardware warranty, technical support, and all software releases provided for hardware and the ONE Service OS only, when and if available, for as long as you own the product. See product specific documentation for application support. 5-year warranty on the disk drive in the HP Alliance One Advanced Services and Services zL Modules, HP AllianceOne Ext zL Mod w/Rvrbld Stlhd, HP MSM765zL Mobility Controller, and HP Surv Brch Com zL Mod pwrby Msft Lync.

² Response time is based on commercially reasonable effort and subject to a daily shipment cutoff time. In some countries and regions and under certain supplier constraints, response time may vary. Contact your local HP service organization for response time availability in your area. NBD=Next Business Day.

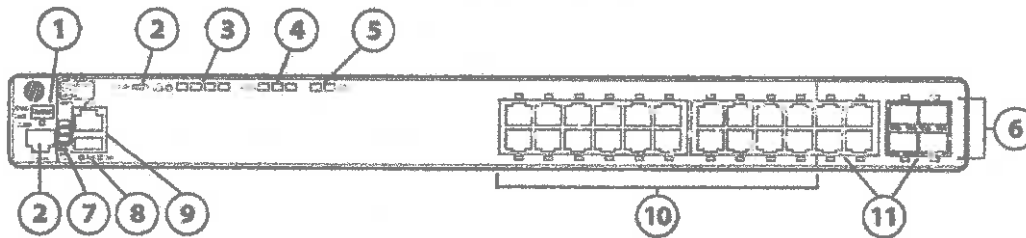
³ All products covered by Lifetime Warranty 2.0 also include all updates, including software/OS major and minor releases offered for the specific products listed, when and if available, for as long as you own the product, except the MSM765zL module; MSM4xx, MSM3xx, and M200 access points; MSM317 wireless access device; and MSM415 RF Security Sensor as well as releases for the first three years. Some software releases may require additional hardware to be installed.

Overview

HP 2920 Switch Series

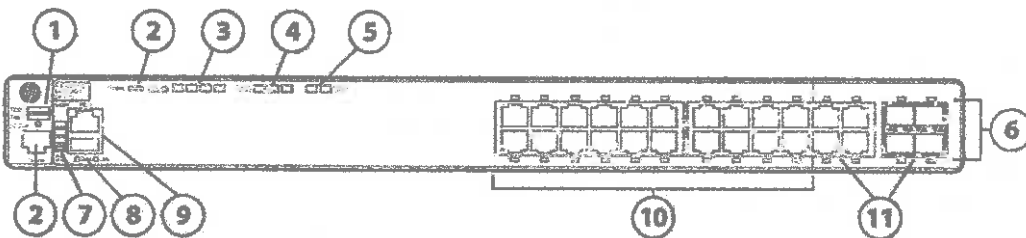
Models

HP 2920-24G Switch	J9726A
HP 2920-24G-POE+ Switch	J9727A
HP 2920-48G Switch	J9728A
HP 2920-48G-POE+ Switch	J9729A
HP 2920-48G-POE+ 740W Switch	J9836A



HP 2920-24G Switch

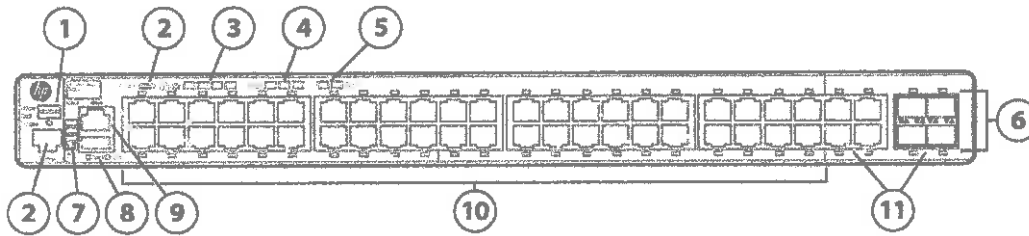
- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Power, Fault, and Locator LEDs 2. Console ports 3. LED Mode button and indicator LEDs 4. Status LEDs for components on the back of the switch 5. Stacking status LEDs 6. Switch port LEDs | <ol style="list-style-type: none"> 7. PoE, Tmp (Temperature), Test, Fan, and Aux (Auxiliary) port status LED 8. Reset and Clear buttons 9. Aux port and Out-of-Band Management port 10. 10/100/1000BASE-T PoE+ RJ-45 ports 11. Dual-Personality (10/100/1000BASE-T or SFP) ports |
|---|---|



HP 2920-24G-PoE+ Switch

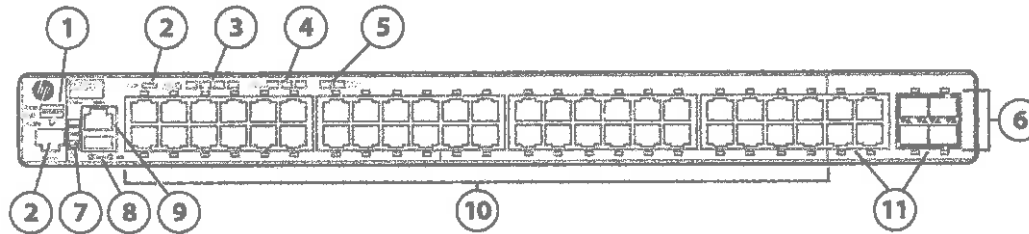
- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Power, Fault, and Locator LEDs 2. Console ports 3. LED Mode button and indicator LEDs 4. Status LEDs for components on the back of the switch 5. Stacking status LEDs 6. Switch port LEDs | <ol style="list-style-type: none"> 7. PoE, Tmp (Temperature), Test, Fan, and Aux (Auxiliary) port status LED 8. Reset and Clear buttons 9. Aux port and Out-of-Band Management port 10. 10/100/1000BASE-T PoE+ RJ-45 ports 11. Dual-Personality (10/100/1000BASE-T or SFP) ports |
|---|---|

Overview



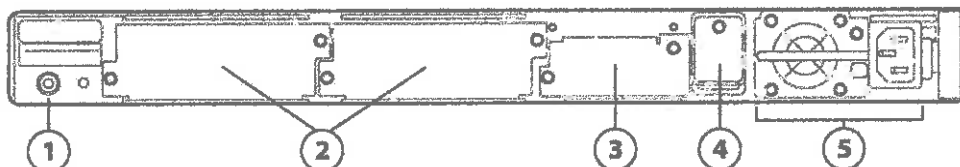
HP 2920-48G Switch

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Power, Fault, and Locator LEDs 2. Console ports 3. LED Mode button and indicator LEDs 4. Status LEDs for components on the back of the switch 5. Stacking status LEDs 6. Switch port LEDs | <ol style="list-style-type: none"> 7. PoE, Tmp (Temperature), Test, Fan, and Aux (Auxiliary) port status LED 8. Reset and Clear buttons 9. Aux port and Out-of-Band Management port 10. 10/100/1000BASE-T PoE+ RJ-45 ports 11. Dual-Personality (10/100/1000BASE-T or SFP) ports |
|---|---|



HP 2920-48G-PoE+ Switch HP 2920-48G-PoE+ 740W Switch

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Power, Fault, and Locator LEDs 2. Console ports 3. LED Mode button and indicator LEDs 4. Status LEDs for components on the back of the switch 5. Stacking status LEDs 6. Switch port LEDs | <ol style="list-style-type: none"> 7. PoE, Tmp (Temperature), Test, Fan, and Aux (Auxiliary) port status LED 8. Reset and Clear buttons 9. Aux port and Out-of-Band Management port 10. 10/100/1000BASE-T PoE+ RJ-45 ports 11. Dual-Personality (10/100/1000BASE-T or SFP) ports |
|---|---|



Overview

HP 2920 Switch Series Rear (All)

1. Grounding lug mounting hole
2. 10G Expansion Module slots
3. Stacking Module Slot
4. XPS Connector
5. Power Supply and AC power connector

Key Features

- High-performance Gigabit Ethernet access switch
- Four optional 10GbE (SFP+ and/or 10GBASE-T) ports
- Stacking capability with a total of four switches
- L2 and L3 plus static and RIP routing, PoE, and PoE+ support
- Limited Lifetime Warranty 2.0, sFlow, ACLs, OpenFlow, and rate limiting

Product overview

The HP 2920 Switch Series consists of five switches: the 2920-24G and 2920-24G-PoE+ switches with 24 10/100/1000 ports and the 2920-48G, 2920-48G-PoE+, and 2920-48G 740W PoE+ switches with 48 10/100/1000 ports. Each switch has four dual-personality ports for 10/100/1000 or SFP connectivity.

In addition, the 2920 Switch Series supports up to four optional 10 Gigabit Ethernet (SFP+ and/or 10GBASE-T) ports, as well as a two-port stacking module. These options provide you with flexible and easy-to-deploy uplinks and stacking.

Together with static and routing-information-protocol (RIP) routing, robust security and management, enterprise-class features, Limited Lifetime Warranty 2.0, and software updates included, the 2920 Switch Series is a comprehensive, cost-effective, and scalable solution for building high-performance networks. These switches can be deployed at the enterprise edge, in remote branch offices, and in converged networks.

Features and Benefits

Software-defined networking

- **OpenFlow**
supports OpenFlow 1.0 and 1.3 specifications to enable SDN by allowing separation of the data (packet forwarding) and control (routing decision) paths

Unified Wired and Wireless

- **HTTP redirect function**
supports HP Intelligent Management Center (IMC) bring your own device (BYOD) solution

Quality of Service (QoS)

- **Traffic prioritization (IEEE 802.1p)**
allows real-time traffic classification into eight priority levels mapped to eight queues
- **Layer 4 prioritization**
enables prioritization based on TCP/UDP port numbers
- **Class of Service (CoS)**
sets the IEEE 802.1p priority tag based on IP address, IP Type of Service (ToS), Layer 3 protocol, TCP/UDP port number, source port, and DiffServ
- **Rate limiting**
sets per-port ingress enforced maximums and per-port, per-queue minimums
- **Large buffers**
provide graceful congestion management

Overview

Connectivity

- **Flexible 10 Gb/s Ethernet connectivity**
up to four optional 10 Gigabit ports (SFP+ and/or 10GBASE-T)
- **Optional two-port stacking module with up to 40 Gb/s per port**
allows stacking of up to four switch units into a single virtual device
- **Auto-MDIX**
provides automatic adjustments for straight-through or crossover cables on all 10/100 and 10/100/1000 ports
- **IPv6**
 - **IPv6 host**
allows the switches to be managed and deployed at the edge of IPv6 networks
 - **Dual stack (IPv4/IPv6)**
provides the transition mechanism from IPv4 to IPv6; and supports connectivity for both protocols
 - **MLD snooping**
forwards IPv6 multicast traffic to the appropriate interface; and helps prevent IPv6 multicast traffic from flooding the network
 - **Security**
provides RA guard, DHCPv6 protection, dynamic IPv6 lockdown
- **IEEE 802.3at Power over Ethernet (PoE+)**
provide up to 30 W per port that allows support of the latest PoE+-capable devices such as IP phones, wireless access points, and security cameras, as well as any IEEE 802.3af-compliant end device; eliminates the cost of additional electrical cabling and circuits that would otherwise be necessary in IP phone and WLAN deployments
- **Pre-standard PoE support**
detects and provides power to pre-standard PoE devices
- **Dual-personality functionality**
includes four 10/100/1000 ports or SFP slots for optional fiber connectivity such as Gigabit-SX, -LX, and -LH, or 100-FX

Performance

- **Energy-efficient design**
 - **80 PLUS Silver Certified power supply:**
increases power efficiency and savings
 - **Energy-efficient Ethernet (EEE) support**
reduces power consumption in accordance with IEEE 802.3az
- **HP ProVision ASIC architecture**
is designed with the latest ProVision ASIC, providing very low latency, increased packet buffering, and adaptive power consumption
- **Selectable queue configurations**
allows for increased performance by selecting the number of queues and associated memory buffering that best meet the requirements of the network applications

Convergence

- **IP multicast snooping and data-driven IGMP**
automatically prevent flooding of IP multicast traffic
- **LLDP-MED (Media Endpoint Discovery)**
defines a standard extension of LLDP that stores values for parameters such as QoS and VLAN to automatically configure network devices such as IP phones
- **IEEE 802.1AB Link Layer Discovery Protocol (LLDP)**
is an automated device discovery protocol that provides easy mapping of network management applications
- **PoE and PoE+ allocations**
support multiple methods (automatic, IEEE 802.3at dynamic, LLDP-MED fine grain, IEEE 802.3af device class, or user specified) to allocate and manage PoE/PoE+ power for more efficient energy savings
- **Local MAC Authentication**

Overview

assigns attributes such as VLAN and QoS using locally configured profile that can be a list of MAC prefixes

Resiliency and high availability

- **IEEE 802.1s Multiple Spanning Tree**
provides high link availability in multiple VLAN environments by allowing multiple spanning trees; provides legacy support for IEEE 802.1d and IEEE 802.1w
- **IEEE 802.3ad link-aggregation-control protocol (LACP) and HP port trunking**
support up to 60 static, dynamic, or distributed trunks active across a stack, with each trunk having up to eight links (ports) per static trunk; support trunking across stack members
- **Ring and chain stacking topology**
allows failure of a link or switch in the ring of stacked switches, while the remaining connected switches continue operation
- **SmartLink**
provides easy-to-configure link redundancy of active and standby links

Management

- **SNMPv1, v2, and v3**
provide complete support of SNMP; provide full support of industry-standard Management Information Base (MIB) plus private extensions; SNMPv3 supports increased security using encryption
- **Out-of-band Ethernet management port**
enables management of a separate physical management network, keeping management traffic segmented from network data traffic

Manageability

- **Dual flash images**
provides independent primary and secondary operating system files for backup while upgrading
- **Friendly port names**
allow assignment of descriptive names to ports
- **Find-Fix-Inform**
finds and fixes common network problems automatically, then informs administrator
- **Multiple configuration files**
allow multiple configuration files to be stored to a flash image
- **Software updates**
free downloads from the Web
- **RMON, XRMON, and sFlow**
provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events
- **Troubleshooting**
ingress and egress port monitoring enable network problem solving
- **Uni-Directional Link Detection (UDLD)**
monitors a link between two switches and blocks the ports on both ends of the link if the link goes down at any point between the two devices.

Layer 2 switching

- **VLAN support and tagging**
supports IEEE 802.1Q (4,094 VLAN IDs) and 256 VLANs simultaneously
- **GARP VLAN Registration Protocol**
allows automatic learning and dynamic assignment of VLANs
- **Jumbo packet support**
improves the performance of large data transfers; supports frame size of up to 9220 bytes

Overview

- **IEEE 802.1v protocol VLANs**
isolate select non-IPv4 protocols automatically into their own VLANs
- **Rapid Per-VLAN Spanning Tree (RPVST+)**
allows each VLAN to build a separate spanning tree to improve link bandwidth usage; is compatible with PVST+

Layer 3 services

- **DHCP server**
centralizes and reduces the cost of IPv4 address management

Layer 3 routing

- **Static IP routing**
provides manually configured routing; includes ECMP capability
- **Routing Information Protocol (RIP)**
provides RIPv1 and RIPv2 routing
- **256 static and 2,048 RIP routes**
facilitate segregation of user data without adding external hardware

Security

- **Multiple user authentication methods**
 - **IEEE 802.1X**
uses an IEEE 802.1X supplicant on the client in conjunction with a RADIUS server to authenticate in accordance with industry standards
 - **Web-based authentication**
provides a browser-based environment, similar to IEEE 802.1X, to authenticate clients that do not support the IEEE 802.1X supplicant
 - **MAC-based authentication**
authenticates the client with the RADIUS server based on the client's MAC address
- **Authentication flexibility**
 - **Multiple IEEE 802.1X users per port**
provides authentication of multiple IEEE 802.1X users per port; prevents a user from "piggybacking" on another user's IEEE 802.1X authentication
 - **Concurrent IEEE 802.1X, Web, and MAC authentication schemes per port**
switch port will accept up to 32 sessions of IEEE 802.1X, Web, and MAC authentications
- **Access control lists (ACLs)**
provide IP Layer 3 filtering based on source/destination IP address/subnet and source/destination TCP/UDP port number
- **Source-port filtering**
allows only specified ports to communicate with each other
- **RADIUS/TACACS+**
eases switch management security administration by using a password authentication server
- **IEEE 802.1X, MAC or Web authentication**
provides concurrent network access control and Web authentication of up to 24 clients per port
- **Secure shell**
encrypts all transmitted data for secure remote CLI access over IP networks
- **Secure Sockets Layer (SSL)**
encrypts all HTTP traffic, allowing secure access to the browser-based management GUI in the switch
- **Port security**
allows access only to specified MAC addresses, which can be learned or specified by the administrator
- **MAC address lockout**
prevents particular configured MAC addresses from connecting to the network
- **Secure FTP**
allows secure file transfer to and from the switch; protects against unwanted file downloads or unauthorized copying of a

Overview

- switch configuration file
- **Switch management logon security**
helps secure switch CLI logon by optionally requiring either RADIUS or TACACS+ authentication
- **Custom banner**
displays security policy when users log in to the switch
- **STP BPDU port protection**
blocks Bridge Protocol Data Units (BPDUs) on ports that do not require BPDUs, preventing forged BPDU attacks
- **DHCP protection**
blocks DHCP packets from unauthorized DHCP servers, preventing denial-of-service attacks
- **Dynamic ARP protection**
blocks ARP broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data
- **STP Root Guard**
protects the root bridge from malicious attacks or configuration mistakes
- **Identity-driven ACL**
enables implementation of a highly granular and flexible access security policy and VLAN assignment specific to each authenticated network user
- **Per-port broadcast throttling**
configures broadcast control selectively on heavy traffic port uplinks

Monitor and diagnostics

- **Digital optical monitoring of SFP+ and 1000BASE-T transceivers**
allows detailed monitoring of the transceiver settings and parameters

Warranty and support

- **Limited Lifetime Warranty v2.0**
advance hardware replacement with next-business-day delivery (available in most countries). See www.hp.com/networking/warrantysummary for duration details.
- **Electronic and telephone support (for Limited Lifetime Warranty 2.0)**
limited 24x7 telephone support is available from HP for the first 3 years; limited electronic and business hours telephone support is available from HP for the entire warranty period; to reach our support centers, refer to www.hp.com/networking/contact-support; for details on the duration of support provided with your product purchase, refer to www.hp.com/networking/warrantysummary
- **Software releases**
to find software for your product, refer to www.hp.com/networking/support; for details on the software releases available with your product purchase, refer to www.hp.com/networking/warrantysummary

Configuration

Build To Order:

BTO is a standalone unit with no integration. BTO products ship standalone are not part of a CTO or Rack-Shippable solution.

HP 2920-24G Switch	J9726A
<ul style="list-style-type: none"> • 24 RJ-45 autosensing 10/100/1000 ports • 4 dual-personality ports • min=0 \ max=4 SFP Transceivers • 1 - HP X331 165W 100-240VAC to 12VDC PS included • 1U - Height 	
PDU CABLE NA/MEX/TW/JPPDU CABLE NA/MEX/TW/JP	J9726A#B2B
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (NA/MEX/TW/JP) 	
PDU CABLE ROW	J9726A#B2C
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (ROW) 	
High Volt Switch to Wall Power Cord	J9726A#B2E
<ul style="list-style-type: none"> • NEMA L6-20P Cord (NA/MEX/JP/TW) 	
HP 2920-24G-POE+ Switch	J9727A
<ul style="list-style-type: none"> • 24 RJ-45 autosensing 10/100/1000 PoE+ ports • 4 dual-personality ports • min=0 \ max=4 SFP Transceivers • 1 - HP X332 575W 100-240VAC to 54VDC PS included • 1U - Height 	See Configuration Note:1, 2
PDU CABLE NA/MEX/TW/JPPDU CABLE NA/MEX/TW/JP	J9727A#B2B
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (NA/MEX/TW/JP) 	
PDU CABLE ROW	J9727A#B2C
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (ROW) 	
High Volt Switch to Wall Power Cord	J9727A#B2E
<ul style="list-style-type: none"> • NEMA L6-20P Cord (NA/MEX/JP/TW) 	
HP 2920-48G Switch	J9728A
<ul style="list-style-type: none"> • 48 RJ-45 autosensing 10/100/1000 ports • 4 dual-personality ports • min=0 \ max=4 SFP Transceivers 	See Configuration Note:1, 2

Configuration

- 1 - HP X331 165W 100-240VAC to 12VDC PS included
- 1U - Height

PDU CABLE NA/MEX/TW/JPPDU CABLE NA/MEX/TW/JP

J9728A#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU CABLE ROW

J9728A#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord

J9728A#B2E

- NEMA L6-20P Cord (NA/MEX/JP/TW)

HP 2920-48G-POE+ Switch

J9729A

See Configuration
Note:1, 2

- 48 RJ-45 autosensing 10/100/1000 PoE+ ports
- 4 dual-personality ports
- min=0 \ max=4 SFP Transceivers
- 1 - HP X332 575W 100-240VAC to 54VDC PS included
- 1U - Height

PDU CABLE NA/MEX/TW/JP

J9729A#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU CABLE ROW

J9729A#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord

J9729A#B2E

- NEMA L6-20P Cord (NA/MEX/JP/TW)

HP 2920-48G-POE+ 740W Switch

J9836A

See Configuration
Note:1, 2

- 44 RJ-45 autosensing 10/100/1000 PoE+ ports
- 4 RJ-45 dual-personality 10/100/1000 PoE+ ports
- min=0 \ max=4 SFP Transceivers
- 1 - HP X332 1050W 110-240VAC to 54VDC PS included
- 1U - Height

PDU CABLE NA/MEX/TW/JP

J9836A#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU CABLE ROW

J9836A#B2C

Configuration

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord

J9836A#B2E

- NEMA L6-20P Cord (NA/MEX/JP/TW)

Configuration Rules

Note 1

The following Transceivers install into this Module Switch:

HP X121 1G SFP LC LH Transceiver	J4860C
HP X121 1G SFP LC LX Transceiver	J4859C
HP X121 1G SFP LC SX Transceiver	J4858C
HP X122 1G SFP LC BX-D Transceiver	J9142B
HP X122 1G SFP LC BX-U Transceiver	J9143B
HP X111 100M SFP LC FX Transceiver	J9054C
HP X112 100M SFP LC BX-D Transceiver	J9099B
HP X112 100M SFP LC BX-U Transceiver	J9100B

Note 2

Localization required on orders without #B2B, #B2C or #B2E options.

Rack Level Integration CTO Models

HP 2920-24G Switch

- 24 RJ-45 autosensing 10/100/1000 ports
- 4 dual-personality ports\
- min=0 \ max=4 SFP Transceivers
- 1 - HP X331 165W 100-240VAC to 12VDC PS included
- 1U - Height

J9726A#0D1

See Configuration
Note:1, 3, 4, 5

PDU CABLE NA/MEX/TW/JP

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

J9726A#B2B

PDU CABLE ROW

- C15 PDU Jumper Cord (ROW)

J9726A#B2C

HP 2920-24G-POE+ Switch

- 24 RJ-45 autosensing 10/100/1000 PoE+ ports
- 4 dual-personality ports
- min=0 \ max=4 SFP Transceivers
- 1 - HP X332 575W 100-240VAC to 54VDC PS included
- 1U - Height

J9727A#0D1

See Configuration
Note:1, 3, 4, 5

PDU CABLE NA/MEX/TW/JP

J9727A#B2B

Configuration

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU CABLE ROW

J9727A#B2C

- C15 PDU Jumper Cord (ROW)

HP 2920-48G Switch

J9728A#0D1

- 48 RJ-45 autosensing 10/100/1000 ports
- 4 dual-personality ports
- min=0 \ max=4 SFP Transceivers
- 1 - HP X331 165W 100-240VAC to 12VDC PS included
- 1U - Height

See Configuration
Note:1, 3, 4, 5

PDU CABLE NA/MEX/TW/JP

J9728A#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU CABLE ROW

J9728A#B2C

- C15 PDU Jumper Cord (ROW)

HP 2920-48G-POE+ Switch

J9729A#0D1

- 48 RJ-45 autosensing 10/100/1000 PoE+ ports
- 4 dual-personality ports
- min=0 \ max=4 SFP Transceivers
- 1 - HP X332 575W 100-240VAC to 54VDC PS included
- 1U - Height

See Configuration
Note:1, 3, 4, 5

PDU CABLE NA/MEX/TW/JP

J9729A#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU CABLE ROW

J9729A#B2C

- C15 PDU Jumper Cord (ROW)

HP 2920-48G-POE+ 740W Switch

J9836A

- 44 RJ-45 autosensing 10/100/1000 PoE+ ports
- 4 RJ-45 dual-personality 10/100/1000 PoE+ ports
- min=0 \ max=4 SFP Transceivers
- 1 - HP X332 1050W 110-240VAC to 54VDC PS included
- 1U - Height

See Configuration
Note:1, 3, 4, 5

PDU CABLE NA/MEX/TW/JP

J9836A#B2B

Configuration

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU CABLE ROW

J9836A#B2C

- C15 PDU Jumper Cord (ROW)

Configuration Rules

Note 1 The following Transceivers install into this Module (Use #0D1 quoted to switch if switch is CTO) - if applicable:

HP X121 1G SFP LC LH Transceiver	J4860C
HP X121 1G SFP LC LX Transceiver	J4859C
HP X121 1G SFP LC SX Transceiver	J4858C
HP X122 1G SFP LC BX-D Transceiver	J9142B
HP X122 1G SFP LC BX-U Transceiver	J9143B
HP X111 100M SFP LC FX Transceiver	J9054C
HP X112 100M SFP LC BX-D Transceiver	J9099B
HP X112 100M SFP LC BX-U Transceiver	J9100B

Note 3 If this switch is factory installed in HP Racks, then the J9583A#0D1 is required.
CLIC Only - Allow the J9583AZ in all regions

Note 4 Localization required on orders without #B2B or #B2C options

Note 5 If HP CTO Switch Chassis is selected for Rack Level Integration, Then the CTO Switch Chassis needs to integrate (with #0D1) to the HP Rack.

Remarks Drop down under power supply should offer the following options and results:
Switch/Router/Power Supply to PDU Power Cord - #B2B in North America, Mexico, Taiwan, and Japan or #B2C ROW. (Watson Default B2B or B2C for Rack Level CTO)
Switch/Router/Power Supply to Wall Power Cord - Localized Option (Watson Default for BTO and Box Level CTO)

Internal Power Supplies

System (std 1 // max 1) per switch enclosure

HP X331 165W 100-240VAC to 12VDC PS

J9739A#0D1

- includes 1 x c15, 165w (Spare Only)

See Configuration
Note:1, 3, 4

PDU CABLE NA/MEX/TW/JP

J9739A#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU CABLE ROW

J9739A#B2C

- C15 PDU Jumper Cord (ROW)

Configuration

<p>High Volt Switch to Wall Power Cord</p> <ul style="list-style-type: none"> • NEMA L6-20P Cord (NA/MEX/JP/TW) 	<p>J9739A#B2E</p>
<p>HP X332 575W 100-240VAC to 54VDC PS</p> <ul style="list-style-type: none"> • Includes 1 x c15, 575w (Spare Only) 	<p>J9738A#0D1 See Configuration Note:2, 3, 4</p>
<p>PDU CABLE NA/MEX/TW/JP</p> <ul style="list-style-type: none"> • C15 PDU Jumper Cord (NA/MEX/TW/JP) 	<p>J9738A#B2B</p>
<p>PDU CABLE ROW</p> <ul style="list-style-type: none"> • C15 PDU Jumper Cord (ROW) 	<p>J9738A#B2C</p>
<p>High Volt Switch to Wall Power Cord</p> <ul style="list-style-type: none"> • NEMA L6-20P Cord (NA/MEX/JP/TW) 	<p>J9738A#B2E</p>
<p>HP X332 1050W 100-240VAC to 54VDC PS</p> <ul style="list-style-type: none"> • includes 1 x c15, 1050w (Spare or Upgrade Only) 	<p>J9737A See Configuration Note:2, 3, 4</p>
<p>PDU CABLE NA/MEX/TW/JP</p> <ul style="list-style-type: none"> • C15 PDU Jumper Cord (NA/MEX/TW/JP) 	<p>J9737A#B2B</p>
<p>PDU CABLE ROW</p> <ul style="list-style-type: none"> • C15 PDU Jumper Cord (ROW) 	<p>J9737A#B2C</p>
<p>High Volt Switch to Wall Power Cord</p> <ul style="list-style-type: none"> • NEMA L6-20P Cord (NA/MEX/JP/TW) 	<p>J9737A#B2E</p>

Configuration Rules

- Note 1** This power supply is only supported on the J9726A and J9728A.
- Note 2** This power supply is only supported on the J9727A ,J9729A and J9836A.
- Note 3** Localization required on orders without #B2B ,#B2C or #B2E options.
- Note 4** If #B2E is selected Then replace Localized option with #B2E for power supply and with #B2E for switch . (Offered only in NA, Mexico,, Taiwan, and Japan)

Remarks Drop down under power supply should offer the following options and results:
Switch/Router/Power Supply to PDU Power Cord - #B2B in North America, Mexico, Taiwan, and Japan or #B2C

Configuration

ROW. (Watson Default B2B or B2C for Rack Level CTO)
 Switch/Router/Power Supply to Wall Power Cord - Localized Option (Watson Default for BTO and Box Level CTO)
 High Volt Switch/Router/Power Supply to Wall Power Cord - #B2E Option. (Offered only in North America, Mexico, Taiwan, and Japan)

Localization

X332 575W 100-240VAC to 54VDC PS, CL - Chile - English localization	J9738A#A1X
Power Cord: Quantity :1, CEI 23-50, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6980	
X332 575W 100-240VAC to 54VDC PS, US - U.S. - English localization	J9738A#ABA
Power Cord: Quantity :1, NEMA 5-15P, C15 STRAIGHT, 125 V, 15 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-0973	
X332 575 W 100-240VAC to 54VDC PS, EU - Europe - English localization	J9738A#ABB
Power Cord: Quantity :1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6811	
X332 575W 100-240VAC to 54VDC PS, AU - Australia - English localization	J9738A#ABG
Power Cord: Quantity :1, AS/NZS 3112, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8121-0834	
X332 575W 100-240VAC to 54VDC PS, BR - Brazil - Portuguese localization	J9738A#AC4
Power Cord: Quantity :1, NBR 14136 Fig13, C13 STRAIGHT, 250 V, 2.5 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-1069	
X332 575W 100-240VAC to 54VDC PS, KR - Korea - English localization	J9738A#AC6
Power Cord: Quantity :1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6811	
X332 575W 100-240VAC to 54VDC PS, UK - United Kingdom - English localization	J9738A#ACC
Power Cord: Quantity :1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6809	
X332 575W 100-240VAC to 54VDC PS, SZ - Switzerland - English localization	J9738A#ACD
Power Cord: Quantity :1, SEV 6534-2 Type 12, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6815	
X332 575W 100-240VAC to 54VDC PS, DK - Denmark - English localization	J9738A#ACE
Power Cord: Quantity :1, DK 2-5A, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6814	
X332 575W 100-240VAC to 54VDC PS, JP - Japan - English localization	J9738A#ACF
Power Cord: Quantity :1, JIS C 8303, C13 STRAIGHT, 125 V, 12 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-4753	
X332 575W 100-240VAC to 54VDC PS, IN - India - English localization	J9738A#ACJ
Power Cord: Quantity :1, IS 1293, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8121-0780	
X332 575W 100-240VAC to 54VDC PS, ZA - South Africa - English localization	J9738A#ACQ
Power Cord: Quantity :1, SABS 164, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6813	
X332 575W 100-240VAC to 54VDC PS, IL - Israel - English localization	J9738A#AKJ
Power Cord: Quantity :1, SI 32 90-DEG, C13 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-1035	
X332 575W 100-240VAC to 54VDC PS, TH - Thailand - English localization	J9738A#AKL
X332 575W 100-240VAC to 54VDC PS, CN - China - English localization	J9738A#AKM
Power Cord: Quantity :1, GB 1002, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-8707	
X332 575W 100-240VAC to 54VDC PS, TW - Taiwan - English localization	J9738A#ARB
Power Cord: Quantity :1, CNS 690 Type 2(1), C13 STRAIGHT, 125 V, 13 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-0974	

Configuration

X332 575W 100-240VAC to 54VDC PS, MY - Malaysia - English localization	J9738A#ARE
Power Cord: Quantity :1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6809	
X332 575W 100-240VAC to 54VDC PS, AR - Argentina - English localization	J9738A#ARM
Power Cord: Quantity :1, IRAM 2073, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6869	
X331 165W 100-240VAC to 12VDC PS, CL - Chile - English localization	J9739A#A1X
Power Cord: Quantity :1, CEI 23-50, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6980	
X331 165W 100-240VAC to 12VDC PS, US - U.S. - English localization	J9739A#ABA
Power Cord: Quantity :1, NEMA 5-15P, C15 STRAIGHT, 125 V, 15 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-0973	
X331 165W 100-240VAC to 12VDC PS, EU - Europe - English localization	J9739A#ABB
Power Cord: Quantity :1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6811	
X331 165W 100-240VAC to 12VDC PS, AU - Australia - English localization	J9739A#ABG
Power Cord: Quantity :1, AS/NZS 3112, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8121-0834	
X331 165W 100-240VAC to 12VDC PS, BR - Brazil - Portuguese localization	J9739A#AC4
Power Cord: Quantity :1, NBR 14136 Fig13, C13 STRAIGHT, 250 V, 2.5 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-1069	
X331 165W 100-240VAC to 12VDC PS, KR - Korea - English localization	J9739A#AC6
Power Cord: Quantity :1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6811	
X331 165W 100-240VAC to 12VDC PS, UK - United Kingdom - English localization	J9739A#ACC
Power Cord: Quantity :1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6809	
X331 165W 100-240VAC to 12VDC PS, SZ - Switzerland - English localization	J9739A#ACD
Power Cord: Quantity :1, SEV 6534-2 Type 12, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6815	
X331 165W 100-240VAC to 12VDC PS, DK - Denmark - English localization	J9739A#ACE
Power Cord: Quantity :1, DK 2-5A, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6814	
X331 165W 100-240VAC to 12VDC PS, JP - Japan - English localization	J9739A#ACF
Power Cord: Quantity :1, JIS C 8303, C13 STRAIGHT, 125 V, 12 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-4753	
X331 165W 100-240VAC to 12VDC PS, IN - India - English localization	J9739A#ACJ
Power Cord: Quantity :1, IS 1293, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8121-0780	
X331 165W 100-240VAC to 12VDC PS, ZA - South Africa - English localization	J9739A#ACQ
Power Cord: Quantity :1, SABS 164, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6813	
X331 165W 100-240VAC to 12VDC PS, IL - Israel - English localization	J9739A#AKJ
Power Cord: Quantity :1, SI 32 90-DEG, C13 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-1035	
X331 165W 100-240VAC to 12VDC PS, TH - Thailand - English localization	J9739A#AKL
Power Cord: Quantity :1, NEMA 5-15P, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8121-0668	
X331 165W 100-240VAC to 12VDC PS, CN - China - English localization	J9739A#AKM
Power Cord: Quantity :1, GB 1002, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-8707	

Configuration

X331 165W 100-240VAC to 12VDC PS, TW - Taiwan - English localization	J9739A#ARB
Power Cord: Quantity :1, CNS 690 Type 2(1), C13 STRAIGHT, 125 V, 13 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-0974	
X331 165W 100-240VAC to 12VDC PS, MY - Malaysia - English localization	J9739A#ARE
Power Cord: Quantity :1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6809	
X331 165W 100-240VAC to 12VDC PS, AR - Argentina - English localization	J9739A#ARM
Power Cord: Quantity :1, IRAM 2073, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6869	
2920-24G Switch, CL - Chile - English localization	J9726A#A1X
Power Cord: Quantity :1, CEI 23-50, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6980	
2920-24G Switch, US - U.S. - English localization	J9726A#ABA
Power Cord: Quantity :1, NEMA 5-15P, C15 STRAIGHT, 125 V, 15 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-0914	
2920-24G Switch, EU - Europe - English localization	J9726A#ABB
Power Cord: Quantity :1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6811	
2920-24G Switch, AU - Australia - English localization	J9726A#ABG
Power Cord: Quantity :1, AS/NZS 3112, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8121-0834	
2920-24G Switch, BR - Brazil - Portuguese localization	J9726A#AC4
Power Cord: Quantity :1, NBR 14136 Fig13, C13 STRAIGHT, 250 V, 2.5 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-1069	
2920-24G Switch, KR - Korea - English localization	J9726A#AC6
Power Cord: Quantity :1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6811	
2920-24G Switch, UK - United Kingdom - English localization	J9726A#ACC
Power Cord: Quantity :1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6809	
2920-24G Switch, SZ - Switzerland - English localization	J9726A#ACD
Power Cord: Quantity :1, SEV 6534-2 Type 12, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6815	
2920-24G Switch, DK - Denmark - English localization	J9726A#ACE
Power Cord: Quantity :1, DK 2-5A, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6814	
2920-24G Switch, JP - Japan - English localization	J9726A#ACF
Power Cord: Quantity :1, JIS C 8303, C13 STRAIGHT, 125 V, 12 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-4753	
2920-24G Switch, IN - India - English localization	J9726A#ACJ
Power Cord: Quantity :1, IS 1293, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8121-0780	
2920-24G Switch, ZA - South Africa - English localization	J9726A#ACQ
Power Cord: Quantity :1, SABS 164, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6813	
2920-24G Switch, IL - Israel - English localization	J9726A#AKJ
Power Cord: Quantity :1, SI 32 90-DEG, C13 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-1035	
2920-24G Switch, TH - Thailand - English localization	J9726A#AKL
Power Cord: Quantity :1, NEMA 5-15P, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8121-0668	

Configuration

2920-24G Switch, CN - China - English localization	J9726A#AKM
Power Cord: Quantity :1, GB 1002, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-8707	
2920-24G Switch, TW - Taiwan - English localization	J9726A#ARB
Power Cord: Quantity :1, CNS 690 Type 2(1), C13 STRAIGHT, 125 V, 13 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-0974	
2920-24G Switch, MY - Malaysia - English localization	J9726A#ARE
Power Cord: Quantity :1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6809	
2920-24G Switch, AR - Argentina - English localization	J9726A#ARM
Power Cord: Quantity :1, IRAM 2073, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6869	
2920-24G Switch, JmpCbl-NA/JP/TW - JmpCbl-NA/JP/TW	J9726A#B2B
Power Cord: Quantity :1, C14 STRAIGHT, C15 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-1091	
2920-24G Switch, JmpCbl-ROW - JmpCbl-ROW	J9726A#B2C
Power Cord: Quantity :1, C14 STRAIGHT, C15 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-1094	
2920-24G Switch, 220V-NA - L6-20 220V-NA	J9726A#B2E
Power Cord: Quantity :1, NEMA 6-15P, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-3996	
2920-24G-POE+ Switch, CL - Chile - English localization	J9727A#A1X
Power Cord: Quantity :1, CEI 23-50, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6980	
2920-24G-POE+ Switch, US - U.S. - English localization	J9727A#ABA
Power Cord: Quantity :1, NEMA 5-15P, C15 STRAIGHT, 125 V, 15 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-0914	
2920-24G-POE+ Switch, EU - Europe - English localization	J9727A#ABB
Power Cord: Quantity :1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6811	
2920-24G-POE+ Switch, AU - Australia - English localization	J9727A#ABG
Power Cord: Quantity :1, AS/NZS 3112, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8121-0834	
2920-24G-POE+ Switch, BR - Brazil - Portuguese localization	J9727A#AC4
Power Cord: Quantity :1, NBR 14136 Fig13, C13 STRAIGHT, 250 V, 2.5 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-1069	
2920-24G-POE+ Switch, KR - Korea - English localization	J9727A#AC6
Power Cord: Quantity :1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6811	
2920-24G-POE+ Switch, UK - United Kingdom - English localization	J9727A#ACC
Power Cord: Quantity :1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6809	
2920-24G-POE+ Switch, SZ - Switzerland - English localization	J9727A#ACD
Power Cord: Quantity :1, SEV 6534-2 Type 12, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6815	
2920-24G-POE+ Switch, DK - Denmark - English localization	J9727A#ACE
Power Cord: Quantity :1, DK 2-5A, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6814	
2920-24G-POE+ Switch, JP - Japan - English localization	J9727A#ACF
Power Cord: Quantity :1, JIS C 8303, C13 STRAIGHT, 125 V, 12 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-4753	

Configuration

2920-24G-POE+ Switch, IN - India - English localization	J9727A#ACJ
Power Cord: Quantity :1, IS 1293, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8121-0780	
Power Cord: Quantity :1, SABS 164, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6813	J9727A#ACQ
2920-24G-POE+ Switch, IL - Israel - English localization	J9727A#AKJ
Power Cord: Quantity :1, SI 32 90-DEG, C13 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-1035	
2920-24G-POE+ Switch, TH - Thailand - English localization	J9727A#AKL
Power Cord: Quantity :1, NEMA 5-15P, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8121-0668	
2920-24G-POE+ Switch, CN - China - English localization	J9727A#AKM
Power Cord: Quantity :1, GB 1002, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-8707	
2920-24G-POE+ Switch, TW - Taiwan - English localization	J9727A#ARB
Power Cord: Quantity :1, CNS 690 Type 2(1), C13 STRAIGHT, 125 V, 13 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-0974	
2920-24G-POE+ Switch, MY - Malaysia - English localization	J9727A#ARE
Power Cord: Quantity :1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6809	
2920-24G-POE+ Switch, AR - Argentina - English localization	J9727A#ARM
Power Cord: Quantity :1, IRAM 2073, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6869	
2920-24G-POE+ Switch, JmpCbl-NA/JP/TW - JmpCbl-NA/JP/TW	J9727A#B2B
Power Cord: Quantity :1, C14 STRAIGHT, C15 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-1091	
2920-24G-POE+ Switch, JmpCbl-ROW - JmpCbl-ROW	J9727A#B2C
Power Cord: Quantity :1, C14 STRAIGHT, C15 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-1094	
2920-24G-POE+ Switch, 220V-NA - L6-20 220V-NA	J9727A#B2E
Power Cord: Quantity :1, NEMA 6-15P, C15 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #: 8120-5338	
2920-48G Switch, CL - Chile - English localization	J9728A#A1X
Power Cord: Quantity :1, CEI 23-50, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6980	
2920-48G Switch, US - U.S. - English localization	J9728A#ABA
Power Cord: Quantity :1, NEMA 5-15P, C15 STRAIGHT, 125 V, 15 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-0914	
2920-48G Switch, EU - Europe - English localization	J9728A#ABB
Power Cord: Quantity :1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6811	
2920-48G Switch, AU - Australia - English localization	J9728A#ABG
Power Cord: Quantity :1, AS/NZS 3112, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8121-0834	
2920-48G Switch, BR - Brazil - Portuguese localization	J9728A#AC4
Power Cord: Quantity :1, NBR 14136 Fig13, C13 STRAIGHT, 250 V, 2.5 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-1069	
2920-48G Switch, KR - Korea - English localization	J9728A#AC6
Power Cord: Quantity :1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6811	
2920-48G Switch, UK - United Kingdom - English localization	J9728A#ACC

Configuration

Power Cord: Quantity :1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6809	
2920-48G Switch, SZ - Switzerland - English localization	J9728A#ACD
Power Cord: Quantity :1, SEV 6534-2 Type 12, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6815	
2920-48G Switch, DK - Denmark - English localization	J9728A#ACE
Power Cord: Quantity :1, DK 2-5A, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6814	
2920-48G Switch, JP - Japan - English localization	J9728A#ACF
Power Cord: Quantity :1, JIS C 8303, C13 STRAIGHT, 125 V, 12 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-4753	
2920-48G Switch, IN - India - English localization	J9728A#ACJ
Power Cord: Quantity :1, IS 1293, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8121-0780	
2920-48G Switch, ZA - South Africa - English localization	J9728A#ACQ
Power Cord: Quantity :1, SABS 164, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6813	
2920-48G Switch, IL - Israel - English localization	J9728A#AKJ
Power Cord: Quantity :1, SI 32 90-DEG, C13 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-1035	
2920-48G Switch, TH - Thailand - English localization	J9728A#AKL
Power Cord: Quantity :1, NEMA 5-15P, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8121-0668	
2920-48G Switch, CN - China - English localization	J9728A#AKM
Power Cord: Quantity :1, GB 1002, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-8707	
2920-48G Switch, TW - Taiwan - English localization	J9728A#ARB
Power Cord: Quantity :1, CNS 690 Type 2(1), C13 STRAIGHT, 125 V, 13 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-0974	
2920-48G Switch, MY - Malaysia - English localization	J9728A#ARE
Power Cord: Quantity :1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6809	
2920-48G Switch, AR - Argentina - English localization	J9728A#ARM
Power Cord: Quantity :1, IRAM 2073, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6869	
2920-48G Switch, JmpCbl-NA/JP/TW - JmpCbl-NA/JP/TW	J9728A#B2B
Power Cord: Quantity :1, C14 STRAIGHT, C15 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-1091	
2920-48G Switch, JmpCbl-ROW - JmpCbl-ROW	J9728A#B2C
Power Cord: Quantity :1, C14 STRAIGHT, C15 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-1094	
2920-48G Switch, 220V-NA - L6-20 220V-NA	J9728A#B2E
Power Cord: Quantity :1, NEMA 6-15P, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-3996	
2920-48G-POE+ Switch, CL - Chile - English localization	J9729A#A1X
Power Cord: Quantity :1, CEI 23-50, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6980	
2920-48G-POE+ Switch, US - U.S. - English localization	J9729A#ABA
Power Cord: Quantity :1, NEMA 5-15P, C15 STRAIGHT, 125 V, 15 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-0914	
2920-48G-POE+ Switch, EU - Europe - English localization	J9729A#ABB

Configuration

Power Cord: Quantity :1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6811	
2920-48G-POE+ Switch, AU - Australia - English localization	J9729A#ABG
Power Cord: Quantity :1, AS/NZS 3112, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8121-0834	
2920-48G-POE+ Switch, BR - Brazil - Portuguese localization	J9729A#AC4
Power Cord: Quantity :1, NBR 14136 Fig13, C13 STRAIGHT, 250 V, 2.5 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-1069	
2920-48G-POE+ Switch, KR - Korea - English localization	J9729A#AC6
Power Cord: Quantity :1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6811	
2920-48G-POE+ Switch, UK - United Kingdom - English localization	J9729A#ACC
Power Cord: Quantity :1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6809	
2920-48G-POE+ Switch, SZ - Switzerland - English localization	J9729A#ACD
Power Cord: Quantity :1, SEV 6534-2 Type 12, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6815	
2920-48G-POE+ Switch, DK - Denmark - English localization	J9729A#ACE
Power Cord: Quantity :1, DK 2-5A, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6814	
2920-48G-POE+ Switch, JP - Japan - English localization	J9729A#ACF
Power Cord: Quantity :1, JIS C 8303, C13 STRAIGHT, 125 V, 12 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-4753	
2920-48G-POE+ Switch, IN - India - English localization	J9729A#ACJ
Power Cord: Quantity :1, IS 1293, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8121-0780	
2920-48G-POE+ Switch, ZA - South Africa - English localization	J9729A#ACQ
Power Cord: Quantity :1, SABS 164, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #: 8120-6813	
2920-48G-POE+ Switch, IL - Israel - English localization	J9729A#AKJ
Power Cord: Quantity :1, SI 32 90-DEG, C13 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-1035	
2920-48G-POE+ Switch, TH - Thailand - English localization	J9729A#AKL
Power Cord: Quantity :1, NEMA 5-15P, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8121-0668	
2920-48G-POE+ Switch, CN - China - English localization	J9729A#AKM
Power Cord: Quantity :1, GB 1002, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-8707	
2920-48G-POE+ Switch, TW - Taiwan - English localization	J9729A#ARB
Power Cord: Quantity :1, CNS 690 Type 2(1), C13 STRAIGHT, 125 V, 13 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-0974	
Power Cord: Quantity :1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6809	
2920-48G-POE+ Switch, AR - Argentina - English localization	J9729A#ARM
Power Cord: Quantity :1, IRAM 2073, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #: 8120-6869	
2920-48G-POE+ Switch, JmpCbl-NA/JP/TW - JmpCbl-NA/JP/TW	J9729A#B2B
Power Cord: Quantity :1, C14 STRAIGHT, C15 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-1091	
2920-48G-POE+ Switch, JmpCbl-ROW - JmpCbl-ROW	J9729A#B2C
Power Cord: Quantity :1, C14 STRAIGHT, C15 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #: 8121-1094	

Configuration

2920-48G-POE+ Switch, 220V-NA - L6-20 220V-NA

J9729A#B2E

Power Cord: Quantity :1, NEMA 6-15P, C15 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet
 ,Part Store #: 8120-5338

Enter the following menu selections as integrated to the CTO Model X server above if order is factory built

Networking

Ethernet Modules

System (std 0 // max 2) User Selection (min 0 // max 2) per enclosure

HP 2920 2-port 10GbE SFP+ Module

J9731A

- min=0 \ max=2 SFP + Transceivers

See Configuration
 Note:1

HP 2920 2-port 10GBASE-T Module

J9732A

Configuration Rules

Note 1

The following Transceivers install into this Module (Use #0D1 or #B01 quoted to switch if switch is CTO) - if applicable:

HP X121 1G SFP LC LH Transceiver	J4860C
HP X121 1G SFP LC LX Transceiver	J4859C
HP X121 1G SFP LC SX Transceiver	J4858C
HP X122 1G SFP LC BX-D Transceiver	J9142B
HP X122 1G SFP LC BX-U Transceiver	J9143B
HP X132 10G SFP+ LC SR Transceiver	J9150A
HP X132 10G SFP+ LC ER Transceiver	J9153A
HP X132 10G SFP+ LC LR Transceiver	J9151A
HP X132 10G SFP+ LC LRM Transceiver	J9152A
HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A
HP 10G X244 XFP to SFP+ 3m Direct Attach Copper Cable	J9301A
HP 10G X244 XFP to SFP+ 5m Direct Attach Copper Cable	J9302A
HP X242 10G SFP+ to SFP+ 10m Direct Attach Copper Cable	J9286B
HP X242 10G SFP+ to SFP+ 15m Direct Attach Copper Cable	J9287B

Stacking Modules

System (std 0 // max 1) User Selection (min 0 // max 1) per enclosure

HP 2920 2-port Stacking Module

J9733A

Transceivers

SFP Transceivers

Configuration

HP X121 1G SFP LC LH Transceiver	J4860C
HP X121 1G SFP LC LX Transceiver	J4859C
HP X121 1G SFP LC SX Transceiver	J4858C
HP X122 1G SFP LC BX-D Transceiver	J9142B
HP X122 1G SFP LC BX-U Transceiver	J9143B
HP X121 1G SFP RJ45 T Transceiver	J8177C
HP X111 100M SFP LC FX Transceiver	J9054C
HP X112 100M SFP LC BX-D Transceiver	J9099B
HP X112 100M SFP LC BX-U Transceiver	J9100B

SFP+ Transceivers

HP X132 10G SFP+ LC ER Transceiver	J9153A
HP X132 10G SFP+ LC SR Transceiver	J9150A
HP X132 10G SFP+ LC LR Transceiver	J9151A
HP X132 10G SFP+ LC LRM Transceiver	J9152A
HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B#B01
HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B#B01
HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B#B01
HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A#B01
HP 10G X244 XFP to SFP+ 3m Direct Attach Copper Cable	J9301A#B01
HP 10G X244 XFP to SFP+ 5m Direct Attach Copper Cable	J9302A#B01
HP X242 10G SFP+ to SFP+ 10m Direct Attach Copper Cable	J9286B
HP X242 10G SFP+ to SFP+ 15m Direct Attach Copper Cable	J9287B

Cables

Multi-Mode Cables

HP .5m Multi-mode OM3 LC/LC FC Cable	AJ833A
HP 1m Multi-mode OM3 LC/LC FC Cable	AJ834A
HP 2 m Multimode OM3 LC/LC FC Cable	AJ835A
HP 5 m Multimode OM3 LC/LC FC Cable	AJ836A
HP 15 m Multimode OM3 LC/LC FC Cable	AJ837A
HP 30 m Multimode OM3 LC/LC FC Cable	AJ838A
HP 50 m Multimode OM3 LC/LC FC Cable	AJ839A
HP Premier Flex LC/LC OM4 2f 1m Cbl	QK732A
HP Premier Flex LC/LC OM4 2f 2m Cbl	QK733A
HP Premier Flex LC/LC OM4 2f 5m Cbl	QK734A
HP Premier Flex LC/LC OM4 2f 15m Cbl	QK735A
HP Premier Flex LC/LC OM4 2f 30m Cbl	QK736A
HP Premier Flex LC/LC OM4 2f 50m Cbl	QK737A

Stacking Cables

HP 2920 0.5m Stacking Cable	J9734A
HP 2920 1.0m Stacking Cable	J9735A
HP 2920 3.0m Stacking Cable	J9736A

Configuration

Switch Enclosure Options

Mounting Kit

HP X410 1U Univ 4-post Rack Mnt Kit

J9583A
See Configuration
Note:1

Configuration Rules

Note 1 If this Mounting Kit is order with #0D1 then it integrates to the HP Universal Rack. (not the switch)

External/Redundant Power Supplies

HP 640 External/Redundant Power Supply

- Height = 1U
- includes 1 x c13, 800w

J9805A
See Configuration
Note:1, 3, 4, 5

HP X331 165W 100-240VAC to 12VDC PS

- includes 1 x c15, 165w

J9739A
See Configuration
Note:2

PDU CABLE NA/MEX/TW/JP

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

J9739A#B2B

PDU CABLE ROW

- C15 PDU Jumper Cord (ROW)

J9739A#B2C

High Volt Switch to Wall Power Cord

- NEMA L6-20P Cord (NA/MEX/JP/TW)

J9739A#B2E

HP X332 575W 100-240VAC to 54VDC PS

- includes 1 x c15, 575w

J9738A
See Configuration
Note:2

PDU CABLE NA/MEX/TW/JP

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

J9738A#B2B

PDU CABLE ROW

- C15 PDU Jumper Cord (ROW)

J9738A#B2C

Configuration

High Volt Switch to Wall Power Cord	J9738A#B2E
<ul style="list-style-type: none"> NEMA L6-20P Cord (NA/MEX/JP/TW) 	
HP X332 1050W 100-240VAC to 54VDC PS	J9737A
<ul style="list-style-type: none"> includes 1 x c15, 1050w 	See Configuration Note:2
PDU CABLE NA/MEX/TW/JP	J9737A#B2B
<ul style="list-style-type: none"> C15 PDU Jumper Cord (NA/MEX/TW/JP) 	
PDU CABLE ROW	J9737A#B2C
<ul style="list-style-type: none"> C15 PDU Jumper Cord (ROW) 	
High Volt Switch to Wall Power Cord	J9737A#B2E
<ul style="list-style-type: none"> NEMA L6-20P Cord (NA/MEX/JP/TW) 	

Configuration Rules

- Note 1** Can take up to Three internal power supplies. (J9737A, J9738A and J9739A) System (std 0 // max 3) User Selection (min 1 // max 3) per Power Supply enclosure. Mixing or matching of the 3 different power supplies is supported in the Chassis.
- Note 2** Localization required on orders without #B2B, #B2C or #B2E options.
- Note 3** No Localization. Localization is on the internal Power supplies.
- Note 4** Up to eight (8) Switch Chassis can be connected to this External Redundant Power Source.
 Power supply slot 1 supports up to 4 cables
 Power supply slot 2 supports up to 2 cables
 Power supply slot 3 supports up to 2 cables
 Supported on J9726A, J9727A, J9728A, J9729A and J9836A switches only.
- Note 5** If this RPS/EPS is installed in HP Universal Racks, Then the J9583A#001 is required
- Remarks:** For J9726A, and J9728A, the power supply in J9805A must be J9739A (165W).
 For J9727A and J9729A, the power supply in J9805A must be J9737A (1050W) or J9738A (575W).
 For J9836A, the power supply in J9805A must be J9737A (1050W).
 Drop down under power supply should offer the following options and results:
 Switch/Router/Power Supply to PDU Power Cord - #B2B in North America, Mexico, Taiwan, and Japan or #B2C ROW. (Watson Default B2B or B2C for Rack Level CTO)
 Switch/Router/Power Supply to Wall Power Cord - Localized Option (Watson Default for BTO and Box Level CTO)
 High Volt Switch/Router/Power Supply to Wall Power Cord - #B2E Option. (Offered only in North America, Mexico, Taiwan, and Japan)

External/Redundant Power Cables



Configuration

HP 640 EPS/RPS 1m Cable

J9806A
See Configuration
Note:1

Configuration Rules

Note 1 1, 2, 3 or 4 cables per AC Power Supply used with J9805A supported. System (std 0 // max 8)
User Selection (min 1 // max 8) per Power Supply enclosure.
Power supply slot 1 supports up to 4 cables
Power supply slot 2 supports up to 2 cables
Power supply slot 3 supports up to 2 cables

Technical Specifications

HP 2920-24G Switch (J9726A)

I/O ports and slots	20 RJ-45 autosensing 10/100/1000 ports; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) 4 RJ-45 dual-personality 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) 1 dual-personality (RJ-45 or USB micro-B) 1 USB 1.1 1 RJ-45 out-of-band management port 2 module slots 1 stacking module slot
Power supplies	1 power supply slot 1 minimum power supply required includes: 1 x J9739A (HP X331 165W 100-240VAC to 12VDC Modular Power Supply)
Physical characteristics	Dimensions 17.42(w) x 13.23(d) x 1.75(h) in (44.25 x 33.6 x 4.45 cm) (1U height) Weight 11.57 lb (5.25 kg)
Memory and processor	Tri Core ARM1176 @ 625 MHz, 512 MB SDRAM, 1 GB flash MB; packet buffer size: 11.25 MB (6.75 MB dynamic egress + 4.5 MB ingress)
Performance	100 Mb Latency < 9.0 μ s (FIFO 64-byte packets) 1000 Mb Latency < 3.3 μ s (FIFO 64-byte packets) 10 Gbps Latency < 3.3 μ s (FIFO 64-byte packets) Throughput 95.2 million pps Switching capacity 128 Gb/s Routing table size 2048 entries (IPv4), 256 entries (IPv6) MAC address table size 16000 entries
Environment	Operating temperature 32°F to 131°F (0°C to 55°C) Operating relative humidity 15% to 95%, noncondensing Non-operating/Storage temperature -40°F to 158°F (-40°C to 70°C) Non-operating/Storage relative humidity 15% to 95%, noncondensing Altitude up to 10,000 ft (3 km) Acoustic Power: 57 dB, Pressure: 41.4 dB
Electrical characteristics	Frequency 50/60 Hz Maximum heat dissipation 198 BTU/hr (208.89 kJ/hr) AC voltage 100-240 VAC Maximum power rating 58 W Idle power 26 W
Safety	CE Labeled; EN 60825-1 Safety of Laser Products-Part 1; FCC Part 15, Subpart B; GOST; EU RoHS Compliant; EN 55022 Class A; EN 55024: 1998; C-Tick; ICES-003, Class A; VCCI Class A; IEC 60950-1 :Second Edition ; IEC 60825-1; EN62479:2010; CSA C22.2 No. 60950-1-07 2nd Edition; EN 60950-1:2006+A11:2009+A1:2010+A12:2011; IEC 60950-1 (ed.2): am1
Emissions	FCC part 15 Class A; VCCI Class A; EN 55022/CISPR 22 Class A
Immunity	EN EN 55024, CISPR 24 ESD IEC 61000-4-2 Radiated IEC 61000-4-3 EFT/Burst IEC 61000-4-4

Technical Specifications

	Surge	IEC 61000-4-5
	Conducted	IEC 61000-4-6
	Power frequency magnetic field	IEC 61000-4-8
	Voltage dips and interruptions	IEC 61000-4-11
	Harmonics	IEC 61000-3-2
	Flicker	IEC 61000-3-3
Management	HP PCM+; IMC - Intelligent Management Center; command-line interface; Web browser; configuration menu; out-of-band management (RJ-45 Ethernet); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; out-of-band management (serial RS-232C or Micro USB)	
Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP 2920-24G-PoE+ Switch (J9727A)

I/O ports and slots	20 RJ-45 autosensing 10/100/1000 PoE+ ports; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+)	
	4 RJ-45 dual-personality 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+)	
	1 dual-personality (RJ-45 or USB micro-B)	
	1 USB 1.1	
	1 RJ-45 out-of-band management port	
	2 module slots	
	1 stacking module slot	
Power supplies	1 power supply slot	
	1 minimum power supply required	
	includes: 1 x J9738A (HP X332 575W 100-240VAC to 54VDC Modular Power Supply)	
Physical characteristics	Dimensions	17.42(w) x 13.23(d) x 1.75(h) in (44.25 x 33.6 x 4.45 cm) (1U height)
	Weight	12.04 lb (5.46 kg)
Memory and processor	Tri Core ARM1176 @ 625 MHz, 512 MB SDRAM, 1 GB flash; packet buffer size: 11.25 MB (6.5 MB dynamic egress + 4.5 MB ingress)	
Performance	100 Mb Latency	< 9.0 μ s (FIFO 64-byte packets)
	1000 Mb Latency	< 3.3 μ s (FIFO 64-byte packets)
	10 Gbps Latency	< 3.3 μ s (FIFO 64-byte packets)
	Throughput	95.2 million pps
	Switching capacity	128 Gb/s
	Routing table size	2048 entries (IPv4), 256 entries (IPv6)
	MAC address table size	16000 entries
Environment	Operating temperature	32°F to 131°F (0°C to 55°C)
	Operating relative humidity	15% to 95%, noncondensing
	Non-operating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Non-operating/Storage relative humidity	15% to 95%, noncondensing
	Altitude	up to 10,000 ft (3 km)

Technical Specifications

	Acoustic	Power: 61 dB, Pressure: 44.9 dB
Electrical characteristics	Frequency	50/60 Hz
	Maximum heat dissipation	358 BTU/hr (377.69 kJ/hr)
	AC voltage	100-240 VAC
	Maximum power rating	475 W
	Idle power	42 W
	PoE power	370 W
Safety	CE Labeled; EN 60825-1 Safety of Laser Products-Part 1; FCC Part 15, Subpart B; GOST; EU RoHS Compliant; EN 55022 Class A; EN 55024: 1998; C-Tick; ICES-003, Class A; VCCI Class A; IEC 60950-1 :Second Edition ; IEC 60825-1; EN62479:2010; CSA C22.2 No. 60950-1-07 2nd Edition; EN 60950-1:2006+A11:2009+A12:2010+A12:2011; IEC 60950-1 (ed.2): am1	
Emissions	FCC part 15 Class A; VCCI Class A; EN 55022/CISPR 22 Class A	
Immunity	EN	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3
	EFT/Burst	IEC 61000-4-4
	Surge	IEC 61000-4-5
	Conducted	IEC 61000-4-6
	Power frequency magnetic field	IEC 61000-4-8
	Voltage dips and interruptions	IEC 61000-4-11
	Harmonics	IEC 61000-3-2
	Flicker	IEC 61000-3-3
Management	HP PCM+; IMC - Intelligent Management Center; command-line interface; Web browser; configuration menu; out-of-band management (RJ-45 Ethernet); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; out-of-band management (serial RS-232C or Micro USB)	
Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP 2920-48G Switch (J9728A)

I/O ports and slots	44 RJ-45 autosensing 10/100/1000 ports; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T)	
	4 RJ-45 dual-personality 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T)	
	1 dual-personality (RJ-45 or USB micro-B)	
	1 USB 1.1	
	1 RJ-45 out-of-band management port	
	2 module slots	
Power supplies	1 stacking module slot	
	1 power supply slot	
	1 minimum power supply required includes: 1 x J9739A (HP X331 165W 100-240VAC to 12VDC Modular Power Supply)	
Physical characteristics	Dimensions	17.42(w) x 13.23(d) x 1.75(h) in (44.25 x 33.6 x 4.45 cm) (1U height)
	Weight	11.95 lb (5.42 kg)
Memory and processor	Tri Core ARM1176 @ 625 MHz, 512 MB SDRAM, 1 GB flash; packet buffer size: 11.25 MB (6.75 MB dynamic egress + 4.5 MB ingress)	

Technical Specifications

Performance	100 Mb Latency	< 9.0 μ s (FIFO 64-byte packets)
	1000 Mb Latency	< 3.3 μ s (FIFO 64-byte packets)
	10 Gbps Latency	< 3.2 μ s (FIFO 64-byte packets)
	Throughput	130.9 million pps
	Switching capacity	176 Gb/s
	Routing table size	2048 entries (IPv4), 256 entries (IPv6)
	MAC address table size	16000 entries
Environment	Operating temperature	32°F to 131°F (0°C to 55°C)
	Operating relative humidity	15% to 95%, noncondensing
	Non-operating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Non-operating/Storage relative humidity	15% to 95%, noncondensing
	Altitude	up to 10,000 ft (3 km)
Electrical characteristics	Acoustic	Power: 57 dB, Pressure: 41.8 dB
	Frequency	50/60 Hz
	Maximum heat dissipation	239 BTU/hr (252.15 kJ/hr)
	AC voltage	100-240 VAC
	Maximum power rating	70 W
	Idle power	27 W
Safety	CE Labeled; EN 60825-1 Safety of Laser Products-Part 1; FCC Part 15, Subpart B; GOST; EU RoHS Compliant; EN 55022 Class A; EN 55024: 1998; C-Tick; ICES-003, Class A; VCCI Class A; IEC 60825-1; IEC 60950-1, Second Edition; EN62479:2010; CSA C22.2 No. 60950-1-07 2nd Edition; EN 60950-1:2006+A11:2009+A1:2010+A12:2011; IEC 60950-1 (ed.2): am1	
Emissions	FCC part 15 Class A; VCCI Class A; EN 55022/CISPR 22 Class A	
Immunity	EN	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3
	EFT/Burst	IEC 61000-4-4
	Surge	IEC 61000-4-5
	Conducted	IEC 61000-4-6
	Power frequency magnetic field	IEC 61000-4-8
	Voltage dips and interruptions	IEC 61000-4-11
Management	Harmonics	IEC 61000-3-2
	Flicker	IEC 61000-3-3
Management	HP PCM+; IMC - Intelligent Management Center; command-line interface; Web browser; configuration menu; out-of-band management (RJ-45 Ethernet); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; out-of-band management (serial RS-232C or Micro USB)	
Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP 2920-48G-PoE+ Switch (J9729A)

I/O ports and slots 44 RJ-45 autosensing 10/100/1000 PoE+ ports; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-

Technical Specifications

T: full only (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+)
 4 RJ-45 dual-personality 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+)
 1 dual-personality (RJ-45 or USB micro-B)
 1 USB 1.1
 1 RJ-45 out-of-band management port
 2 module slots
 1 stacking module slot

Power supplies

1 power supply slot
 1 minimum power supply required
 includes: 1 x J9738A (HP X332 575W 100-240VAC to 54VDC Modular Power Supply)

Physical characteristics

Dimensions 17.42(w) x 13.23(d) x 1.73(h) in (44.25 x 33.6 x 4.39 cm) (1U height)

Weight 12.57 lb (5.7 kg)

Memory and processor

Tri Core ARM1176 @ 625 MHz, 512 MB SDRAM, 1 GB flash; packet buffer size: 11.25 MB (6.75 MB dynamic egress + 4.5 MB ingress)

Performance

100 Mb Latency < 9.0 μ s (FIFO 64-byte packets)
1000 Mb Latency < 3.2 μ s (FIFO 64-byte packets)
10 Gbps Latency < 3.2 μ s (FIFO 64-byte packets)
Throughput 130.9 million pps
Switching capacity 176 Gb/s
Routing table size 2048 entries (IPv4), 256 entries (IPv6)
MAC address table size 16000 entries

Environment

Operating temperature 32°F to 131°F (0°C to 55°C)
Operating relative humidity 15% to 95%, noncondensing
Non-operating/Storage temperature -40°F to 158°F (-40°C to 70°C)
Non-operating/Storage relative humidity 15% to 95%, noncondensing
Altitude up to 10,000 ft (3 km)

Electrical characteristics

Acoustic Power: 62 dB, Pressure: 45.2 dB
Frequency 50/60 Hz
Maximum heat dissipation 399 BTU/hr (420.95 kJ/hr)
AC voltage 100-240 VAC
Maximum power rating 487 W
Idle power 46 W
PoE power 370 W

Safety

CE Labeled; EN 60825-1 Safety of Laser Products-Part 1; FCC Part 15, Subpart B; GOST; EU RoHS Compliant; EN 55022 Class A; EN 55024: 1998; C-Tick; ICES-003, Class A; VCCI Class A; IEC 60825-1; IEC 60950-1, Second Edition; EN62479:2010; CSA C22.2 No. 60950-1-07 2nd Edition; EN 60950-1:2006+A11:2009+A1:2010+A12:2011; IEC 60950-1 (ed.2): am1

Emissions

FCC part 15 Class A; VCCI Class A; EN 55022/CISPR 22 Class A

Immunity

EN EN 55024, CISPR 24
ESD IEC 61000-4-2
Radiated IEC 61000-4-3
EFT/Burst IEC 61000-4-4

Technical Specifications

	Surge	IEC 61000-4-5
	Conducted	IEC 61000-4-6
	Power frequency magnetic field	IEC 61000-4-8
	Voltage dips and interruptions	IEC 61000-4-11
	Harmonics	IEC 61000-3-2
	Flicker	IEC 61000-3-3
Management	HP PCM+; IMC - Intelligent Management Center; command-line interface; Web browser; configuration menu; out-of-band management (RJ-45 Ethernet); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; out-of-band management (serial RS-232C or Micro USB)	
Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP 2920-48G-PoE+ 740W Switch (J9836A)

I/O ports and slots	44 RJ-45 autosensing 10/100/1000 PoE+ ports; Duplex: 10BASE-T/100BASE-TX: half or full; 100BASE-T: full only (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 100BASE-T, IEEE 802.3at PoE+) 4 RJ-45 dual-personality 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 100BASE-T, IEEE 802.3at PoE+) 1 dual-personality (RJ-45 or USB micro-B) 1 USB 1.1 1 RJ-45 out-of-band management port 2 module slots 1 stacking module slot	
Power supplies	1 power supply slot 1 minimum power supply required includes: 1 x J9737A (HP X332 1050W 110-240VAC to 54VDC Power Supply)	
Physical characteristics	Dimensions	17.42(w) x 13.23(d) x 1.73(h) in (44.25 x 33.6 x 4.39 cm) (1U height)
	Weight	12.86 lb (5.83 kg)
Memory and processor	Tri Core ARM1176 @ 625 MHz, 512 MB SDRAM, 1 GB flash; packet buffer size: 11.25 MB (6.75 MB dynamic egress + 4.5 MB ingress)	
Performance	100 Mb Latency	< 9.0 μ s (FIFO 64-byte packets)
	1000 Mb Latency	< 3.2 μ s (FIFO 64-byte packets)
	10 Gbps Latency	< 3.2 μ s (FIFO 64-byte packets)
	Throughput	130.9 million pps
	Switching capacity	176 Gb/s
	Routing table size	2048 entries (IPv4), 256 entries (IPv6)
	MAC address table size	16000 entries
Environment	Operating temperature	32°F to 131°F (0°C to 55°C)
	Operating relative humidity	15% to 95%, noncondensing
	Non-operating/ Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Non-operating/ Storage relative humidity	15% to 95%, noncondensing
	Altitude	up to 10,000 ft (3 km)

Technical Specifications

	Acoustic	Power: -53 dB, Pressure: -38.3 dB
Electrical characteristics	Frequency	50/60 Hz
	Maximum heat dissipation	399 BTU/hr (420.95 kJ/hr)
	AC voltage	100-240 VAC
	Maximum power rating	487 W
	Idle power	46 W
	PoE power	740 W
Safety	CE Labeled; EN 60825-1 Safety of Laser Products-Part 1; FCC Part 15, Subpart B; GOST; EU RoHS Compliant; EN 55022 Class A; EN 55024: 1998; C-Tick; ICES-003, Class A; VCCI Class A; IEC 60950-1 :Second Edition ; IEC 60825-1; EN62479:2010; CSA C22.2 No. 60950-1-07 2nd Edition; EN 60950-1:2006+A11:2009+A1:2010+A12:2011; IEC 60950-1 (ed.2): am1	
Emissions	FCC part 15 Class A; VCCI Class A; EN 55022/CISPR 22 Class A	
Immunity	EN	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3
	EFT/Burst	IEC 61000-4-4
	Surge	IEC 61000-4-5
	Conducted	IEC 61000-4-6
	Power frequency magnetic field	IEC 61000-4-8
	Voltage dips and interruptions	IEC 61000-4-11
	Harmonics	IEC 61000-3-2
Flicker	IEC 61000-3-3	
Management	HP PCM+; IMC - Intelligent Management Center; command-line interface; Web browser; configuration menu; out-of-band management (RJ-45 Ethernet); SNMP Manager; Telnet; RMON1; FTP; in-line and out-of-band; out-of-band management (serial RS-232C or Micro USB)	
Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

Standards and protocols (applies to all products in series)	Denial of service protection
	CPU DoS Protection
	Device management
	RFC 1155 Structure and Mgmt Information (SMIv1)
	RFC 1157 SNMPv1/v2c
	RFC 1591 DNS (client)
	RFC 1901 (Community based SNMPv2)
	RFC 1901-1907 SNMPv2c, SMIv2 and Revised MIB-II
	RFC 1908 (SNMP v1/2 Coexistence)
	RFC 2578-2580 SMIv2
	RFC 2579 (SMIv2 Text Conventions)
	RFC 2580 (SMIv2 Conformance)
	RFC 2819 (RMON groups Alarm, Event, History and Statistics only)
	RFC 3416 (SNMP Protocol Operations v2)
	RFC 3417 (SNMP Transport Mappings)
HTML and telnet management	

Technical Specifications

- HTTP, SSHv1, and Telnet
- Multiple Configuration Files
- Multiple Software Images
- SNMP v3 and RMON RFC support
- SSHv1/SSHv2 Secure Shell
- TACACS/TACACS+
- Web UI

General protocols

- IEEE 802.1AX-2008 Link Aggregation
- IEEE 802.1D MAC Bridges
- IEEE 802.1p Priority
- IEEE 802.1Q VLANs
- IEEE 802.1s Multiple Spanning Trees
- IEEE 802.1v VLAN classification by Protocol and Port
- IEEE 802.1w Rapid Reconfiguration of Spanning Tree
- IEEE 802.3ab 1000BASE-T
- IEEE 802.3ad Link Aggregation Control Protocol (LACP)
- IEEE 802.3af Power over Ethernet
- IEEE 802.3at PoE+
- IEEE 802.3az Energy Efficient Ethernet
- IEEE 802.3x Flow Control
- RFC 768 UDP
- RFC 783 TFTP Protocol (revision 2)
- RFC 792 ICMP
- RFC 793 TCP
- RFC 826 ARP
- RFC 854 TELNET
- RFC 868 Time Protocol
- RFC 951 BOOTP
- RFC 1058 RIPv1
- RFC 1256 ICMP Router Discovery Protocol (IRDP)
- RFC 1350 TFTP Protocol (revision 2)
- RFC 1519 CIDR
- RFC 1542 BOOTP Extensions
- RFC 1918 Address Allocation for Private Internet
- RFC 2030 Simple Network Time Protocol (SNTP) v4
- RFC 2131 DHCP
- RFC 2236 IGMP Snooping
- RFC 2453 RIPv2
- RFC 2865 Remote Authentication Dial In User Service (RADIUS)
- RFC 2866 RADIUS Accounting
- RFC 3046 DHCP Relay Agent Information Option
- RFC 3411 An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
- RFC 3412 Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
- RFC 3413 Simple Network Management Protocol (SNMP) Applications
- RFC 3414 User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
- RFC 3415 View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
- RFC 3416 Protocol Operations for SNMP
- RFC 3417 Transport Mappings for the Simple Network Management Protocol (SNMP)
- RFC 3418 Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
- RFC 3576 Ext to RADIUS (CoA only)

Technical Specifications

RFC 4541 Considerations for Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) Snooping Switches
RFC 4675 RADIUS VLAN & Priority
RFC 4861 Neighbor Discovery for IP version 6 (IPv6)
RFC 4862 IPv6 Stateless Address Autoconfiguration
UDLD (Uni-directional Link Detection)

IP multicast

RFC 1112 IGMP
RFC 2236 IGMPv2
RFC 2710 Multicast Listener Discovery (MLD) for IPv6
RFC 3376 IGMPv3 (host joins only)
RFC 4541 Considerations for Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) Snooping Switches

IPv6

RFC 1981 IPv6 Path MTU Discovery
RFC 2460 IPv6 Specification
RFC 2464 Transmission of IPv6 over Ethernet Networks
RFC 2710 Multicast Listener Discovery (MLD) for IPv6
RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations (Ping only)
RFC 2925 Remote Operations MIB (Ping only)
RFC 3019 MLDv1 MIB
RFC 3315 DHCPv6 (client and relay)
RFC 3484 Default Address Selection for IPv6
RFC 3513 IPv6 Addressing Architecture
RFC 3596 DNS Extension for IPv6
RFC 3810 MLDv2 for IPv6
RFC 4022 MIB for TCP
RFC 4113 MIB for UDP
RFC 4251 SSHv6 Architecture
RFC 4252 SSHv6 Authentication
RFC 4253 SSHv6 Transport Layer
RFC 4254 SSHv6 Connection
RFC 4291 IP Version 6 Addressing Architecture
RFC 4293 MIB for IP
RFC 4419 Key Exchange for SSH
RFC 4443 ICMPv6
RFC 4541 IGMP & MLD Snooping Switch
RFC 4861 IPv6 Neighbor Discovery
RFC 4862 IPv6 Stateless Address Auto-configuration
RFC 5095 Deprecation of Type 0 Routing Headers in IPv6

MIBs

IEEE 802.1ap (MSTP and STP MIB's only)
RFC 1155 Structure & ID of Mgmt Info for TCP/IP Internets
RFC 1156 (TCP/IP MIB)
RFC 1157 A Simple Network Management Protocol (SNMP)
RFC 1213 MIB II
RFC 1493 Bridge MIB
RFC 1724 RIPv2 MIB
RFC 2021 RMONv2 MIB
RFC 2578 Structure of Management Information Version 2 (SMIPv2)

Technical Specifications

RFC 2579 Textual Conventions for SMlv2
RFC 2580 Conformance Statements for SMlv2
RFC 2613 SMON MIB
RFC 2618 RADIUS Client MIB
RFC 2620 RADIUS Accounting MIB
RFC 2665 Ethernet-Like-MIB
RFC 2668 802.3 MAU MIB
RFC 2674 802.1p and IEEE 802.1Q Bridge MIB
RFC 2737 Entity MIB (Version 2)
RFC 2819 RMON MIB
RFC 2863 The Interfaces Group MIB
RFC 2925 Ping MIB
RFC 2932 IP (Multicast Routing MIB)
RFC 2933 IGMP MIB
RFC 3414 SNMP-User based-SM MIB
RFC 3415 SNMP-View based-ACM MIB
RFC 3417 Simple Network Management Protocol (SNMP) over IEEE 802 Networks
RFC 3418 MIB for SNMPv3
RFC 4836 Managed Objects for 802.3 Medium Attachment Units (MAU)

Network management

IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
RFC 1155 Structure of Management Information
RFC 1157 SNMPv1
RFC 2021 Remote Network Monitoring Management Information Base Version 2 using SMlv2
RFC 2576 Coexistence between SNMP versions
RFC 2578 Structure of Management Information Version 2 (SMlv2)
RFC 2579 Textual Conventions for SMlv2
RFC 2580 Conformance Statements for SMlv2
RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events)
RFC 2819 Remote Network Monitoring Management Information Base
RFC 2856 Textual Conventions for Additional High Capacity Data Types
RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations
RFC 3164 BSD syslog Protocol
RFC 3176 sFlow
RFC 3411 SNMP Management Frameworks
RFC 3412 SNMPv3 Message Processing
RFC 3414 SNMPv3 User-based Security Model (USM)
RFC 3415 SNMPv3 View-based Access Control Model VACM)
RFC 5424 Syslog Protocol
ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
SNMPv1/v2c/v3
XRMON

QoS/CoS

IEEE 802.1P (CoS)
RFC 2474 DiffServ Precedence, including 8 queues/port
RFC 2597 DiffServ Assured Forwarding (AF)
RFC 2598 DiffServ Expedited Forwarding (EF)
Ingress Rate Limiting

Security

IEEE 802.1X Port Based Network Access Control
IEEE 802.1X:Port-Based Network Access Control (2001)
RFC 1321 The MD5 Message-Digest Algorithm

Technical Specifications

RFC 1334 PPP Authentication Protocols (PAP)
RFC 1492 An Access Control Protocol, Sometimes Called TACACS
RFC 1492 TACACS+
RFC 1994 PPP Challenge Handshake Authentication Protocol (CHAP)
RFC 2082 RIP-2 MD5 Authentication
RFC 2104 Keyed-Hashing for Message Authentication
RFC 2138 RADIUS Authentication
RFC 2139 RADIUS Accounting
RFC 2246 Transport Layer Security (TLS)
RFC 2548 Microsoft Vendor-specific RADIUS Attributes
RFC 2618 RADIUS Authentication Client MIB
RFC 2620 RADIUS Accounting Client MIB
RFC 2716 PPP EAP TLS Authentication Protocol
RFC 2818 HTTP Over TLS
RFC 2865 RADIUS (client only)
RFC 2865 RADIUS Authentication
RFC 2866 RADIUS Accounting
RFC 2867 RADIUS Accounting Modifications for Tunnel Protocol Support
RFC 2868 RADIUS Attributes for Tunnel Protocol Support
RFC 2869 RADIUS Extensions
RFC 2882 NAS Requirements: Extended RADIUS Practices
RFC 3162 RADIUS and IPv6
RFC 3576 Dynamic Authorization Extensions to RADIUS
RFC 3579 RADIUS Support For Extensible Authentication Protocol (EAP)
RFC 3580 IEEE 802.1X Remote Authentication Dial In User Service (RADIUS) Usage Guidelines
RFC 4576 RADIUS Attributes
Access Control Lists (ACLs)
draft-grant-tacacs-02 (TACACS)
Guest VLAN for 802.1x
MAC Authentication
MAC Lockdown
MAC Lockout
Port Security
Secure Sockets Layer (SSL)
SSHv2 Secure Shell
Web Authentication

Accessories

HP 2920 Switch series accessories	Modules	
	HP 2920 2-port 10GbE SFP+ Module	J9731A
	HP 2920 2-port 10GBASE-T Module	J9732A
	HP 2920 2-port Stacking Module	J9733A
	HP 2920 2-port 10GbE SFP+ Module/S-Buy	J9731AS
	HP 2920 2-port 10GBASE-T Module/S-Buy	J9732AS
	HP 2920 2-port Stacking Module/S-Buy	J9733AS
	Transceivers	
	HP X121 1G SFP LC SX Transceiver	J4858C
	HP X121 1G SFP LC LX Transceiver	J4859C
	HP X122 1G SFP LC BX-D Transceiver	J9142B
	HP X122 1G SFP LC BX-U Transceiver	J9143B
	HP X121 1G SFP LC LH Transceiver	J4860C
	HP X121 1G SFP RJ45 T Transceiver	J8177C
	HP X111 100M SFP LC FX Transceiver	J9054C
	HP X112 100M SFP LC BX-D Transceiver	J9099B
	HP X112 100M SFP LC BX-U Transceiver	J9100B
	HP X132 10G SFP+ LC SR Transceiver	J9150A
	HP X132 10G SFP+ LC LR Transceiver	J9151A
	HP X132 10G SFP+ LC LRM Transceiver	J9152A
	HP X132 10G SFP+ LC ER Transceiver	J9153A
	HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
	HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
	HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
	HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A
	HP 10G X244 XFP to SFP+ 3m Direct Attach Copper Cable	J9301A
	HP 10G X244 XFP to SFP+ 5m Direct Attach Copper Cable	J9302A
	HP X132 10G SFP+ LC SR XCVR/S-Buy	J9150AS
	HP X132 10G SFP+ LC LR XCVR/S-Buy	J9151AS
	HP X132 10G SFP+ LC LRM XCVR/S-Buy	J9152AS
	Cables	
	HP LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable	AJ833A
	HP LC to LC Multi-mode OM3 2-Fiber 1.0m 1-Pack Fiber Optic Cable	AJ834A
HP LC to LC Multi-mode OM3 2-Fiber 2.0m 1-Pack Fiber Optic Cable	AJ835A	
HP LC to LC Multi-mode OM3 2-Fiber 5.0m 1-Pack Fiber Optic Cable	AJ836A	
HP LC to LC Multi-mode OM3 2-Fiber 15.0m 1-Pack Fiber Optic Cable	AJ837A	
HP LC to LC Multi-mode OM3 2-Fiber 30.0m 1-Pack Fiber Optic Cable	AJ838A	
HP LC to LC Multi-mode OM3 2-Fiber 50.0m 1-Pack Fiber Optic Cable	AJ839A	
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable	QK732A	
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable	QK733A	
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable	QK734A	
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable	QK735A	
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable	QK736A	
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable	QK737A	

Accessories

HP 2920 0.5m Stacking Cable	J9734A
HP 2920 1.0m Stacking Cable	J9735A
HP 2920 3.0m Stacking Cable	J9736A
HP 640 External/Redundant Power Supply 1m Cable	J9806A
HP 2920 0.5m Stacking Cable/S-Buy	J9734AS
HP 2920 1.0m Stacking Cable/S-Buy	J9735AS
HP 2920 3.0m Stacking Cable/S-Buy	J9736AS
Power Supply	
HP 640 Redundant/External Power Supply Shelf	J9805A
Mounting Kit	
HP X410 1U Universal 4-post Rack Mounting Kit	J9583A
HP 2920-48G-PoE+ 740W Switch_PL (J9836A_PL)	
HP X332 575W 100-240VAC to 54VDC modular power supply	J9738A
HP X332 1050W 110-240VAC to 54VDC Power Supply	J9737A

Accessory Product Details

NOTE: Details are not available for all accessories. The following specifications were available at the time of publication.

**HP 0.5 m Multimode OM3 Cabling
LC/LC Optical Cable
(AJ833A)**

Notes

Cable type:

50/125 μm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m

Maximum distance:

10Gbps Transfer Rate (Ethernet): 300m

Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 μm fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter: $50 \pm 3.0\mu\text{m}$ Cladding diameter: $125 \pm 2.0\mu\text{m}$ Coating diameter: $245 \pm 10\mu\text{m}$
- Optical glass: Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.
- Optical glass: Bandwidth: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.
- CABLE: The cable is duplex zipcord graded index 50/125 μm multimode optical fiber and designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION:
- Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color: Aqua for OM3 multimode per TIA 598
- Boot Color: White
- Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.
- Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg

Services

Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

**HP 1 m Multimode OM3 Cabling
LC/LC Optical Cable
(AJ834A)**

Notes

Cable type:

50/125 μm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m

Maximum distance:

10Gbps Transfer Rate (Ethernet): 300m

Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 μm fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter: $50 \pm 3.0\mu\text{m}$ Cladding diameter: $125 \pm 2.0\mu\text{m}$ Coating diameter: $245 \pm 10\mu\text{m}$

Accessory Product Details

- **Optical Glass Bandwidth:** For LED sources: 1500/500 MHz-km @850/1300nm.
- **Optical Glass:** For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.
- **CABLE:** The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- **BULK CABLE & CABLE ASSEMBLY CONFIGURATION:**
- **Jacket Material:** Riser Grade - Low Smoke Zero Halogen thermoplastic.
- **Jacket Color:** Aqua for OM3 multimode per TIA 598
- **Boot Color:** White
- **Insertion Loss:** less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- **Maximum Cable attenuation:** 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.
- **Weight:** Air Packed Weight: 1 LB Net Weight: 0.454Kg

Services

Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP 2 m Multimode OM3 LC/LC Optical Cable (AJ835A)

Cabling

Cable type:

50/125 µm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;

Maximum distance:

10Gbps Transfer Rate (Ethernet): 300m

Notes

Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- **Dimensions:** Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um
- **Optical Glass Bandwidth:** For LED sources: 1500/500 MHz-km @850/1300nm.
- **Optical Glass:** For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.
- **CABLE:** The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- **BULK CABLE & CABLE ASSEMBLY CONFIGURATION:**
- **Jacket Material:** Riser Grade - Low Smoke Zero Halogen thermoplastic.
- **Jacket Color:** Aqua for OM3 multimode per TIA 598
- **Boot Color:** White
- **Insertion Loss:** less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- **Maximum Cable attenuation:** 3.0 dB/km @ 850 nm, 1.0 dB/Km @

Accessory Product Details

- 1310 nm @ 23°C as tested in accordance with EIA 455-46.
- Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg

Services

Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP 5 m Multimode OM3 LC/LC Optical Cable (AJ836A)

Cabling

Cable type:

50/125 µm core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;

Maximum distance:

10Gbps Transfer Rate (Ethernet): 300m

Notes

Cable Specs: This specification defines the detail requirements for a tight buffered duplex fiber optic multimode OM3 50/125 µm fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter: 50 ± 3.0µm Cladding diameter: 125 ± 2.0µm Coating diameter: 245 ± 10µm
- Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.
- Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.
- CABLE: The cable is duplex zipcord graded index 50/125µm multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION:
- Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color: Aqua for OM3 multimode per TIA 598
- Boot Color: White
- Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.
- Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg

Services

Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP 15 m Multimode OM3 LC/LC Optical Cable (AJ837A)

Cabling

Cable type:

50/125 µm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;

Maximum distance:

10Gbps Transfer Rate (Ethernet): 300m

Accessory Product Details

Notes

Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um
- Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.
- Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.
- CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION:
- Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color: Aqua for OM3 multimode per TIA 598
- Boot Color: White
- Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.
- Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg

Services

Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP 30 m Multimode OM3 LC/LC Optical Cable (AJ838A) **Cabling**

Cable type:

50/125 µm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;

Maximum distance:

10Gbps Transfer Rate (Ethernet): 300m

Notes

Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um
- Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.
- Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.
- CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION:
- Jacket Material: Riser Grade - Low Smoke Zero Halogen

Accessory Product Details

- thermoplastic.
- Jacket Color: Aqua for OM3 multimode per TIA 598
- Boot Color: White
- Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.
- Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg

Services

Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP 50 m Multimode OM3 LC/LC Optical Cable (AJ839A)

Cabling

Cable type:

50/125 μm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;

Maximum distance:

10Gbps Transfer Rate (Ethernet): 300m

Notes

Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 μm fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter: 50 \pm 3.0 μm Cladding diameter: 125 \pm 2.0 μm Coating diameter: 245 \pm 10 μm
- Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.
- Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.
- CABLE: The cable is duplex zipcord graded index 50/125 μm multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION:
- Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color: Aqua for OM3 multimode per TIA 598
- Boot Color: White
- Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.
- Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg

Services

Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP Premier Flex LC/LC Multi-mode OM4 2 fiber

Notes

Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125 μm duplex cable and Ethernet assembly with LC duplex connectors

Accessory Product Details

1m Cable (QK732A)

on each end.

- Core Diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um
- Bandwidth: 3000 MHz-km @ 850nm (Laser)
- Jacket Color: Blue
- Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic
- Boot Color: White
- Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.
- Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m
- Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45

Services

Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable (QK733A)

Notes

Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.

- Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um
- Bandwidth: 3000 MHz-km @ 850nm (Laser)
- Jacket Color: Blue
- Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic
- Boot Color: White
- Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.
- Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m
- Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45

Services

Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable (QK734A)

Notes

Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.

- Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um
- Bandwidth: 3000 MHz-km @ 850nm (Laser)
- Jacket Color: Blue
- Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic

Accessory Product Details

	<p>Services</p>	<ul style="list-style-type: none"> • Boot Color: White • Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. • Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m • Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45 <p>Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.</p>
<p>HP Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable (QK735A)</p>	<p>Notes</p> <p>Services</p>	<p>Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.</p> <ul style="list-style-type: none"> • Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um • Bandwidth: 3000 MHz-km @ 850nm (Laser) • Jacket Color: Blue • Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic • Boot Color: White • Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. • Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m • Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45 <p>Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.</p>
<p>HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable (QK736A)</p>	<p>Notes</p>	<p>Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.</p> <ul style="list-style-type: none"> • Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um • Bandwidth: 3000 MHz-km @ 850nm (Laser) • Jacket Color: Blue • Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic • Boot Color: White • Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. • Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m • Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45

Accessory Product Details

	<p>Services</p>	<p>Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.</p>
<p>HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable (QK737A)</p>	<p>Notes</p>	<p>Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.</p> <ul style="list-style-type: none"> • Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um • Bandwidth: 3000 MHz-km @ 850nm (Laser) • Jacket Color: Blue • Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic • Boot Color: White • Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. • Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m • Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45
	<p>Services</p>	<p>Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.</p>
<p>HP X410 1U Universal 4-post Rack Mounting Kit (J9583A)</p>	<p>Notes</p>	<p>The rack mounting kit supports the 1U, full width switches in the following switch series and the power supply: V1810 Series, E2510 Series, E2520 Series, E2610 Series, E2810 Series, E2910 Series, E3500 Series, and the E620 Power Supply</p> <p>This universal rack mounting kit is design to fit the following racks: HP 10K 10642, HP 10K 10842, Panduit CN, Panduit CS, Wrightline Vantage S2, APC Netshelter 600mm, and APC Netshelter 800mm. It may well fit many other brands and models too.</p>
	<p>Services</p>	<p>Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.</p>

Summary of Changes

Date	Version History	Action	Description of Change:
01-Dec-2014	From Version 13 to 14	Added	Accessories section added
		Changed	Overview and Technical Specifications sections updated
09-Oct-2014	From Version 12 to 13	Removed	Removed SKUs J9438A, J9440A and J9439A from Accessory Product Details
15-Apr-2014	From Version 10 to 12	Removed	HP X121 1G SFP RJ45 T Transceiver was removed from Configuration.
17-Feb-2014	From Version 9 to 10	Changed	SFP+ Transceivers were revised.
12-Nov-2013	From Version 8 to 9	Changed	Build to Order, Rack Level Integration CTO Models, Internal Power Supplies, Cables, and Switch Enclosure Options were revised.
30-Sep-2013	From Version 7 to 8	Changed	Configuration was reorganized
18-Sep-2013	From Version 6 to 7	Changed	Product overview and Features and benefits were revised HP 2920-48G-PoE+ 740W Switch was added
19-Aug-2013	From Version 5 to 6	Changed	Configuration was revised
			Overview images were added
10-Jun-2013	From Version 4 to 5	Added	OM4 cables were added.
25-Mar-2013	From Version 3 to 4	Removed	Removed the entire Accessories Section.
		Added	Configuration: Multi-Mode Cables and Stacking Cables to the Cables section.
		Changed	Configuration: Updated section with Build to Order and several notes and not references
05-Mar-2013	From Version 2 to 3	Changed	Updated the Accessories section, removing unsupported RPS.
27-Feb-2013	From Version 1 to 2	Changed	Updated the formatting of the new Configuration section.

To learn more, visit: www.hp.com/networking

© Copyright 2014 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

State of West Virginia VENDOR PREFERENCE CERTIFICATE

Certification and application* is hereby made for Preference in accordance with **West Virginia Code, §5A-3-37**. (Does not apply to construction contracts). **West Virginia Code, §5A-3-37**, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the **West Virginia Code**. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Vendor Preference, if applicable.

1. Application is made for 2.5% vendor preference for the reason checked:

Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; or,

Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or,

Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; or,

2. Application is made for 2.5% vendor preference for the reason checked:

Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,

3. Application is made for 2.5% vendor preference for the reason checked:

Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,

4. Application is made for 5% vendor preference for the reason checked:

Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; or,

5. Application is made for 3.5% vendor preference who is a veteran for the reason checked:

Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; or,

6. Application is made for 3.5% vendor preference who is a veteran for the reason checked:

Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

7. Application is made for preference as a non-resident small, women- and minority-owned business, in accordance with West Virginia Code §5A-3-59 and West Virginia Code of State Rules.

Bidder has been or expects to be approved prior to contract award by the Purchasing Division as a certified small, women- and minority-owned business.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: DIVERSATEC RESOURCES, INC

Signed: [Signature]

Date: 3-5-15

Title: Sr. Account Manager

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

MANDATE: 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 exceeds 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 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: DIVERSATEC RESOURCES, INC

Authorized Signature: Ralph A. Tramm Date: 3-9-15

State of Ohio

County of Delaware to-wit:

Taken, subscribed, and sworn to before me this 9th day of March, 2015

My Commission expires October 1, 2018



ANNE KRAMER
NOTARY PUBLIC - OHIO
MY COMMISSION EXPIRES 10-1-18

NOTARY PUBLIC Anne Kramer