# Models

HP 640 Redundant/External Power Supply Shelf

J9805A

## **Key features**

- Provides redundant or extenal power for HP 2920 Switch Series products
- Uses same modular power supplies as the HP 2920 Switches
- Unit has three power supply slots for maximum configurability options
- In RPS mode can provide protection for 8 switches, with up to 3 internal supply failures
- In EPS mode can provide up to an additional 2,100 watts of shared PoE+ power for up to 3 switches

## **Product overview**

The HP 640 Redundant/External Power Supply Shelf is used with the HP 2920 Switch Series to provide redundant power to back up internal power supplies in the switches, as well as provide external power for applications where additional power is required, as in PoE+ applications. Unit ships ready to be populated with at least one optional power supply and power cable, purchased separately.

## **Features and benefits**

Scalability

#### • Three modular power supply slots

- Supports redundant power for up to eight HP 2920 Switches protects against internal switch power supply failures
- Supports external power allowing up to three HP 2920 48 Port PoE+ Switches to support 1440W of PoE+ power allows all 48 ports of a PoE+ switch to offer 30W of PoE+ power at the same time

#### **Resiliency and high availability**

• External redundant power supply provides high reliability

#### Configuration

Easy configuration

## provides full management features, available through connected HP 2920 Switches

#### **Product architecture**

• Three power supply module slots

allows failure of a power supply in one bay to not affect the other two power supplies

#### Warranty and support

• Lifetime warranty

advance hardware replacement for as long as you own the product with next-business-day delivery (available in most countries)†

†HP warranty includes repair or replacement of hardware for as long as you own the product, with next business day advance



### **Overview**

replacement (available in most countries). The disk drive included with HP AllianceOne Advanced Services and Services zl Modules, HP Threat Management Services zl Module, HP AllianceOne Extended zl Module with Riverbed Steelhead, HP MSM765 zl Mobility Controller and HP Survivable Branch Communication zl Module powered by Microsoft<sup>®</sup> Lync has a five-year hardware warranty. For details, refer to the Software license and hardware warranty statements at **www.hp.com/networking/warranty**.

# QuickSpecs

# **Technical Specifications**

| PortsRedundances UP UP UP Services<br>Reserve and Services<br>The AR AP Services Ser           | HP 640 Redundant/Extern    | al Power Supply Shelf (J98   | 05A)   |
|---|----------------------------|--|--|
| Environment Operating temperature<br>Operating relative 32°F to 131°F (0°C to 55°C)   Operating relative<br>humidity 15% to 95%, noncondensing<br>+0°F to 158°F (-40°C to 70°C)   temperature -40°F to 158°F (-40°C to 70°C)   temperature 15% to 95%, noncondensing<br>relative humidity   A titude up to 9,842 ft (3 km)   Acoustic Power: 69.1 dB, Pressure: 53.1 dB Acoustic ratings are absolute max sound<br>levels with 3 modular power supplies and max output power   Electrical characteristics Description No power onnected directly to the RPS 640. All power inlets come from<br>optional power supplies.   DC voltage Depending on which power supplies are installed, can supply 12VDC or 54VDC<br>Maximum power rating 3150 W   PoE power 20VC or 54VDC V Frequency 50/60 Hz   Notes Maximum power rating and maximum heat dissipation are the worst-case<br>theoretical maximum numbers provided for planning the infrastructure with<br>fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all<br>modules populated.   Unit has 3 empty power supply slots. 1 to 3 optional power supplies and RPS<br>cables for each connector. Switch power put plue PoE. Bay<br>#1 has 4 Switch connectors and power is split evenly among each enabled<br>connector. Bays 2 and 3 have 2 Switch connectors, and split power evenly<br>among each enabled connector. Switch power put Concectors are enabled<br>by default, and may be disabled through CLI commands on a connected HP<br>2200Switch.   Safety   | Ports                      | Restrictions: Has 3 Zones, Zone 1 has 4 RPS/EPS power ports, Zone 2 and Zone 3 have 2 each RPS/EPS |  |
| Operating relative<br>humidity   15% to 95%, noncondensing     Nonoperating/Storage<br>relative humidity   -0°F to 158°F (-40°C to 70°C)     Nonoperating/Storage<br>relative humidity   15% to 95%, noncondensing     Altitude   up to 9,842 ft (3 km)     Accusatic   Power: 69.1 dB, Pressure: 53.1 dB Acoustic ratings are absolute max sound<br>levels with 3 modular power supplies and max output power     Electrical characteristic   Description   No power connected directly to the RPS 640. All power inlets come from<br>optional power supplies.     DC voltage   Depending on which power supplies are installed, can supply 12VDC or 54VDC V     RPS   12VDC or 54VDC V     RPS   12VDC or 54VDC V     Frequency   50/60 Hz     Notes   Maximum power rating and maximum heat dissipation are the worst-case<br>weak with non-PoE Switches. Next support 14400 MP 64F. Bay<br>with as 3 empt power supply slots. 1 to 3 optional power supplies and RPS<br>cables for each connectors and power is split evenly among each enabled<br>connector. Bays 2 and 3 have 2 Switch connectors, and split power evenly<br>among each enabled connector. Switch power power supplies and RPS<br>cables for each connectors, Switch power supplies and RPS<br>cables for each connectors witch required burtors, and split power evenly<br>among each enabled connector. Switch power power supplies and RPS<br>cables for each connector. Switch power supplies and RPS<br>cables for each connectors is shit evenly among each enabled<br>connector. Bays 2 and 3 have 2 Switch connectors, and split power evenly<br>among e  | Physical characteristics   | Dimensions   | 17.4(w) x 12.7(d) x 1.73(h) in (44.2 x 32.26 x 4.4 cm) (1U height)   |
| humidity• • • • • • • • • • • • • • • • • • •   | Environment                | Operating temperature  | 32°F to 131°F (0°C to 55°C)  |
| Image: |                            |  | 15% to 95%, noncondensing  |
| relative humidityvAltitudeup to 9,842 ft (3 km)AcousticPower: 69.1 dB, Pressure: 53.1 dB Acoustic ratings are absolute max sound<br>tevels with 3 modular power supplies and max output powerElectrical characteristicsDescriptionNo power connected directly to the RPS 640. All power inlets come from<br>optional power supplies.DC voltageDepending on which power supplies are installed, can supply 12VDC or 54VDCPoE power2100 WRPS12VDC or 54VDC VFrequency50/60 HzNotesMaximum power rating and maximum heat dissipation are the worst-case<br>theoretical maximum numbers provided for planning the infrastructure with<br>fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all<br>modules populated.Unit has 3 empty power supply slots. 1 to 3 optional power supplies and PSP<br>cables for each connected switch required but not included. J9739A can only<br>be used with non-PoE Switches. Nuts use J9737A to support 1440W PoE+. Bay<br>with as 4 Switch connectors and power is suppli evently among each enabled<br>connector. Bays 2 and 3 have 2 Switch connectors, and split power evently<br>among each enabled through CLI commands on a connected HP<br>2920 Switch.SafetyGOST R MEK609S0; ENE2473: 2010; UL 609S0-1 201 Edition; CSA C222. No. 609S0-1-072 and Edition; EN<br>609S0-1:2006+A11:2009+1:2011; LE 609S0-1:2005, Amd 1:2009EmissionsCC: Rules Part 15, Subj=x + Ucass A; VCCI Class A; BSMI CNS 13438; ASI/NZS CISPR 22 Class A; KCC Class A;<br>A:2009; GOST R FILEImmunityGenericES5024:2010Edition - ES0ECC Rules Part 15, Subj=x + Ucass A; UCCI Class A; BSMI CNS 13438; ASI/NZS CISPR 22 Class A; KCC Class A;<br>ECC Rules Part 15, Subj=x   |                            |  | -40°F to 158°F (-40°C to 70°C)   |
| AcousticPower: 69.1 dB, Pressure: 53.1 dB Acoustic ratings are absolute max sound<br>levels with 3 modular power supplies and max output powerElectrical characteristicsDescriptionNo power connected directly to the RPS 640. All power inlets come from<br>optional power supplies.DC voltageDepending on which power supplies are installed, can supply 12VDC or 54VDCMaximum power rating<br>P0E power2100 WRPS12VDC or 54VDC VFrequency50/60 HzNotesMaximum power rating and maximum heat dissipation are the worst-case<br>theoretical maximum numbers provided for planning the infrastructure with<br>fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all<br>modules populated.<br>Unit has 3 empty power supply slots. 1 to 3 optional power supplies and RPS<br>cables for each connectors. Switch power pupple werely<br>among each enabled<br>connector. Bays 2 and 3 have 2 Switch connectors, and split power evenly<br>among each enabled connector. Switch power pupple<br>Subsch.SafetyGOST R MEK60950; EM6247>:2010; UL 60950-1:2005, Amd 1: 2009Elass A; VCCI Class A; BSM ICNS 13438; AS/NZS CISPR 22 Class A; KCC Class A;<br>EX S0502:2010; EN 6100-3-2:2006+A1:2009 + 1:2009+A1:2009 + 2:2008; EN 5100-3-2:2006+A1:2009 + 1:2009 + A1:2009 + A2:2008; EN 5502:2010; EN 6100-3-2:2006+A1:2009 + A1:2009 + A2:2008; EN 5502:2010; EN 6100-3-2:2006+A1:2009 + A1:2009 + A1:2009 + A1:2009 + A1:2009 + A1:2009 + A2:2008; EN 5100-3-2:2006+A1:2009 + A2:2008; EN 5502:2010; EN 6100-3-2:2006ImmunityGenericENS502:2010; EN 6100-4-2:2008<br>IEC 61000-4-2:2008<br>IEC 61000-4-2:2008   |                            |  | 15% to 95%, noncondensing  |
| Electrical characteristicsIevels with 3 modular power supplies and max output powerFlectrical characteristicsPostropeanD cvoltageDevoltageMaximup power atom310Postpower2100 VPostpower2100 VFrequency50/60 H2NotesNarimup power atom and more supplies and instantion of the postpower atom and th  |                            | Altitude   | up to 9,842 ft (3 km)  |
| OC voltageoptional power supplies.DC voltageDepending on which power supplies are installed, can supply 12VDC or 54VDCMaximum power rating3150 WPOE power2100 WRPS12VDC or 54VDC VFrequency50/60 HzNotesMaximum power rating and maximum heat dissipation are the worst-case<br>theoretical maximum numbers provided for planning the infrastructure with<br>fully loaded POE (if equipped), 100% traffic, all ports plugged in, and all<br>modules populated.<br>Unit has 3 empty power supply slots. 1 to 3 optional power supplies and RPS<br>cables for each connected switch required but not included. J9739A can only<br>be used with non-POE Switches. Must use J9737A to support 1440W POE+. Bay<br>#1 has 4 Switch connectors, and split power evenly<br>among each enabled connector. Switch power port connectors are all enabled<br>connector. Bays 2 and 3 have 2 Switch connectors, and split power evenly<br>among each enabled connector. Switch power port connectors are all enabled<br>connector. Bays 2 and 3 have 2 Switch connectors, and split power evenly<br>among each enabled connector. Switch power port connected HP<br>   |                            | Acoustic   |  |
| Maximup ower rating150 WPoE power2100 WRPS2VDC or 54VDC VFrequency0/60 HZNotesMaximum power rating and maximum heat dissipation are the worst-case<br>theoretical maximum numbers provided for planning the infrastructure with<br>hully loaded PoG (if equipped), 100% traffic, all ports plugged in, and all<br>modules populated.NotesWith sa S empty power supply slots. 1 to 3 optional power supplies and RPS<br>values for each connected switch required but not included. J973PA con onely<br>be used with non-PoE Switches Must use J973TA to support 1440W PoE-F. Base<br>soles for each connector. Switch connectors, and power is split evently among each enabled<br>connector. Bays 2 and 3 have 2 Switch connectors and power supplies and RPS<br>vales for each connector. Switch connectors, and split power evently<br>among each enabled connector. Switch power port connectors are all enabled<br>connector. Bays 2 and 3 have 2 Switch connectors, and split evently<br>among each enabled connector. Switch power port connectors are all enabled<br>connector. Bays 2 and 3 have 2 Switch connectors, and split power evently<br>among each enabled connector. Switch power port connectors are all enabled<br>connector. Bays 2 and 3 have 2 Switch connectors, and split power evently<br>among each enabled connector. Switch power port connectors are all enabled<br>connector. Bays 2 and 3 have 2 Switch connectors, and split power evently<br>among each enabled connector. Switch power port connectors are all enabled<br>connector. Switch power port connectors. Switch power port connect   | Electrical characteristics | Description  |  |
| PoE power2100 WRPS12VDC or 54VDC VFrequency50/60 HzNotesMaximum power rating and maximum heat dissipation are the worst-case<br>theoretical maximum numbers provided for planning the infrastructure with<br>fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all<br>modules populated.<br>Unit has 3 empty power supply slots. 1 to 3 optional power supplies and RPS<br>cables for each connected switch required but not included. J9739A can only<br>be used with non-PoE Switches. Must use J9737A to support 1440W PoE+. Bay<br>#1 has 4 Switch connectors and power is split evenly among each enabled<br>connector. Bays 2 and 3 have 2 Switch connectors, and split power evenly<br>among each enabled connector. Switch power port connected HP<br>2920 Switch.SafetyGOST R MEK60950; EN62+>>:>:2010; UL 60950-12:005, Amd 1: 2009<br>A2:2009; GOST R 15, Subp=>:>::2008; ICIO13+32:2008+A11:2009+A12:2008  |                            | DC voltage   | Depending on which power supplies are installed, can supply 12VDC or 54VDC   |
| RPS12VDC or 54VDC VFrequency50/60 HzNotesMaximum power rating and maximum heat dissipation are the worst-case<br>theoretical maximum numbers provided for planning the infrastructure with<br>fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all<br>modules populated.<br>Unit has 3 empty power supply slots. 1 to 3 optional power supplies and RPS<br>cables for each connected switch required but not included. J9739A can only<br>be used with non-PoE Switches. Must use J9737A to support 1440W PoE+. Bay<br>#1 has 4 Switch connectors and power is split evenly among each enabled<br>connector. Bays 2 and 3 have 2 Switch connectors, and split power evenly<br>among each enabled connector. Switch power port connected HP<br>2920 Switch.SafetyGOST R MEK60950; ENE2479:2010; UL 60950-1 2nd Edition; CSA C22.2 No. 60950-1-07 2nd Edition; EN<br>60950-1:2006+A11:2009+J:2010+A12:2011; IEC 60950-1:2005, Amd 1: 2009EmissionsFCC Rules Part 15, SubJ +> Usas A; VCCI Class A; BSMI CNS 13438; AS/NZS CISPR 22 Class A; KCC Class A;<br>A:2:009; GOST R S1318:22ImmunityGeneric<br>ESD<br>RdiatedEN55022:2010<br>EC 61000-4-3:2010   |                            | Maximum power rating   | 3150 W   |
| Frequency50/60 HzNotesMaximum power rating and maximum heat dissipation are the worst-case<br>theoretical maximum numbers provided for planning the infrastructure with<br>fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all<br>modules populated.<br>Unit has 3 empty power supply slots. 1 to 3 optional power supplies and RPS<br>eables for each connected switch required but not included. J9739A con only<br>be used with non-PoE Switches. Must use J9737A to support 1440W PoE+B say<br>#1 has 4 Switch connectors and power is split evenly among each enabled<br>connector. Bays 2 and 3 have 2 Switch connectors, and split power evenly<br>abde disabled connector. Switch power port connector are all enabled<br>by default, and may be disabled through CLI commands on a connected HPSafetyGOST R MEK60950; EN62+V-2/010; LL 60950-1 2nd Edition; CSA C22.2 No. 60950-1-07 2nd Edition; EN<br>60950-1:2006+A11:200+2:2010; HL 60950-1:2005+A11:2009+<br>2:202 Switch.ImmunityGenericEN5504:2010<br>ESD ESDESDEC1000-4-2:2008<br>EG100-4-2:2008<br>EAditedRaditedIEC1000-4-3:2010   |                            | PoE power  | 2100 W   |
| NotesMaximum power rating and maximum heat dissipation are the worst-case<br>theoretical maximum numbers provided for planning the infrastructure with<br>fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all<br>modules populated.<br>Unit has 3 empty power supply slots. 1 to 3 optional power supplies and RPS<br>cables for each connected switch required but not included. J9739A can only<br>be used with non-PoE Switches. Must use J9737A to support 1440W PoE+. Bay<br>#1 has 4 Switch connectors and power is split evenly among each enabled<br>connector. Bays 2 and 3 have 2 Switch connectors, and split power evenly<br>among each enabled connector. Switch power port connectors are all enabled<br>by default, and may be disabled through CLI commands on a connected HP<br>2920 Switch.SafetyGOST R MEK60950; EN62479:2010; UL 60950-1 2nd Edition; CSA C22.2 No. 60950-1-07 2nd Edition; EN<br>60950-1:2006+A11:2009+A1:2010+A12:2011; IEC 60950-1:2005, Amd 1: 2009EmissionsFCC Rules Part 15, Subpart B Class A; VCCI Class A; BSMI CNS 13438; AS/NZS CISPR 22 Class A; KCC Class A;<br>A:2:2009; GOST R 51318.27ImmunityGenericEN55024:2010ESDIEC 61000-4-3:2010  |                            | RPS  | 12VDC or 54VDC V   |
| SafetyGOST R MEK60950; EN6247:2010; UL 60950-1 2nd Edition; CSA C22.2 No. 60950-1-07 2nd Edition; EN<br>60950-1:2006+A11:2009+X1:2011; IEC 60950-1:2005, Amd 1: 2009SafetyGOST R MEK60950; EN6247:2010; UL 60950-1 2nd Edition; CSA C22.2 No. 60950-1-07 2nd Edition; EN<br>60950-1:2006+A11:2009+X1:2010+A12:2011; IEC 60950-1:2005, Amd 1: 2009ImmunityGenericElissionsEC C Rules Part 15, SubpartElissionsEc 61000-4-2:2008<br>R diatedEliso100-4-2:2008<br>R diated   |                            | Frequency  | 50/60 Hz   |
| 60950-1:2006+A11:2009+A1:2010+A12:2011; IEC 60950-1:2005, Amd 1: 2009     Emissions   FCC Rules Part 15, Subpart B class A; VCCI Class A; BSMI CNS 13438; AS/NZS CISPR 22 Class A; KCC Class A;<br>EN 55022:2010; EN 6100-3-3:2008; EN 6100-3-2:2006+A1:2009 +<br>A2:2009; GOST R 51318.22     Immunity   Generic   EN55024:2010     ESD   IEC 61000-4-2:2008   IEC 61000-4-2:2008     Radiated   IEC 61000-4-3:2010   IEC 61000-4-3:2010   |                            | Notes  | theoretical maximum numbers provided for planning the infrastructure with<br>fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all<br>modules populated.<br>Unit has 3 empty power supply slots. 1 to 3 optional power supplies and RPS<br>cables for each connected switch required but not included. J9739A can only<br>be used with non-PoE Switches. Must use J9737A to support 1440W PoE+. Bay<br>#1 has 4 Switch connectors and power is split evenly among each enabled<br>connector. Bays 2 and 3 have 2 Switch connectors, and split power evenly<br>among each enabled connector. Switch power port connectors are all enabled<br>by default, and may be disabled through CLI commands on a connected HP |
| EN 55022:2010; EN 61000-3-3:2008; EN 6100-3-2:2006+A1:2009 +   A2:2009; GOST R 51318.22   Immunity Generic   ESD EN55024:2010   Radiated IEC 61000-4-2:2008   | Safety                     |  |  |
| ESD   IEC 61000-4-2:2008     Radiated   IEC 61000-4-3:2010  | Emissions                  | EN 55022:2010; EN 61000-3-3:2008; EN 6100-3-2:2006+A1:2009 +                                       |  |
| Radiated IEC 61000-4-3:2010   | Immunity                   | Generic  | EN55024:2010   |
|   |                            | ESD  | IEC 61000-4-2:2008   |
| <b>EFT/Burst</b> IEC 61000-4-4:2012   |                            | Radiated   | IEC 61000-4-3:2010   |
|   |                            | EFT/Burst  | IEC 61000-4-4:2012   |



# QuickSpecs

## **Technical Specifications**

|          | Surge                                 | IEC 61000-4-5:2005  |  |
|----------|---------------------------------------|---|--|
|          | Conducted                             | IEC 61000-4-6:2008  |  |
|          | Power frequency<br>magnetic field     | IEC 61000-4-8:2009  |  |
|          | Voltage dips and<br>interruptions     | IEC 61000-4-11:2004   |  |
| Notes    | No power cords, or pow<br>your needs. | No power cords, or power supplies are included with this product. Order modular power supplies to meet your needs.  |  |
| Services | descriptions and produ                | Refer to the HP website at <a href="http://www.hp.com/networking/services">www.hp.com/networking/services</a> 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. |  |



### Accessories

## HP 640 Redundant/External Power Supply Shelf accessories

| Cables<br>NEW HP 640 External/Redundant Power Supply 1m Cable  | J9806A                     |
|--|----------------------------|
| Power Supply<br>NEW HP X332 1050W 110-240VAC to 54VDC Power Supply<br>NEW HP X332 575W 100-240VAC to 54VDC Modular Power Supply<br>NEW HP X331 165W 100-240VAC to 12VDC Modular Power Supply | J9737A<br>J9738A<br>J9739A |

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