8 de marzo del 2012

Señores:
GOBIERNO DE PUERTO RICO - DEPARTAMENTO DE EDUCACION
Presente

Referencia: **Puerto Rico Telephone Company/Claro Puerto Rico como Cisco Partner proponente para la Solicitud en E-RATE FY2012 Internal Connections: RFP SF (OC) 2011-17**

De nuestra mayor consideración,

Por la presente, conforme a vuestra relación contractual con Cisco Systems, Inc. ("Cisco") y en el marco del proyecto de la referencia nos complace informarles que de acuerdo a la política de Cisco sobre la discontinuación de productos, en el caso de que Cisco fuera a discontinuar la comercialización de alguno de los productos, como regla general dará un preaviso de 6 meses a la fecha de End-Of-Sale (EOS). Dicha notificación se encontrará publicada en la siguiente dirección web: http://www.cisco.com/cgi-bin/Support/FieldNoticeTool/field-notice.

Respecto de la Disponibilidad de Repuestos, los mismos estarán disponibles mientras los equipos se encuentren en producción y por un periodo posterior de cinco (5) años contados a partir de la notificación de su discontinuación (3 años en el caso de software de aplicación), sujeto a que los productos estén cubiertos por un contrato de soporte directo de Cisco. Para mayor información sobre la política de soporte de los productos discontinuados (*End of Life Policy*), consulte en el siguiente sitio web: http://www.cisco.com/en/US/products/products_end-of-life_policy.html

Conforme a la política de ciclo de vida de productos de Cisco, los equipos Cisco cubiertos por un contrato de soporte técnico, entre ellos Cisco Smartnet, el usuario final podrán seguir adquiriendo dicho servicio y, el mismo estará disponible, independientemente del partner que los haya vendido originariamente. En caso de ser necesario la renovacion o extension de este periodo, cualquier otro partner de Cisco puede venderle al usuario final estos servicios de Cisco Smartnet para que los equipos continúen con su respaldo del servicio Smartnet de Cisco, en caso que el partner original cesa operaciones.

Sin otro particular, se despide muy atentamente,

Mauricio Ardila
Gerente de Canales - Caribe

CERTIFICADO PARA UN CANAL AUTORIZADO

Fecha: **8 de marzo del 2012**
(This letter was issued as of 08/March/2012)

A: **Puerto Rico Telephone Company / Claro Puerto Rico**
San Juan, Puerto Rico

Referencia: **Departamento de Educacion PR_FY2012 RFP SF(OC)2011-017 Internal Connections**

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Asimismo, Puerto Rico Telephone Company / Claro Puerto Rico está especializado en las siguientes tecnologías Cisco:

- Small Business Specialization;
- Express Foundation;
- Advanced Unified Communications;
- Advanced Security

Rogamos tengan en cuenta que el presente certificado no tiene carácter permanente y que el estatus del canal autorizado por Cisco se someterá a una revisión de forma regular. La información contenida en el presente certificado es válida en la fecha indicada en el encabezamiento y durante las seis (6) semanas siguientes a esa fecha.

En caso de necesitar cualquier información adicional, rogamos no dude en ponerse en contacto con Ricardo Batista en al (787) 620-1868.

Brian Fukahara, V.P., Finance
Cisco Systems, Inc.

Cisco Catalyst 2960 Series Switches

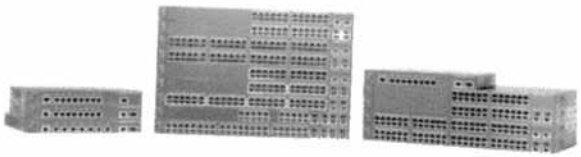
At-A-Glance

The Cisco® Catalyst® 2960 Series Switches are standalone fixed-configuration switches offering Fast Ethernet and Gigabit Ethernet connectivity with LAN services for midmarket and branch office networks.

Cisco Catalyst 2960 Series Intelligent Ethernet switches are offered in two categories:

- Cisco Catalyst 2960 Series with LAN Base software (Figure 1)
- Cisco Catalyst 2960 Series with LAN Lite software

Figure 1. Cisco Catalyst 2960 Models with LAN Base Software



Cisco Catalyst 2960 Series Switches with LAN Base software deliver intelligent services for commercial and midsize enterprise wiring closets and branch offices. The LAN Base software supports enhanced integrated security, including Network Admission Control (NAC), advanced quality of service (QoS), availability, and scalable management to enable new converged applications.

Primary Benefits

- **Connectivity:** Fast Ethernet and Gigabit Ethernet connectivity in 8-port, 24-port, and 48-port configurations
- **Power over Ethernet (PoE):** 48 PoE ports, 24 full PoE ports and 24-ports (PoE supported on 8 ports) configurations
- **Advanced Services:** Layer 2 switching with intelligent Layer 2 through 4 services for the network edge such as voice, video, and wireless LAN
- Simplified installation, configuration and troubleshooting with ease of use capabilities such as Auto Smart Ports and DHCP Auto Install
- **Security:** Network security enabled through a wide range of authentication methods, data encryption technologies, and NAC based on users, ports, and MAC addresses
- **Advanced availability:** 802.1S/W enables standards-based fault tolerance, load balancing, and rapid recovery; FlexLinks provides sub-100-millisecond convergence; Per VLAN Spanning Tree Plus (PVST+) increases available bandwidth by allowing traffic on redundant links
- **QoS and Multicast:** Industry-leading mechanisms for marking, classification, and scheduling to deliver superior network performance
- Hardware-based multicast services for corporate communications, E-learning, IP video surveillance, high definition video, and distribution of data to desktops in a scalable, reliable and efficient manner
- AC power supply failure protection with external power supply using Cisco Redundant Power System 2300
- **Management:** Cisco Network Assistant simplifies configuration, upgrades, and troubleshooting; Express Setup is quick and easy using the webpage interface
- The ability to enhance sustainability, green IT, and reduce costs with Cisco EnergyWise
- Single IP address, SYSLOG, SNMP management for a stack of up to 16 switches
- Limited lifetime hardware warranty
- Software updates at no additional charge

Customers

The Cisco Catalyst 2960 switches with LAN Base software are for users who:

- Want to power PoE devices, including Cisco IP phones, wireless access points, or IP video cameras.
- Expect intelligent services for new converged applications for midmarket wiring closets and small branch offices
- Are interested in intelligent features and capabilities such as QoS, enhanced security, and availability
- Want to quickly deploy and easily manage their networks and are interested in ease of installation, configuration and troubleshooting

Cisco Catalyst 2960 switches with the LAN Lite software image (Figure 2) simplify the migration from nonintelligent hubs and unmanaged switches to a fully scalable managed network. The LAN Lite Cisco IOS® Software provides entry-level security, QoS, PoE, and availability capabilities while lowering the network total cost of ownership.

Figure 2 Cisco Catalyst 2960 Models with LAN Lite Software

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Cisco Catalyst 2960 Series Switches

At-A-Glance

Primary Benefits

- Layer 2 Fast Ethernet switching in 8-port, 24-port, and 48-port configurations
- Power over Ethernet (PoE): 24 full PoE port and 24-port (PoE supported on 8 ports) configurations
- Security management through SSH, SSL, SNMPv3, and Network Admission Control enabled through 802.1x, MAC-Auth Bypass, and Port Security
- Availability: 802.1S/W enables standards-based fault tolerance, load balancing, and rapid recovery; PVST+ increases available bandwidth by allowing traffic on redundant links
- QoS: Traffic classification and shaping to prioritize various applications
- Management: Cisco IOS software based switch operation, Cisco Network Assistant support: Express Setup is quick and easy using the web page interface for network configuration
- Simplified installation, configuration and trouble-shooting with ease of use capabilities such as Auto Smart Ports and DHCP Auto Install
- Enhanced troubleshooting for link connectivity issues and cable diagnostics
- Single IP address, SYSLOG, SNMP management for a stack of up to 16 switches
- Limited lifetime hardware warranty
- Software updates available at no additional charge

Customers

The Cisco Catalyst 2960 switches with LAN Lite software are for users who:

- Are looking for basic connectivity with entry-level QoS, PoE, security, and availability
- Want to upgrade their network from hubs and older unmanaged switches for better performance and reliability
- Need to support new applications to provide real-time access to information
- Have limited IT staff and want to quickly deploy and easily manage their networks using a common network management platform
- Need to comply with new data security regulations
- Small and mid-size business customers who want to own and experience Cisco brand, reliability and support.

Ordering Information

Table 1. Cisco Catalyst 2960 Models with LAN Base Image

WS-C2960PD-8TT-L	8 10/100 with 1 10/100/1000 PoE input port
WS-C2960-8TC-L	8 10/100 and 1 dual-purpose uplink (10/100/1000BASE-T or SFP port); compact form factor
WS-C2960-24TT-L	24 10/100 and 2 10/100/1000
WS-C2960-24TC-L	24 10/100 and 2 dual-purpose uplinks
WS-C2960-24PC-L	24 10/100 PoE and 2 dual-purpose uplinks
WS-C2960-24LT-L	24 10/100 (PoE supported on 8 ports) and 2 10/100/1000
WS-C2960-48TT-L	48 10/100 and 2 10/100/100
WS-C2960-48TC-L	48 10/100 and 2 dual-purpose uplinks
WS-C2960G-8TC-L	7 10/100/1000 and 1 dual-purpose uplink; compact form factor
WS-C2960G-24TC-L	20 10/100/1000 and 4 dual-purpose uplinks
WS-C2960G-48TC-L	44 10/100/1000 and 4 dual-purpose uplinks

Table 2. Cisco Catalyst 2960 Models with LAN Lite image

WS- C2960-8TC-S	8 10/100 and 1 dual-purpose uplink
WS-C2960-24-S	24 10/100 ports
WS-C2960-24TC-S	24 10/100 and 2 dual-purpose uplinks
WS-2960-24PC-S	24 10/100 PoE ports and 2 dual-purpose uplinks
WS-2960-24LC-S	24 10/100 (8 port PoE) and 2 dual-purpose uplinks
WS-C2960-48TT-S	48 10/100 and 2 10/100/1000
WS-C2960-48TC-S	48 10/100 and 2 dual-purpose uplinks
WS-2960-48PST-S	48 10/100 POE ports and 2 10/100/1000 and 2 SFP uplinks

Pricing Information

For pricing information, visit https://tools.cisco.com/qtc/pricing/MainServlet.

Learn More About Cisco Catalyst 2960 Series Switches

For more information, visit http://www.cisco.com/go/catalyst2960.

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C45-348906-07 05/09

Cisco SGE2010P 48-Port Gigabit Switch: PoE
Cisco Small Business Managed Switches

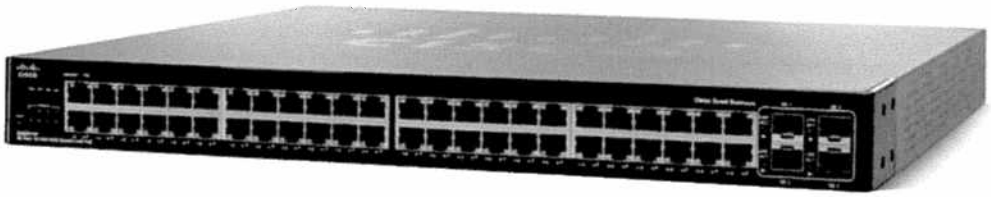
For Small Business

Performance and Reliability to Support Small Business Networks

Highlights

- 48 high-speed ports optimized for the network core or to support bandwidth-intensive applications
- Power over Ethernet easily and cost-effectively powers wireless access points, video cameras, and other network-connected endpoints
- Resilient clustering provides the ability to manage several switches as a single switch to support growing businesses
- Strong security protects network traffic to keep unauthorized users off the network
- Simplified, web-based management for easy installation and configuration
- Limited lifetime warranty

Figure 1. Cisco SGE2010P 48-Port Gigabit Switch: PoE



Product Overview

The Cisco® SGE2010P 48-Port Gigabit Switch (Figure 1) allows you to expand your network securely. Web-based configuration of the switch is secured using SSL. The Cisco SGE2010P is optimized for maximum system availability, with fully redundant stacking, redundant power options, and dual images for resilient firmware upgrades. The switch helps secure the network through IEEE 802.1Q VLANs, IEEE 802.1X port authentication, access control lists (ACLs), denial-of-service (DoS) prevention, and MAC-based filtering. The enhanced quality of service (QoS) and traffic-management features help ensure clear and reliable voice and video communications.

For wireless or voice over IP (VoIP) deployments, the Cisco SGE2010P supports the IEEE 802.3af standard for Power over Ethernet (PoE). Automatic load sensing enables the circuitry to detect PoE on the end device before providing power. For safety, each port has independent overload and short-circuit protection, along with LED indicators to show power status. It provides 15W of available PoE power on up to 24 of the Gigabit Ethernet ports for powering PoE-enabled wireless access points or VoIP handsets. The maximum PoE available per device for all ports is 360W.

The Cisco SGE2010P provides resilient stacking for up to four units, or 192 ports. A stack of units is managed as a single switch with one web management interface. The Cisco SGE2010P can coexist in a stack with the Cisco SGE2000 and SGE2000P 24-Port Gigabit Switches, and the Cisco SGE2010 48-Port Gigabit Switch, for a maximum of 192 ports in a

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stack. The stacking capability includes master/backup unit behavior, ring and chain architecture, and hot insertion and removal of units.

Software running on the Cisco SGE2010P interacts with provisioning, management, and security software on both the site's services router and the service provider's equipment. This interaction provides a simple, one-step installation and access to web-administered features for the administrator and users. Simple, affordable network operations throughout the network's lifetime are the result.

Features

- Forty-eight 10/100/1000 Ethernet ports
- 4 mini Gigabit Interface Converter (mini-GBIC) slots (shared with 4 Ethernet ports) for fiber Gigabit Ethernet expansion
- IEEE 802.3af PoE delivered over any of the forty-eight 10/100/1000 ports
- 15.4W available power to a Gigabit Ethernet port for PoE-enabled wireless access point or VoIP handsets (maximum per-device PoE delivery of 360W available for all ports)
- Dual images for resilient firmware upgrades
- 96 Gbps nonblocking, store-and-forward switching capacity
- Simplified QoS management using 802.1p, differentiated services (DiffServ) or type of service (ToS) traffic prioritization
- Power redundancy when used with the Cisco RPS1000 380W Redundant Power Supply Unit
- Fully resilient stacking provides optimized growth with simplified management
- ACLs for granular security and QoS implementation
- Configuration and monitoring from a standard web browser
- Secure remote management of the switch via Secure Shell (SSH) and SSL encryption
- 802.1Q-based VLANs enable segmentation of networks for improved performance

Specifications

Table 1 contains the specifications, package contents, and minimum requirements for the Cisco SGE2010P 48-Port Gigabit Switch.

Table 1. Specifications for the Cisco SGE2010P 48-Port Gigabit Switch: PoE

Feature	Description
Specifications	
Ports	48 RJ-45 connectors for 10BASE-T/100BASE-TX/1000BASE-T with 4 Gigabit combo ports shared between mini-GBIC ports; console port; auto medium dependent interface (MDI) and MDI crossover (MDI-X); auto negotiate/manual setting; RPS port for connecting to redundant power supply unit
Buttons	Reset button
Cabling type	Unshielded twisted pair (UTP) Category 5 or better for 10BASE-T/100BASE-TX; UTP Category 5e or better for 1000BASE-T
LEDs	PWR, Fan, Link/Act, PoE, Speed, RPS, Master, Stack ID 1 through 8
PoE	• IEEE 802.3af PoE on delivered over any of the 48 10/100/1000 ports • Maximum power of 15.4W to an Ethernet port – 360W total available to all ports with regular AC power, 280W total available with RPS
Performance	
Switching capacity	96 Gbps nonblocking
Forwarding capacity	71.4 mpps (64-byte packets)
Stacking	

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Feature	Description
Stack operation	• Up to 192 ports in a stack • Hot insertion and removal • Ring and chain stacking options • Master and backup master for resilient stack control • Auto-numbering or manual configuration of units in stack
Layer 2	
MAC table size	8000
Number of VLANs	256 active VLANs (4096 range)
VLAN	Port-based and 802.1Q tag-based VLANs; protocol-based VLAN; management VLAN; multicast TV VLAN; Private VLAN Edge (PVE); Generic VLAN Registration Protocol (GVRP)
Head-of-line (HOL) blocking	HOL blocking prevention
Layer 3	
Layer 3 options	Static routing; classless interdomain routing (CIDR); 60 static routes; IPv4; forwarding in silicon – wire-speed forwarding of Layer 3 traffic
IPv6	
IPv6 options	IPv6 over Ethernet, dual stack, IPv6 over IPv4 network with Intra-Site Automatic Tunnel Addressing Protocol (ISATAP) tunnel, IPv6 neighbor discovery, stateless address configuration, maximum transmission unit (MTU) discovery, WEB, SSL, Telnet, Ping, Traceroute, Simple Network Time Protocol (SNTP), Trivial File Transfer Protocol (TFTP), Simple Network Management Protocol (SNMP), RADIUS, access control lists (ACLs), QoS, protocol based VLANs
Management	
Web user interface	Built-in web user interface for easy browser-based configuration (HTTP/HTTPS)
SNMP	SNMP versions 1, 2c, and 3 with support for trap
SNMP MIBs	RFC1213 MIB-2, RFC2863 interface MIB, RFC2665 Ether-like MIB, RFC1493 bridge MIB, RFC2674 extended bridge MIB (P-bridge, Q-bridge), RFC2819 RMON MIB (groups 1, 2, 3, and 9 only), RFC2737 entity MIB, RFC 2618 RADIUS client MIB, RFC 1215 traps
Remote Monitoring (RMON)	Embedded RMON software agent supports 4 RMON groups (history, statistics, alarms, and events) for enhanced traffic management, monitoring, and analysis)
Firmware upgrade	• Web browser upgrade (HTTP/HTTPS) and TFTP • Dual images for resilient firmware upgrades
Port mirroring	Traffic on a port can be mirrored to another port for analysis with a network analyzer or RMON probe.
Other management	Traceroute; single IP management; SSL security for web user interface; SSH; RADIUS; port mirroring; TFTP upgrade; Dynamic Host Configuration Protocol (DHCP) client; BOOTP; SNTP; Xmodem upgrade; cable diagnostics; Ping; syslog; Telnet client (SSH secure support)
Security	
IEEE 802.1X	802.1X—RADIUS authentication, MD5 hash; guest VLAN; single/multiple host mode
ACLs	• Drop or rate limit based on source and destination MAC or IP address, protocol, port, VLAN, differentiated services code point (DSCP)/IP precedence, TCP/ User Datagram Protocol (UDP) source and destination ports, 802.1p priority, Ethernet type, Internet Control Message Protocol (ICMP) packets, Internet Group Management Protocol (IGMP) packets, DHCP snooping, Address Resolution Protocol (ARP) inspection, and IP source address guard • Up to 1018 rules
Advanced Security	• IP Source Guard • STP Root Guard • Dynamic ARP Inspection • DHCP Snooping
Availability	
Link aggregation	Using IEEE 802.3ad Link Aggregation Control Protocol (LACP), up to 8 ports in up to 8 groups
Storm control	Broadcast, multicast, and unknown unicast
Spanning Tree	IEEE 802.1D Spanning Tree, IEEE 802.1w Rapid Spanning Tree, IEEE 802.1s Multiple Spanning Tree, and Fast Linkover
DoS prevention	DoS attack prevention
IGMP (version 1 and 2) snooping	Limits bandwidth-intensive multicast traffic to only the requestors; supports 256 multicast groups
Power redundancy	Connection to RPS unit for power redundancy

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Feature	Description
Quality of service	
Priority levels	4 hardware queues
Scheduling	Priority queuing and weighted round-robin (WRR)
Class of service	Port-based; 802.1p VLAN priority-based; IPv4/v6 IP precedence/ToS/DSCP based; DiffServ; classification and re-marking ACLs
Rate limiting	Ingress policer; egress rate control; per VLAN
Statistics	16 meters
Standards	802.3 10BASE-T Ethernet, 802.3u 100BASE-TX Fast Ethernet, 802.3ab 1000BASE-T Gigabit Ethernet, 802.3z Gigabit Ethernet, 802.3x flow control, 802.3ad LACP, 802.3af PoE, 802.1D Spanning Tree Protocol (STP), 802.1Q/p VLAN, 802.1w Rapid STP, 802.1s Multiple STP, 802.1x port access authentication
Environmental	
Dimensions **W x D x H**	17.32 x 14.70 x 1.73 in. (440 x 375 x 44 mm)
Unit weight	10.89 lb (4.94 kg)
Power	100–240V 47–63 Hz, internal, universal; also equipped with external redundant power supply connector for external power supply, –48VDC
Certification	UL (UL 60950), CSA (CSA 22.2), CE mark, FCC Part 15 (CFR 47) Class A
Operating temperature	32°to 104°F (0°to 40°C)
Storage temperature	–4°to 158°F (–20°to 70°C)
Operating humidity	10% to 90%, relative, noncondensing
Storage humidity	10% to 95%, relative, noncondensing
Package Contents	
• Cisco SGE2010P 48-Port Gigabit Switch • AC power adapter with power cord • Two rack-mounting kits with eight screws • CD-ROM with user documentation (PDF) included • Registration card • Console cable	
Minimum Requirements	
• Web browser: Mozilla Firefox version 1.5 or later, Microsoft Internet Explorer version 5.5 or later • Category 5 Ethernet network cable • TCP/IP, network adapter, and network operating system (such as Microsoft Windows, Linux, or Mac OS X) installed on each computer in the network	
Product Warranty	
Limited lifetime warranty with return to factory replacement, one year telephone support and software fixes for the warranty term.	

Service & Support

Cisco Small Business switches are backed by the Cisco Small Business Support Service, which provides affordable peace-of-mind coverage. This subscription-based service helps you protect your investment and derive maximum value from Cisco Small Business products. Delivered by Cisco and backed by your trusted partner, this comprehensive service includes software updates, access to the Cisco Small Business Support Center, and expedited hardware replacement.

Cisco Small Business products are supported by professionals in Cisco Small Business Support Center locations worldwide who are specifically trained to understand your needs. The Cisco Small Business Support Community, an online forum, enables you to collaborate with your peers and reach Cisco technical experts for support information.

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Cisco Limited Lifetime Hardware Warranty

This Cisco Small Business product offers a limited lifetime hardware warranty with return to factory replacement and a 1-year limited warranty for fans and power supplies. In addition, Cisco offers telephone technical support at no charge for the first 12 months following the date of purchase and software bug fixes for the warranty term. To download software updates, go to: http://www.cisco.com/cisco/web/download/index.html.

Product warranty terms and other information applicable to Cisco products are available at http://www.cisco.com/go/warranty.

For More Information

For more information on Cisco Small Business products and solutions, visit: http://www.cisco.com/smallbusiness.

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Cisco Limited 5-Year Hardware and 1-Year Software Warranty Terms

The following are special terms that apply to your hardware and software warranty as well as services you may use during the warranty period. Your formal Warranty Statement appears in the *Cisco Information Packet* that accompanies your Cisco product.

Hardware Warranty Duration: Five (5) Years

Software Warranty Duration: One (1) Year

Hardware Replacement, Repair, or Refund Procedure: Cisco or its service center will use commercially reasonable efforts to ship a replacement part for delivery within fifteen (15) working days after receipt of the defective product at Cisco's site. Actual delivery times of replacement products may vary depending on Customer location.

Cisco reserves the right to refund the purchase price as its exclusive warranty remedy.

To Receive a Return Materials Authorization (RMA) number: Please contact the party from whom you purchased the product. If you purchased the product directly from Cisco, contact your Cisco Sales and Service Representative.

Complete the form below and keep for ready reference.

Product purchased from:	
Their telephone number:	
Product Model and Serial number:	
Maintenance Contract number:	

Product warranty terms and other information applicable to Cisco products are available at the following URL:

http://www.cisco.com/go/warranty

Consult the above website or your Cisco Sales and Service Representative for a complete listing of Cisco products and applicable warranties.

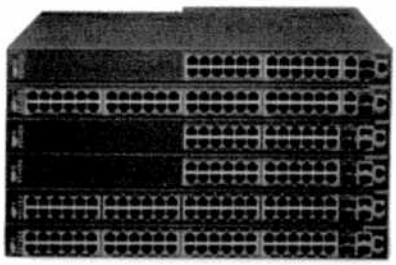
78-13712-01D0

The Avaya Ethernet Routing Switch 4000 Series is a Stackable Chassis system providing high-performance, convergence-ready, secure and resilient Ethernet switching connectivity. Available as a range of 17 model variants supporting 10/100 and 10/100/1000 switching and routing, Power-over-Ethernet, Power-over-Ethernet+ and 10 Gigabit Ethernet uplink options, the Ethernet Routing Switch 4000 Series is ideally suited for Enterprise wiring closet and other network edge deployments.

AVAYA

The Power of We™

Ethernet Routing Switch 4000 Series



Highlights Of The Ethernet Routing Switch 4000 Series

- **Always-on** – Best in class end-to-end resiliency solution, hot-swappable unit replacement within a Stackable Chassis and integrated power redundancy.
- **Convergence-ready** – Support for PoE and PoE+, optimized for high-definition video surveillance, true plug and play capabilities for IP Phone deployments, advanced QoS capabilities.
- **Energy efficient** – On average 36% more more energy efficient than competitive solutions,[1] energy saver functionality further reduces power consumption for both Switch and IP Phone without losing telephony connectivity.
- **Powerful** – Wire-speed performance, true pay-as-you-grow Stackable Chassis capabilities, delivering up to 400 ports and 384 Gbps of virtual backplane throughput.
- **Secure** – Standards-based 802.1x with integration with Avaya's Identity Engines portfolio for centralized, policy-based authenticated network access.
- **Flexible** – Mix-and-match best-in-class stacking capabilities; PoE and PoE+ and optional 1GbE and 10GbE SFP+ uplinks.
- **Future-ready** – Hardware ready for advanced services such as Wireless Split-Plane and Virtual Services Fabric; emerging technologies in Avaya's Virtual Enterprise Networking Architecture strategy.

The Ethernet Routing Switch 4000 Series provides resilient Stacking Chassis, Layer 2 switching and dynamic Layer 3 routing, plus many industry leading convergence features. This enables the Ethernet Routing Switch 4000 Series to deliver the scalability and resiliency required by today's application-driven enterprise networks while reducing total operational costs.

Intelligent Stackable Chassis solution delivering performance, scalability, resilience and flexibility

No one knows stacking like Avaya. We introduced our first Stackable Chassis product in 1998 and have been perfecting the technology ever since. We were the first and only vendor to break the Terabit

boundary with our ERS 5600 Series products and we've differentiated ourselves in the industry by ensuring that our Stackable Chassis perform like a traditional modular chassis implementation. We offer genuine chassis-like features including true pay-as-you-grow scaling and in service maintenance and restoration. From a management perspective, our Stackable Chassis looks like a single network entity – utilizing only a single IP address to dramatically simplify software upgrades. We also offer true investment protection with the ability to mix-and-match any units within the ERS 4000 Series into a Stackable Chassis.

High performance architecture with true pay-as-you grow scaling

Our Stackable Chassis products combine non-blocking internal switching fabrics with a high-speed virtual backplane architecture to deliver a high performance solution that scales proportionally as new switches are added. The ERS 4000 Series scales up to 384Gbps of virtual backplane throughput by simply cabling together up to 8 units. Adding a new unit to the Stack Chassis is as easy as cabling in a new member then extending the appropriate configuration. The necessary software images and the configuration file are automatically downloaded to the new unit and then brought on-line without any user intervention.

To ensure wire-speed performance, our Stackable Chassis architecture is based on a shortest-path algorithm for optimal data flow across the stack. Unlike competitive solutions that use unwieldy logical ring or token technology, Avaya allows traffic to flow upstream and downstream simultaneously from every switch connected to the virtual backplane, optimizing performance, resiliency.

ERS 4000 Series v5.6 introduces 6 additional models into the ERS 4000 product family.

New Model Highlights:

- IEEE 802.3at-compatible PoE+ for both Fast Ethernet and Gigabit Ethernet connected end points.
- SFP+ ports, supporting 1 and 10 Gigabit connections, on the new 4800 models.
- Redundant field-replaceable AC power supplies on all new models.
- Increased CPU and FLASH memory for greater investment protection.
- Full Stackable Chassis compatibility with all existing 4500 models.
- 4800 models are hardware-ready to support advanced, next-generation network edge technologies such as IPv6, Wireless Split-Plane and the Virtual Services Fabric.

New ERS 4500 PoE+ Models for Fast Ethernet Connectivity:

- **Ethernet Routing Switch 4526T-PWR+** - 24 port 10/100 ports with PoE/PoE+ plus 2 10/100/1000/SFP uplink ports.
- **Ethernet Routing Switch 4550T-PWR+** - 48 port 10/100 ports with PoE/PoE+ plus 2 10/100/1000/SFP uplink ports.

New ERS 4800 models for Gigabit Ethernet Connectivity:

- **Ethernet Routing Switch 4826GTS** - 24 ports of 10/100/1000 ports including 2 shared SFP Uplink ports, plus 2 additional SFP+ Uplink ports.
- **Ethernet Routing Switch 4826GTS-PWR+** - 24 ports of 10/100/1000 ports with PoE/PoE+ including 2 shared SFP Uplinks ports, plus 2 additional SFP+ Uplink ports.
- **Ethernet Routing Switch 4850GTS** - 48 ports of 10/100/1000 ports including 2 shared SFP Uplink ports, plus 2 additional SFP+ Uplink ports.
- **Ethernet Routing Switch 4850GTS-PWR+** - 48 ports of 10/100/1000 ports with PoE/PoE+ and 2 shared SFP Uplink ports, plus 2 additional SFP+ Uplink ports.

The v5.6 feature release also includes a wide range of software enhancements including: ECMP (Equal Cost Multi-Path) Support, IGMPv3 Snooping and Proxy, increased VLAN scaling and many more enhancements around convergence, operations and security.

and resource utilization. Avaya has an additional advantage in that we honor Quality-of-Service settings as traffic passes over the stacking connections – providing applications with optimal performance, and a positive end user experience.

All ERS 4000 models come with two in-built Stackable Chassis interfaces for simple, cost-effective and efficient connectivity. Unlike comparative offerings which daisy chain low-speed interfaces, this design frees uplink ports for dedicated connectivity to the backbone. In addition to the stacking cables, a return cable is also used to protect against any port, unit or cable failures.

In-service maintenance and restoration

Virtual hot swap capabilities ensure that a failure in any unit of the Stackable Chassis is quickly and easily rectified. Pioneered in modular switches, virtual hot swap is available in Avaya's Stackable Chassis solutions enabling immediate like-for-like unit replacement without any impact to the existing traffic or any units. If a failure occurs, neighboring switches automatically wrap their fabric connections to help ensure that other switches within the Stackable Chassis are not impacted. The failed unit is simply disconnected from the virtual backplane and, without pre-staging of software or configuration, a like-for-like unit is inserted, cabled, and powered-up. The Automatic Unit Replacement (AUR) process self-manages software and configuration downloads to the new switch then brings it online, without the need for an engineer to configure or manage the process.

Further complementing the Stackable Chassis architecture, the Avaya ERS 4000 Series supports standards-based 802.3ad Link Aggregation as well as its own Multi-Link Trunking technology that allows grouping of ports to form high-speed trunks/aggregations. These bundles or groups of ports can be distributed across different units in the same Stackable Chassis, delivering higher levels of resilience in case of link or Switch failure to help ensure that traffic gets to its destination.

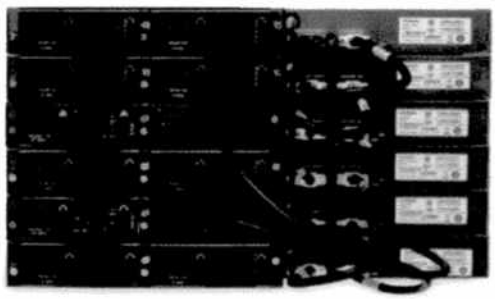
Distributed real-time monitoring of the Stackable Chassis provides an at-a-glance view of operational status and health which further enhances operational and management simplicity.

Centralized management

From a management perspective, our Stackable Chassis appears as a single networking entity – utilizing only a single IP Address. This can significantly reduce the number of switches to be managed within the network as a stack of up to 8 switches can be managed just as easily as a single switch. All Ethernet Routing Switch 4000 models use the same software image, irrespective of model type. The image needs to be loaded only to the base unit of the Stackable Chassis which automatically loads it to other switches.

Flexible options

It's possible to mix and match any member of the ERS 4000 Series into a single Stackable Chassis. This allows customers to create the best mix of ports based on their specific requirements. Fast Ethernet and Gigabit Ethernet models can be interconnected; PoE and PoE+ models can be also be mixed in the same Stackable Chassis. The ERS 4000 Series can scale up to 8 units and 400 ports with up to 384Gbps of virtual backplane bandwidth.



ERS 4000 Stackable Chassis

Highlights of Avaya's Stackable Chassis technology:

True pay-as-you-grow scaling: Extending capacity is easy. Simply cable a new unit into the virtual backplane and the configuration is automatically updated.

Scalable performance: The high performance design of Avaya's Switches along with their high-speed interfaces (up to 384Gbps) helps ensure that the Stackable Chassis scales proportionally as each new unit is added.

Optimal path forwarding: The shortest, most optimal path is chosen for each flow of traffic with QoS being maintained across the virtual backplane.

No single point-of-failure: Stackable Chassis operations are unaffected by the failure of any individual unit and units can easily be replaced within minutes.

Centralized management: Single IP address for the entire Stackable Chassis for simplified management.

Flexible stacking options: Mix-and-match any member of the ERS 4000 Series into a single Stackable Chassis.

Convergence-ready for UnifiedCommunications, High-Definition Video and more

For businesses looking to consolidate all forms of communication – voice, video and data – on a single infrastructure, the Avaya ERS 4000 Series delivers functionality that simplifies convergence of these technologies.

Choice of PoE or PoE+ to power your devices

Through support for both the IEEE 802.3af PoE and 802.3at PoE+ standards, ERS 4000 products are able to power IP phones, wireless access points, networked high-definition CCTV cameras and other devices. This eliminates the need for separate power supplies for each unit, enabling reduced cabling and management costs for adds, moves, or changes.

Customers have the flexibility of choosing a PoE capable device or a PoE/PoE+ capable device. Having PoE+ support gives customers investment protection even though the driver for higher power usage is not present in many of the end devices typically being used.

Plug and play for IP phones

One of the main benefits offered by the ERS 4000 Series is plug and play support for IP phones enabled through a combination of IEEE 802.1ab Link Layer Discovery Protocol (LLDP) and Avaya's Auto Discovery and Auto Configuration (ADAC) capability.

With these features enabled the ERS 4000 can automatically provision end devices such as IP Phones for simplified deployments and moves. The ERS 4000 dynamically applies the correct VLAN and QoS to both the IP phone and the attached edge port. When the phone is moved to another location, the configuration is automatically updated. In addition, QoS is automatically provisioned on the ERS 4000 uplink so that voice is given top priority from the wiring closet to the network core. These features save network operators time and can dramatically reduce the likelihood of a provisioning error during a large IP phone deployment.

The ERS 4000 also learns the identification, configuration, and capabilities of neighboring devices and provides these details to the network management system. This enables the system to have the most up-to-date physical view of the network so that communication configuration mismatches are detected and corrected quickly.

Sophisticated QoS capabilities

The ERS 4000 Series delivers unsurpassed control for networks supporting a wide range of different application types. The ERS 4000 classifies, prioritizes and marks LAN IP traffic using up to eight hardware queues (2 strict priority and 6 weighted round robin) on every port – including our Stackable Chassis ports.

Classification can be done based on MAC address, IP ToS/DSCP marking, IP source /destination address or subnets, TCP/UDP source/destination port/port range, IEEE 802.1p user priority bits, ingress source port, IP Protocol ID (e.g., TCP, UDP, IGMP),

Requirement	ERS 4500 Models	ERS 4500 POE+ Models	ERS 4800 Models
Fast Ethernet to the desktop	Yes	Yes	Yes
Gigabit Ethernet to the desktop	Yes	No	Yes
IEEE 802.3 af PoE	Yes	Yes	Yes
IEEE 802.3 at PoE+	No	Yes	Yes
10 Gig uplink sockets	XFP on certain models	No	SFP+
Redundant power	Yes (available through external RPS 15)	Yes (internal field-replaceable PSU's)	Yes (internal field-replaceable PSU's)
Hardware-ready for advanced services (Wireless Split Plane, Virtual Services Fabric)	No	No	Yes

With 17 different models delivering a broad range of capabilities, the ERS 4000 Series meets diverse edge requirements.

EtherType (e.g., IP, IPX) or the IEEE 802.1Q VLAN ID. Comprehensive traffic policing and traffic shaping are also supported.

Most importantly we make QoS management intuitive through the use of Enterprise Policy Manager.[2] By centralizing QoS management, Enterprise Policy Manager can reduce thousands of CLI or web transactions to a few simple actions through intuitive workflows.

Integrated field replaceable AC power supplies for ERS 4800 and ERS 4500 POE+ models

Always-On Networking

In the era of 24x7 business operation, providing always-on access to applications is of the utmost importance. A pioneer in this area, Avaya provides cost-effective, resilient campus solutions for any size enterprise - from very large to very small.

Multi-link and Distributed Trunking

The ERS 4000 Series supports 802.3ad Link Aggregation Groups as well as its own Multi-Link and Distributed Multi-Link Trunking implementations. Groups of links between the ERS 4000 and another device can be aggregated to enhance bandwidth and resiliency through active redundant links. Additionally, trunked ports can span multiple units of a Stack Chassis enabling fail-safe connectivity to mission-critical servers and the network core.

Distributed Multi-Link Trunking

802.3ad Link Aggregation Groups can be combined with Switch Clustering (leveraging Avaya's Split Multi-Link Trunking technology) on our core products (VSP 9000, ERS 8800/8600/8300 and ERS 5000). This creates a self-healing network that maximizes reliability and availability. Because all ports remain active, multiple connections to the network core enable customers to double their network bandwidth without incurring additional cost.

Virtual Router Redundancy Protocol

The ERS 4000 Series supports the Virtual Router Redundancy protocol. This feature enables automatic assignment of available IP routers to participating hosts which increases the availability and reliability of routing paths via automatic default gateway selections on an IP sub network.

Detection of link failures and loops

The ERS 4000 Series support a number of features that help detect and prevent link failures and loops. Avaya's Virtual Link Aggregation Control Protocol (VLACP) detects end-to-end failures by propagating link status between ports that are logically connected point-to-point across an intermediate network.

For loop detection, the ERS 4000 supports Simple Loop Prevention Protocol (SLLP) Guard. This feature extends Avaya's loop prevention mechanism of SLPP to the edge of the network for improved network resiliency. SLPP-guard operates in conjunction with SLPP in the network core or distribution layer and is designed to detect unusual loop scenarios which are not detected by other methods such as Spanning Tree. SLPP-guard immediately detects loops and disables affected ports according to the configured timer. All SLPP-guard actions are logged via Syslog and SNMP traps so that the cause of the loop can be diagnosed accurately.

Redundant power support

The ERS 4500 PoE+ models and the ERS 4800 models (both PoE/PoE+ and non-power enabled) support field replaceable AC power supplies for improved redundancy and uptime. This power supply design offers N+1 power redundancy and/or supplementary PoE/PoE+ power budget, saving valuable rack space and enabling reduced system, servicing and sparing costs. Non-power models such as the ERS 4826GTS and the ERS 4850GTS utilize two 300 Watt Power Supply Units for redundancy (same as the ERS 5600 Series products) while the PoE/PoE+ devices, such as the ERS 4526T-PWR+, ERS 4550T-PWR+, ERS 4826GTS-PWR+and ERS 4850GTS-PWR+ utilize two 1000 Watt Power Supply Units for redundancy.

The traditional ERS 4500 models support redundant power via Avaya's Redundant Power Supply 15 (RPS 15). This allows the ERS 4500 to deliver the stable, redundant power support required by today's high-availability, mission-critical environments. The RPS 15 Chassis supports up to three 600 watt power supply modules, with each module providing redundant power support to one ERS 4500 PoE Switch or up to four non-PoE models.

Achieve your Green IT initiatives

Energy efficient by design

New regulations and rising awareness of the ever-increasing cost of electrical power keep energy efficiency top of mind. An innovator in this area, Avaya has built energy efficiency into many of its hardware products. In fact, independent testing indicates that Avaya LAN Switches, Call Servers, Gateways, Unified Messaging Servers and Gigabit IP Phones are typically more energy-efficient than competitive equipment. The ERS 4000 Series, for example, was found on average to be 36% more energy efficient than competitive solutions from Cisco, HP, and Juniper.[1] Because most Ethernet Switches operate 24x7, a 36% reduction in energy use goes a long way toward educing yearly total cost of ownership.

Power management solution that keeps all connected devices operational

Building on our energy efficient design, Avaya offers true power management capabilities on ERS 4000 Series switches with our Avaya Energy Saver feature. Avaya Energy Saver aligns consumption of energy with attributes such as building occupancy. Much like a lighting control system, it essentially "dims" energy consumption during off-peak periods.

PoE and PoE+ enabled devices can increase energy conservation because, when IP phones are connected to a PoE or PoE+ port, power consumption by the IP phone is reduced when the network is in to dimmed operation mode. When an Avaya IP phone is connected to the ERS 4000 and Avaya Energy Saver is active, the switch sends a proprietary 802.1AB TLV message to the phone that places the phone in maximum power conservation mode. Unlike some competitive solutions that actually disable the IP phone by turning ports off, IP phones remain operational when in power conservation mode.

Energy conservation by ERS 4000 series switches and the IP phones connected to them can reduce total cost of ownership while helping IT managers achieve their "Green IT" initiatives.

Energy analysis

Avaya Energy Saver can be embedded within the Avaya Enterprise Policy Manager[2] to provided centralized management of power consumption across all devices and endpoints. Network operators can perform energy analysis that not only shows peak energy usage and trending but also calculates real energy savings in terms of dollars and cents. A dashboard through which IT managers can drill down to specific ports and adjust ERS 4000 port speeds, as required, is also available.

Securing access at the edge

The Ethernet Routing Switch 4000 offers the highest level of security with authenticated network access that leverages IEEE 802.1x (Extensible Authentication Protocol (EAP) with extensions or devices MAC Address. Integration into Avaya's Identity Engines portfolio for centralized, policy-based access control is included along with secure management enabled through features such as Secure Shell (SSH), Secure Sockets Layer (SSL), Simple Network Management Protocol (SNMPv3), IP Manager List, Remote Authentication Dial-In User Service (RADIUS), and TACACS+ authentication. The ERS 4000 Series also offers numerous features that help prevent direct Denial of Service Attacks.

Authenticated Network Access

The ERS 4000 offers a wide range of flexible security options to help ensure that only authorized personnel can access the LAN. Through IEEE 802.1x-based EAP client or device MAC Address, network administrators control authentication and authorization for access to network resources. Ethernet Routing Switch 4000 can support authentication of multiple devices/users on a single port.

For example, if a user's PC connects into the network via an IP phone, the PC and the IP phone can be independently authenticated on the same port. And, if your company has visiting users, guest VLAN support allows non-authenticated users to use the network with access to predefined guest resources only, such as Internet access. ERS 4000 Series

also allows configuration of different servers to handle different RADIUS/802.1x functions.

When advanced, policy-based and centralized user/device authentication is required, the Avaya ERS 4000 can be used in conjunction with the innovative Avaya Identity Engines portfolio solution. This easy-to-deploy, policy-based solution assigns network access rights and permissions based on user role, where the user connects (local or remote) and now the user connects (wired or wireless). In this way, each connected device and user are known and are governed by device-specific security policies. For example, based on her network credentials, an employee using a corporate owned device will be granted full corporate access however, while using a non-corporate-owned device, she will be granted limited access.

As the number of employee-owned devices increases, Identity Engines can help network operators retain control and, by running device health checks and verifying user and device credentials, Identity Engines helps ensure that network access permission levels are enforced and adhered to without undue effort on the part of the IT staff.

Secure Management

The ERS 4000 Series supports Secure Shell (SSHv2) for strong authentication and encrypted communication and SSL, which is supported on our web-based Enterprise Device Manager. SNMPv3 provides user authentication and data encryption for secure configuration and monitoring while IP Manager List limits access to ERS 4000 management features via a list of IP Addresses or IP ranges/subnets, providing greater security and manageability.

Preventing Directed Attacks

Through advanced security services, the ERS 4000 Series actively protects against malicious network attacks including protection from snooping of DHCP services, verification and filtering of ARP traffic via in-hardware processing (Dynamic ARP inspection), restriction of IP traffic to registered end devices (IP Source Guard), and control of Spanning Tree BPDU flow within the network (BPDU Filtering). Also supported, MAC Security and Static MAC address assignment have the ability to disable MAC learning if required.

The ERS 4000 supports advanced packet classification and deep packet filtering of up to 128 bytes, helping block unwanted network traffic while forwarding mission-critical traffic efficiently.

The ERS 4000 is PCI 2.0 compliant and, as per the PCI 2.0 specification, authentication and logging takes place and can be captured and reported to mitigate any security risk of shared maintenance accounts.

Secure and simplified network management

Creating a flexible operational environment, the ERS 4000 Series can be managed by a variety of management tools:

- Highly intuitive industry-aligned Command Line Interface (CLI) that eases the transition from one vendor to another.
- GUI and Web-based, Enterprise Device Manager (EDM) is an element management tool that enables quick, easy configuration changes to a single device through a pictorial view of that device using either HTTP or HTTPS (Secure Web).

Consumerized IT

The move to "consumerized" IT has been described as penetration of the corporate network by employee-purchased mobile devices like iPhone, iPad, and Android phones. Whereas at one time employees had, at most, one device connecting to the corporate network, that number is expected to grow to 3, even 4 devices. Avaya Identity Engines helps network operators manage level of network access for this increasing number of devices by running device health checks and by verifying credentials of both user and device. Cost effective and easy to use, Avaya Identity Engines works in a multivendor environment.

- SNMP-based management (SNMP v1, 2 and 3) that provides an alternative standards based management approach and an interface for Configuration and Orchestration Manager.

- A wide array of Avaya management platforms that can be chosen based on the tasks the customer wishes to perform and the size of their environment.

These platforms include:

- **Configuration and Orchestration Manager (COM)** - Simplifies multi-element configuration via wizards and templates and provides network discovery, device backup, audits configuration changes, and bulk configuration management.

- **Enterprise Device Manager** – Simple on-switch GUI-based interface enabling simple device based provisioning.

- **Virtualization Performance and Fault Manager[2] (VPFM)** - Monitors and audits network performance, provides discovery and inventory, and troubleshoots network issues, which can minimize events and reduce network downtime. VPFM supports multi-vendor environments and proactive monitoring, helping to identify issues before they affect the network.

- **Enterprise Policy Manager[2] (EPM)** - Enables end-to-end policy provisioning to optimize network performance, define QoS filters, and deploy traffic and security filtering.

- **IP Flow Manager[2] (IPFM)** - Provides insight into network utilization, top applications, peak usage, and traffic patterns to help diagnose problems at the network and application level through use of standards-based IPFIX.

Designed for the next-generation edge

ERS 4800 models have been architected to support the advanced services required in a next-generation campus edge solution including support for IPv6 routing and advanced innovative Avaya services such as Wireless Split-Plane and the Virtual Services Fabric.

Avaya Virtual Services Fabric[3]

The ERS 4800 models are hardware-ready to support the Avaya Virtual Enterprise Network Architecture (VENA) Virtual Services Fabric which will extend the reach of Virtualized Services from the Data Center all the way to the campus edge. This provides a consistent enterprise-wide virtualization architecture that is simpler, more adaptive and more reliable – while avoiding the complexity associated with interconnecting different forms of technology for different areas of the network. Furthermore, as Virtual Desktop Infrastructure becomes more prevalent, extension of the Virtual Services Fabric to the campus edge will create the most efficient user-to-server interconnection and enabling enterprises to present business applications (that reside in the Data Center) transparently to thin clients with optimal performance. Ultimately, this will allow enterprises to save money budgeted for desktop support and maintenance costs without sacrificing desktop application performance.

Avaya Wireless Split-Plane[3]

The campus edge of the future will to need to address two major transitions: (1) wireless displacing wired as the primary means of network access (2) a proliferation of high-definition video applications. Wireless Split-Plane, an Avaya innovation, helps enterprises prepare for these changes by decoupling the wireless control functionality from the application data. This architecture, which can be imbedded directly into the Ethernet Switch infrastructure, eliminates the performance bottleneck inherent in today's centralized Wireless LAN architectures (traffic hair pinning through controllers) and ensures that wireless data traffic takes the most optimal path from source to destination. And, because it enables common hardware reuse, fewer network components, and optimized scalability, it can lower operating costs.

Avaya VENA Virtual Services Fabric: Simple, Dynamic, Adaptive

Deploying Avaya's Virtual Services Fabric allows enterprises to greatly simplify creation and configuration of their next generation networks. It creates a multipath Ethernet network that relies on Intermediate System-to-Intermediate System (IS-IS), a proven carrier-grade link state protocol, to dynamically build the topology between nodes – which keeps provisioning at the edge of the network. This can save network administrators time and effort, and virtually eliminate human error.

This architecture gives network operators the flexibility they need to add network capacity or a new link, and have them be automatically discovered with no impact on any existing services. Adding new services or changing existing services can be completed more quickly and easily by provisioning each end point. The network does the rest.

Lifetime warranty

Avaya includes industry-leading warranty services for our portfolio of Stackable Chassis Switches, including Avaya ERS 4000 Series products. The warranty includes complimentary next-business-day shipment of failed units for the life of the product (including fans and power supplies), next-business-day shipping worldwide on replacement of failed hardware, and basic technical support as follows: Level 1 for the supported lifecycle of the product and up to Level 3 for the first 90 days after purchase. This includes support for the shipped software version, with an option to purchase the Software Release Service for access to new feature releases and additional advanced hardware replacement programs.

Summary

Avaya is positioned to provide an end-to-end solution for today's converged networks and for tomorrow's networks. The Ethernet Routing Switch 4000 Series, along with other Avaya products, can increase profitability and productivity, streamline business operations, lower costs and help your business gain a competitive edge.

Learn more

To learn more about the Ethernet Routing Switch 4000 series, please contact your Avaya Account Manager or Avaya Authorized Partner. Or, visit us online at **avaya.com**.

Redundant Power for the ERS 4500 Models	
AA0005017-E5	Redundant Power Supply 15 Chassis - Supports up to three RPS 15 Power Supplies
AA0005?19-E5	Redundant Power Supply 15 - 600 Watt Power Supply Module up to three can be installed in Chassis
AA0005018-E6	Redundant Power Supply 15 - Connecting Cable (1.8m/6ft) for a Single ERS 4626T-PWR, 4550T-PWR, 4526GTX-PWR, 4548GT-PWR, 5520-24T-PWR, 5520-48T-PWR, 5530 - (Does not require separate DC-DC converter)
AA0005020-E6	Redundant Power Supply 15 - Long Connecting Cable (7.6m/25ft) for up to 4 x ERS 4526FX, 4526T, 4550T, 4524GT, 4526GTX, 4548GT, 5510-24T, 5510-48T (Requires separate DC-DC converter for connection switch)
AA0005021-E6	Redundant Power Supply 15 - Short Connecting Cable (3m/10ft) for up to 4 x ERS 4526FX, 4526T, 4550T, 4524GT, 4526GTX, 4548GT, 5510-24T, 5510-48T. (Requires separate DC-DC converter for connection switch)

Notes:

- The seventh character (?) of the order number must be replaced with the proper letter to indicate desired product nationalization.

Power Supplies for ERS 4500 PoE+ and ERS 4800 Models	
AL1905?21-E6	1000W AC PoE+ Power Supply. For use in ERS 4000 PWR+ models (ERS 4526T-PWR+, 4550T-PWR+, 4826GTS-PWR+, 4850GTS-PWR+)
AL1905A08-E5	300W AC Power Supply. For use in the ERS 4826GTS, 4850GTS and WL8180, WL8180-16L wireless controllers

Notes:

- The seventh character (?) of the order number must be replaced with the proper letter to indicate desired product nationalization.

Software	
AL4516001	Advanced License for 1 Switch/Stackable Chassis
AL4516002	Advanced License for up to 10 Switches/Stackable Chassis

Footnotes:

[1] Miercom, August 2011

[2] Device support limited to traditional ERS 4500 series models. Support for ERS 4500 PoE+ and ERS 4800 models to be added at a later date.

[3] Future capability on ERS 4800 Series Models

About Avaya

Avaya is a global provider of business collaboration and communications solutions, providing unified communications, contact centers, data solutions and related services to companies of all sizes around the world. For more information please visit **www.avaya.com**.

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AVAYA

The Power of We™

Avaya Ethernet Routing Switch 4500 Series

The Avaya Ethernet Routing Switch 4500 Series is a Stackable Chassis system providing high-performance, convergence-ready, secure and resilient Ethernet switching connectivity. Available in 11 model variants supporting 10/100 and 10/100/1000 connectivity, switching and routing, Power-over-Ethernet, and 10 Gigabit Ethernet uplink options, the Ethernet Routing Switch 4500 Series is ideally suited for Enterprise wiring closet and other network edge deployments. The Ethernet Routing Switch 4500 are part of the 17 model Ethernet Routing Switch 4000 product family that meets your needs by enabling true mix and match capabilities.

Highlights Of The Ethernet Routing Switch 4500 Series

- **Always-on** – Best in class end-to-end resiliency solution, hot-swappable unit replacement within a Stack Chassis and integrated power redundancy.
- **Convergence-ready** – Support for PoE, true plug and play capabilities for IP phone deployments, advanced QoS capabilities.
- **Energy efficient** – On average 36% more energy efficient than competitive solutions,* energy saver functionality further reduces power consumption for both switch and IP phone without losing telephony connectivity.
- **Powerful** – Wire-speed performance, true pay-as-you-grow Stack Chassis capabilities, delivering up to 400 ports and 384 Gbps of virtual backplane throughput.
- **Secure** – Standards-based 802.1x with integration to Avaya's Identity Engines portfolio for centralized, policy-based authenticated network access.
- **Flexible** – Mix-and-match best-in-class stacking capabilities; Fast Ethernet and Gigabit Ethernet in the same Stackable Chassis, with or without PoE.

The Ethernet Routing Switch 4500 Series provide resilient Stackable Chassis capabilities, high performance Layer 2 switching and Layer 3 routing, advanced convergence features and a full suite of security, QoS and management capabilities.

Positioned for customers who are looking for Fast Ethernet or Gigabit Ethernet to the desktop, support for PoE and optional support for 10 Gig uplinks, the ERS 4500 provides a flexible high-performance platform to meet the demands of the converged edge. With 11 different models, the ERS 4500 products provide the widest breadth of options to meet a diverse range of edge requirements.

Requirement	ERS 4500 Models	ERS 4500 PoE+ Models	ERS 4800 Models
Fast Ethernet to the desktop	Yes	Yes	Yes
Gigabit Ethernet to the desktop	Yes	No	Yes
IEEE 802.3 af PoE	Yes	Yes	Yes
IEEE 802.3 at PoE+	No	Yes	Yes
10 Gig Uplink sockets	XFP	No	SFP+
Redundant power	Yes - available through external RPS 15)	Yes - internal field-replaceable PSUs	Yes - internal field-replaceable PSUs
Hardware-ready for advanced services (Wireless Split-Plane, Virtual Services Fabric)	No	No	Yes

With 17 different models, the ERS 4000 Series offers a wide range of capabilities to meet a diverse range of edge requirements.

To ensure full interoperability across the complete ERS 4000 portfolio, the rear-mounted Stackable Chassis interfaces used on the ERS 4500 are consistent with those used on the newer ERS 4500 PoE+ models and the ERS 4800 models. Each ERS 4000 Switch delivers up to 384Gbps when eight units are combined.

Summary

The ERS 4500 Series is well suited for demands of the high-performance converged edge. The ERS 4500, along with other Avaya products, can increase profitability and productivity, streamline business operations, lower costs and help your business gain a competitive edge.

ERS 4500 Series Models

Fast Ethernet Models	
Model	**Uplink and ports**
ERS 4526FX	24 100BASE-FX ports, plus 2 Combo 10/100/1000/SFP Uplink ports
ERS 4526T	24 10/100BASE-TX ports, plus 2 Combo 10/100/1000/SFP Uplink ports
ERS 4526T-PWR	24 10/100BASE-TX ports supporting 802.3af PoE, plus 2 Combo 10/100/1000/SFP Uplink ports
ERS 4550T	48 10/100BASE-TX ports, plus 2 Combo 10/100/1000//SFP Uplink ports
ERS 4550T-PWR	48 10/100BASE-TX ports supporting 802.3af PoE, plus 2 Combo 10/100/1000/SFP Uplink ports48 x 10/100BASE-TX PoE plus 2 x Combo 10/100/1000BASE-T or 100/1000BASE-SFP

Gigabit Ethernet Models	
Model	**Uplink and ports**
ERS 4524GT	24 10/100/1000BASE-T ports, including 4 shared SFP Uplink ports
ERS 4524GT-PWR	24 10/100/1000BASE-T ports supporting 802.3af PoE, including 4 shared SFP Uplink ports
ERS 4548GT	48 10/100/1000BASE-T ports, including 4 shared SFP Uplink ports
ERS 4548GT-PWR	48 10/100/1000BASE-T ports supporting 802.3af PoE, including 4 shared SFP Uplink ports
ERS 4526GTX	24 10/100/1000BASE-T ports, including 4 shared SFP Uplink ports, plus 2 10Gigabit XFP Uplink ports
ERS 4526GTX-PWR	24 10/100/1000BASE-T ports supporting 802.3af PoE, including 4 shared SFP Uplink ports, plus 2 10Gigabit XFP Uplink ports

Note: ERS 4500 Series models that support the 100/1000BASE-X SFP capability, namely 4526FX, 4526T, 4526T-PWR, 4550T, 4550T-PWR, 4524GT, 4524GT-PWR, also support the 100Base FX and T1 Ethernet over TDM Pluggable Transceiver.

General Performance	
Switch Fabric performance: 48.8Gbps to 184Gbps	DHCP Snooping: up to 1,024 table entries
Frame forwarding rate: 6.6 to 72Mpps	802.1X Clients: up to 768
Stack Throughput: 384Gbps	LLDP Neighbors: up to 800
Latency (64 byte packet): 3.5 microseconds	ARP Entries: up to 1,792
Jitter (64 byte packet): 0.84 microseconds	IP Interfaces: up to 64
Frame length: 64 to 1518 Bytes (802.1Q Untagged), 64 to 1522 bytes (802.1Q Tagged)	IPv4 Routes: up to 512
Jumbo Frame support: up to 9,000 Bytes (802.1Q Tagged)	OSPF Instances: up to 4
Multi-Link Trunks: up to 32 Groups, with 8 Links per Group	OSPF Adjacencies: up to 16
VLANs: up to 1,024 Port/Protocol/802.1Q-based	ECMP Paths: up to 4
Multiple Spanning Tree Groups: 8	VRRP Instances: up to 256
MAC Address: up to 8k	IPFIX Sampled Flows: up to 100,000

Pluggable Interfaces	
1000BASE-T SFP up to 100m over CAT5E or better UTP Cable (RJ-45)	100BASE-FX SFP up to 2km reach over MMF (Duplex LC)
1000BASE-SX SFP up to 550m reach on MMF (Duplex LC)	100BASE-LX SFP up to 10km (LC)
1000-BASE-LX SFP up to 550m reach on MMF, and up to 10 km on SMF (Duplex LC)	100BASE-BX10-U up to 10 km - SFP Bidirectional upstream 1310nm TX
1000BASE-XD CDWM SFP up to 40 km reach on SMF (Duplex LC)	100BASE-BX10-D up to 10 km - SFP Bidirectional upstream 1530nm TX
1000BASE-ZX CDWM SFP up to 70 km reach on SMF (Duplex LC)	100BASE-ZX 70-80km SFP 1550nm
1000BASE-EX SFP up to 120 km reach on SMF (Duplex LC)	10GBASE-LR/LW XFP up to 10 km reach on SMF
1000BASE-BX SFP up to 10 and 40 km reach variants on SMF (LC)	10GBASE-SR XFP up to 300m reach on MMF
	10GBASE-ZR/ZW XFP up to 80 km over SMF
	Ethernet-over-T1 SFP up to 2,874m reach over 22AWG Cable (RJ-48C)

Standards Compatibility	
IEEE 802.1D Spanning Tree Protocol	RFC 1981 Path MTU Discovery for IPv6
IEEE 802.1w Rapid Spanning Tree	RFC 2011 SNMP v2 MIB for IP
IEEE 802.1s Multiple Spanning Tree Groups	RFC 2012 SNMP v2 MIB for TCP
IEEE 802.1p Prioritizing	RFC 2013 SNMP v2 MIB for UDP
IEEE 802.1Q VLAN Tagging	RFC 2131 BootP/DHCP Relay Agent
IEEE 802.1X Ethernet Authentication Protocol	RFC 2138 RADIUS
IEEE 802.1ab Link Layer Discovery Protocol	RFC 2236 IGMPv2
IEEE 802.3 Ethernet	RFC 2328 OSPF v2
IEEE 802.3u Fast Ethernet	RFC 2453 RIP v2
IEEE 802.3x Flow Control	RFC 2460 Internet Protocol v6
IEEE 802.3z Gigabit Ethernet	RFC 2461 Neighbour Discovery for IPv6
IEEE 802.3ab Gigabit Ethernet over Copper	RFC 2462 Auto-configuration of link local addresses
IEEE 802.3ad Link Aggregation	RFC 2474 DiffServ
IEEE 802.3ae 10Gbps Ethernet	RFC 2475 DiffServ
IEEE 802.3af Power-over-Ethernet	RFC 2665 Ethernet MIB
RFC 768 UDP	RFC 2674 Q-BRIDGE-MIB
RFC 783 Trivial File Transfer Protocol	RFC 2737 Entity MIBv2
RFC 791/950 IP	RFC 2819 RMON MIB
RFC 792 ICMP	RFC 2863 Interfaces Group MIB
RFC 793 TCP	RFC 2865 RADIUS
RFC 826 ARP	RFC 2866 RADIUS Accounting
RFC 854 Telnet	RFC 3046 DHCP Relay Agent Information Option
RFC 894 IP over Ethernet	RFC 3246 Expedited Forwarding
RFC 951 BootP	RFC 3410 SNMPv3
RFC 958 NTP	RFC 3411 SNMP Frameworks
RFC 1058 RIP v1	RFC 3412 SNMP Message Processing
RFC 1112 IGMPv1	RFC 3413 SNMPv3 Applications
RFC 1157 SNMP	RFC 3414 SNMPv3 USM
RFC 1213 MIB-II	RFC 3415 SNMPv3 VACM
RFC 1215 SNMP Traps Definition	RFC /3584 Co-existence of SNMP v1/v2/v3
RFC 12711757 / 2819 RMON	RFC 3576 RADIUS
RFC 1350 TFTP	RFC 3768 Virtual Router Redundancy Protocol (VRRP)
RFC 1361/1769 Simple Network Time Protocol (SNTP)	RFC 3917 IP Flow Information Export
RFC 1493 Bridge MIB	RFC 3993 DHCP Subscriber-ID sub-option
RFC 1583 OSPF v2	RFC 3954 NetFlow Services Export v9
RFC 1573/2863 Interface MIB	RFC 4007 Scoped Address Architecture
RFC 1643/2665 Ethernet MIB	RFC 4022 TCP MIB
RFC 1757 RMON	RFC 4113 UDP MIB
RFC 1850 OSPF v2 MIB	RFC 4291 IPv6 Addressing Architecture
RFC 1905/3416 SNMP	RFC 4293 IPv6
RFC 1906/3417 SNMP Transport Mappings	RFC 4432 SSH RSA
RFC 1907/3418 SNMP MIB	RFC 4673 RADIUS Dynamic Authorization Server MIB
RFC 1945 HTTP v1.0	RFC 4443 Internet Control Message Protocol (ICMPv6)
	RFC 5101 - Specification of the IP Flow Information Export (IPFIX)
	RFC 5186 IGMPv3

Weight	6.6 to 15.2kg
Power Specifications	
up to 8.5A @ 100-120VAC	up to 4.3A @ 200-240VAC

Weight	6.6 to 15.2kg
Power Specifications	
up to 8.5A @ 100-120VAC	up to 4.3A @ 200-240VAC
Environmental Specifications	
Operating temperature: 0°C to 50°C (32°F to 104°F) Storage temperature: -40°C to 85°C (-13°F to 158°F) Operating humidity: 0 to 95% maximum relative humidity, non-condensing Storage humidity: 10 to 90% maximum relative humidity, non-condensing	Operating altitude: 0 to 3,048m (0 to 10,000ft) maximum Storage altitude: 0 to 12,192m (0 to 40,000ft) maximum Acoustic Noise: less than 50dbA at 35°C less than 57dbA at 50°C
Safety Agency Approvals	
Global basis for certification: IEC 60950 current edition with all CB member deviations CB Scheme Certification with Member Deviations EN60950 Europe Safety (CE) UL60950 United States of America Safety CSA22.2, #60950 Canada Safety Weight: 6.6 to 15.2kg NOM Mexico Safety S-mark Argentine Safety Anatel Brazilian Safety	
Electromagnetic Emissions & Immunity	
CISPR22 International EMC Emissions CIRPR24 International EMC Immunity EN55022:2006 European EMC Emissions (CE) EN55024 European EMC Immunity (CE) EN61000 Additional European EMC Specifications (CE) FCC Part 15 US EMC Emissions	ICES-003 Canadian EMC Emissions VCCI Japan EMC Emissions AN/NZS 3548 Australia/New Zealand EMC Emissions CNS13438 Taiwan EMC Emissions MIC Korean EMC Certification Anatel Brazilian EMC Certification
MTBF Values	
214,542 to 311,104 hours (24.49 to 35.31 years)	
Warranty	
Lifetime Next Business Day advanced hardware replacement Lifetime Basic Technical Support 90-Day Advanced Technical Support	Optional Software Release Service also available: GW5300ASG / GW6300ASG
Country of Origin	

About Avaya

Avaya is a global provider of business collaboration and communications solutions, providing unified communications, contact centers, data solutions and related services to companies of all sizes around the world. For more information please visit **www.avaya.com**.

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Model #: SMART3000RMXL2U

SmartPro 3kVA Line Interactive Sine Wave UPS, 2880 watts, SNMPWEBCARD option, 2U Rack/Tower, USB, Serial, EPO, 120V

Highlights

- 3kVA / 3000VA / 2880W line interactive 2U rack/tower UPS; 0.96 power factor
- 120V nominal output during brownouts to 83V and overvoltages to 145V
- USB, RS232, EPO & optional SNMP/Web card are available for simultaneous use
- Front panel status LEDs with load level and battery capacity display
- Expandable runtime; 96% line-mode efficiency; 3 switched output load banks
- NEMA L5-30P input; 8 NEMA 5-15/20R & 1 L5-30R outlets

Description

3000VA / 3kVA 120V line interactive 2U rack / tower UPS offers complete network-grade power protection with full support for hot-replacement of separate internal battery and electronics modules. High .96 power factor supports loads up to 2880 watts. High efficiency rating of 96% reduces electrical operating cost and BTU emissions. Supports 120V 60Hz operation. Maintains battery derived sine wave AC output during power failures. Line-interactive dual-boost, single cut automatic voltage regulation (AVR) provides regulated 120V nominal output during brownouts and overvoltages. Includes NEMA L5-30P input plug and 9 UPS-supported output receptacles (8 x 5-15/20R, 1 x L5-30R). Includes two individually controllable switched outlets for advanced remote-reboot and load-shedding applications. Network-grade AC surge and noise suppression. Network management interfaces support simultaneous communications via USB, DB9 serial and card slot for optional SNMPWEBCARD and other card accessories. HID-compliant USB interface enables integration with built-in power management and auto shutdown features of Windows and Mac OS X. Supports detailed monitoring of equipment load levels, self-test data and utility power conditions via all three network interfaces at once. Advanced LED indicators offer 3-stage metering of UPS load and battery charge levels, plus single-LED status indicators for utility power, voltage regulation, on-battery and replace battery. Audible alarms provide notification of on-battery, low-battery and overload conditions. Includes PowerAlert auto-shutdown and management software for complete monitoring, reporting and logging of all site and UPS operational conditions, plus support for advanced configurations involving load-shedding, remote-reboot and redundant dual-UPS applications. Internal batteries offer runtime of 10 minutes half load (1440 watts) and 3 minutes at full load (2880 watts). Runtime is expandable with optional BP48V24-2U (limit 1) and BP48V60RT3U (unlimited) external battery packs. Supports installation in 4 post racks with included accessories. 2 post rackmount, wall mount and tower stand accessories sold separate.

Applications

Ideal for server, networking and telecommunications applications in rackmount, wallmount or tower format

Package Includes

- UPS power module with internal batteries
- PowerAlert Software with USB, DB9 and EPO cabling
- 4 post rackmount installation accessories
- Owner's manual

Features

- 3000VA / 3kVA 120V line interactive 2U rack / tower UPS for networks
- High power factor of .96 offers support for loads to 2880 watts
- High efficiency line power operation of 96% reduces UPS electrical operating cost and BTU emissions
- Supports selectable 120V nominal voltage operation at 60 Hz
- Sine wave AC output in AC and battery modes
- Line interactive UPS with Automatic Voltage Regulation (AVR)
- L5-30P input plug connects to 120V 30A utility receptacle
- Includes 9 UPS supported outlets (8 5-15/20R and 1 L5-30R)

- L5-30R outlet is ideal for the connection of a 120V 30A PDU to distribute the full UPS capacity to rack equipment
- Two designated 5-15/20R outlets are individually controllable to support remote reboot or automated load shedding of less critical items
- Network-grade 570 joule AC surge suppression
- USB, DB9 serial and card-slot accessory are all available for simultaneous use in advanced network configurations
- HID compliant USB interface enables integration with built-in power management and auto shutdown features of Windows and Mac OS X
- Includes PowerAlert auto-shutdown and management software for complete monitoring, reporting and logging of all site and UPS operational conditions, plus support for advanced configurations involving load-shedding, remote-reboot and redundant dual-UPS applications
- Advanced LED indicators offer 3-stage metering of UPS load and battery charge levels, plus single-LED status indicators for utility power, voltage regulation, on-battery and replace battery. Audible alarms provide notification of on-battery, low-battery and overload conditions
- Audible alarms provide notification of on-battery, low-battery and overload conditions
- Internal batteries offer runtime of 10 minutes half load (1440 watts) and 3 minutes at full load (2880 watts)
- Runtime is expandable with optional BP48V24-2U (limit 1) and BP48V60RT3U (no limit) external battery packs
- Some external battery configurations require the use of Tripp Lite's **External Battery Configuration Software** (see manual)
- Supports 4 post rackmount installation with included accessories; add 2POSTRMKITWM for 2 post and wallmount applications; add 2-9USTAND accessory for upright tower support

Specifications

OUTPUT

Output Volt Amp Capacity (VA)	3000
Output kVA capacity (kVA)	3
Output Watt Capacity (watts)	2880
Output kW capacity	2.88
Output power factor	1
Nominal Output Voltage(s) Supported	120V
Frequency compatibility	60 Hz
Output voltage regulation (line mode)	120V (+6%, -14%)
Output voltage regulation (Battery mode)	+/-5%
Built-in UPS output receptacles	8 5-15/20R outlet(s); 1 L5-30R outlet(s)
Built-in controllable switched load banks	Two switchable single outlet 5-15/20R load banks
Output circuit breaker	15A (x2) - 4 5-15/20R outlets each; L5-30R outlet is non-breakered
Output AC waveform (AC mode)	Sine wave
Output AC waveform (battery mode)	Pure Sine wave

INPUT

Rated input current (at maximum load)	24A
Nominal Input Voltage(s) Supported	120V AC
UPS input connection type	L5-30P

UPS Input cord length (ft.)	10 ft.
UPS Input cord length (m)	3.05
Recommended Electrical Service	30A 120V
Input cord length (ft.)	10
Input cord length (m)	3

BATTERY

Full load runtime (minutes)	3 min. (2880w)
Half load runtime (minutes)	10 min. (1440w)
Expandable battery runtime	Extended runtime supported via optional external battery packs
External battery pack compatibility	BP48V24-2U (limit 1); BP48V60RT-3U (multi-pack compatible)
DC system voltage (VDC)	48
Battery recharge rate (included batteries)	Less than 5 hours to 90%
Replacement battery cartridge (internal UPS battery replacement)	RBC58-2U
Battery Access	Front panel battery access door
Battery replacement description	Hot-swappable, replaceable batteries

VOLTAGE REGULATION

Voltage regulation description	Automatic voltage regulation (AVR) maintains line power operation with an input voltage range of 83 to 147
Overvoltage correction	Input voltages between 127 and 145 are reduced by 12%
Undervoltage correction	Input voltages between 108 and 96 are boosted by 12%
Severe undervoltage correction	Input voltages between 83 and 95 are boosted by 24%

LEDS ALARMS & SWITCHES

LED Indicators	LEDs indicate line power, power fail, avr, load level and replace battery conditions; includes tri-color LED load and battery charge metering
Alarms	Audible alarm indicates on battery, low battery and overload warnings
Alarm cancel operation	Power-fail alarm can be silenced by pressing the on/test/mute switch
Switches	2 Switches control off/on power status and alarm-cancel/self-test operation, rear panel dipswitch controls low/high charger settings (see manual)

SURGE / NOISE SUPPRESSION

UPS AC suppression joule rating	570 joules
EMI / RFI AC noise suppression	Yes

AC suppression response time	Instantaneous
PHYSICAL	
Installation form factors supported with included accessories	4 post 19 inch rackmount (mounting rail kit included)
Installation form factors supported with optional accessories	2 post rackmount (2POSTRMKITWM); Wallmount (2POSTRMKITWM); Tower (2-9USTAND)
Primary form factor	Rackmount
UPS / Power Module dimensions in primary form factor (height x width x depth / inches)	3.5 x 17.5 x 19
UPS / Power Module dimensions in primary form factor (height x width x depth / cm)	8.9 x 44.4 x 48.3
Installed whole system total rack space height (rack spaces)	2U
Secondary form factor	Tower (requires 2-9USTAND)
UPS / Power Module weight (lbs)	64
UPS / Power Module weight (kg)	29.1
UPS Shipping dimensions (height x width x depth / inches)	9 x 23.5 x 20
UPS Shipping dimensions (height x width x depth / cm)	22.9 x 59.7 x 50.8
Shipping weight (lbs)	72
Shipping weight (kg)	32.7
UPS housing material	Steel
Cooling method	Fan
ENVIRONMENTAL	
Operating Temperature Range	+32 to +104 degrees Fahrenheit / 0 to +40 degrees Celsius
Storage Temperature Range	+5 to +122 degrees Fahrenheit / -15 to +50 degrees Celsius
Relative Humidity	0 to 95%, non-condensing
AC mode BTU / hr. (full load)	433
Battery mode BTU / hr. (full load)	1594
COMMUNICATIONS	
Communications interface	USB (HID enabled); DB9 Serial; EPO (emergency power off); Slot for SNMP/Web interface

Network monitoring port description	Supports detailed monitoring of UPS and site power conditions
PowerAlert software	Included
Communications cable	USB, DB9 and EPO cabling included
LINE / BATTERY TRANSFER	
Transfer time	5 ms (line to battery) / 2 ms (battery to line)
Low voltage transfer to battery power (setpoint)	83
High voltage transfer to battery power (setpoint)	145
SPECIAL FEATURES	
Cold Start (startup in battery mode during a power failure)	Cold-start operation supported
High availability UPS features	Hot swappable batteries
Green & high efficiency features	Greater than 95% efficiency - GREEN UPS; Individually controllable load banks
CERTIFICATIONS	
UPS Certifications	Tested to UL1778 (USA); Tested to CSA (Canada); Tested to NOM (Mexico); Meets FCC Part 15 Category A (EMI)
WARRANTY	
Product Warranty Period (U.S., Canada & Puerto Rico)	2-year warranty. 3 year with registration. Note: registration is required for 3-year warranty.
Connected Equipment Insurance (U.S., Canada & Puerto Rico)	$250,000 Ultimate Lifetime Insurance

Related Items

Optional Products

Product Type	Related Model	Description	Qty.
Cables and Accessories	U022-010	10-ft. USB2.0 A/B Gold Device Cable (A Male to B Male)	1
Extended Warranties	WEXT5-2200-3000	5-Year Extended Warranty - For Smart Line-Interactive and Online Tower or Rack models, 2200-3000VA or less	1
External Battery Packs	BP48V24-2U	BP48V242U - External Battery Pack for UPS System	1
External Battery Packs	BP48V60RT-3U	External Battery Pack and Cable, 3U, Expandable, Blue 2-Point Connector	1
Power Distribution	PDU1220	Basic PDU / Power Distribution Unit - Safe, reliable power distribution for critical networking equipment	1
Power Distribution	PS7224-20	Tripp Lite Power Strip - Multiple outlets wherever you need them	1
Rack Accessories	SRSWITCH	Magnetic Door Switch Kit (2-pack for front and rear doors, requires ENVIROSENSE.)	1
Rackmount/Wallmount Kits	2POSTRMKITWM	Enables 2-Post Rackmount or Wallmount Installation of Select Rackmount UPS Systems	1

Replacement Batteries	RBC58-2U	2U UPS Replacement Battery Cartridge for select Tripp Lite UPS systems	1
SNMP Accessories	ENVIROSENSE	Monitors temperature, humidity and contact-closure inputs. (Requires SNMPWEBCARD or switched PDU.)	1
SNMP Accessories	SNMPWEBCARD	For remote monitoring and control via SNMP, Web, or Telnet.	1
Surge Protectors	DNET1	Network Surge Suppressor - Essential protection for data and communication lines	1
Surge Protectors	DTEL2	Network Surge Suppressor - Essential protection for data and communication lines	1
Tower Stands	2-9USTAND	Enables Tower Placement of Rackmount UPS Systems	1
UPS Accessories	MODBUSCARD	For remote monitoring and control via MODBUS protocol	1

More information, including related products, owner's manuals, and additional technical specifications, can be found online at www.tripplite.com/en/products/model.cfm?txtModelID=4418.

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Model #: SNMPWEBCARD

For remote monitoring and control via SNMP, Web, or Telnet.

Highlights

- NEW firmware version 12.04.0055 now available! - supports SNMPv3
- Internal SNMP/Web management accessory card
- Simple installation and setup
- Data Logging
- Event Logging
- Flash Upgradeable
- Scheduling
- Email Notification
- NOTE: Existing 12.04.0048, 12.04.0049, 12.04.0051 and 12.04.0052 cards can be upgraded to the new firmware to provide SNMPv3 support

Description

Tripp Lite's SNMPWEBCARD allows network users to operate any expansion slot-equipped Tripp Lite SmartPro or SmartOnline UPS as a managed device on the network. Enables remote monitoring and control of UPS and site electrical conditions using the SNMP network management platform or a web browser. Provides remote viewing of site electrical data, UPS status information and self-test logs. Supports selective rebooting of locked network equipment without disrupting power to other devices when used with customized load management receptacles available on select Tripp Lite UPS systems. Optional ENVIROSENSE module provides remote temperature/humidity monitoring and a dry contact interface to control and monitor alarm, security and telecom devices. NEW firmware version 12.04.0055 now available! - supports SNMPv3. Firmware is not applicable with cards running firmware version 12.04.0047 or earlier. NOTE: Existing 12.04.0048, 12.04.0049, 12.04.0051 and 12.04.0052 cards can be upgraded to the new firmware to provide SNMPv3 support

Applications

- Ideal for remote management and control of UPS and power data in LAN/WAN racks, computer rooms and datacenter environments

Package Includes

- SNMPWEBCARD
- Quick Start Installation Guide
- Configuration Cable
- Software CD including Owner's Manual & MIB files
- Cover Plates (secures card in UPS system's SNMP accessory slot)

Features

- NEW firmware version 12.04.0055 now available! - supports SNMPv3 - NOTE: Existing 12.04.0048, 12.04.0049, 12.04.0051 and 12.04.0052 cards can be upgraded to the new firmware to provide SNMPv3 support
- Makes any slot-equipped Tripp Lite UPS a managed device on the network, controllable using SNMP network management platforms or a web browser
- Web interface provides remote viewing of current site electrical data, UPS self-test and alert logs, as well as logged power events such as blackouts, brownouts, overvoltages, and other electrical problems
- Offers the ability to control UPS output power and remote reboot of locked network devices without interrupting power to other loads when used with any Tripp Lite UPS equipped with load management receptacles
- DHCP/Manual configuration support provides the ability to have network settings automatically assigned to the card, or manually assigned via permanent IP addresses
- 10/100 Mbps auto-sensing allows optimal communication compatibility with your current 10/100 Base-T network
- Real-time clock support maintains the time of day and date even if the UPS is shut down
- NTP (Network Time Protocol) support gives the card the ability to receive automatic updates to its real-time clock from a NTP server

- 2-tier level access allows an administrator and a guest to log into the web browser for monitoring and/or management of slot-equipped Tripp Lite UPS systems
- Multiple user support allows for viewing by a number of users at the same time
- Full Telnet access gives you the ability to remotely monitor and manage your UPS system via a TELNET session
- Optional SSL (Secure Socket Layer) security setting provides the capability to create an encrypted connection to the card via a web browser
- Offers the ability to shut down remote operating systems through your networks. (Supported operating systems must have Power Alert 12 installed. SeePowerAlert section for software support)
- Alert notifications via email or SNMP traps give users the added advantage of having an immediate event notification sent to them as a result of a site electrical or UPS problem.
- Protocols supported include HTTP, HTTPS, PowerAlert Network Management System, SMTP, SNMPv1, SNMPv2, Telnet, SSH, FTP, DHCP, BOOTP
- RoHS Compliant
- 2-year product warranty

Specifications

OVERVIEW	
Model Type	Hardware
WARRANTY	
Product Warranty Period (U.S., Canada & Puerto Rico)	2-year limited warranty

Related Items

Optional Products

Product Type	Related Model	Description	Qty.
Environmental Monitoring	ENVIROSENSE	Monitors temperature, humidity and contact-closure inputs. (Requires SNMPWEBCARD or switched PDU.)	1
Extended Warranties	WEXT3-SNMP	3-Year Extended Warranty - For All SNMP Products	1
Extended Warranties	WEXT5-SNMP	5-Year Extended Warranty - For All SNMP Products	1

More information, including related products, owner's manuals, and additional technical specifications, can be found online at www.tripplite.com/en/products/model.cfm?txtModelID=3968.

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Intel® Learning Series

Advancing Education Worldwide

8 de Marzo de 2012

Intel se complace en notificar la reciente incorporación de la compañía Babilon Techonologies, Inc. a la Alianza del Intel® Learning Series; decisión tomada luego de una cuidadosa inspección y precalificación de la misma. La empresa se caracteriza por ser de vanguardia en la manufacturación de programas con soluciones educativas, basadas en tecnología de Intel® Learning Series. Babilon Technologies es actualmente el único proveedor, LOEM ("Local Original Equipment Manufacturer") de Puerto Rico y el Caribe de Intel® Learning Series, un programa para empresas que proporcionan soluciones educativas basadas en tecnología de Intel® Learning Series.

Babilon es símbolo de excelencia en el servicio, ya que es uno de los primeros proveedores de soluciones de e-learning 1:1. Por consiguiente, cuenta con una vasta experiencia y comprensión en todo lo relacionado al programa Intel® Learning Series. Requisito primordial al momento de seleccionar un nuevo miembro de la Alianza, debido a que se maneja información confidencial y se crean soluciones de e-learning 1:1 de alto valor basados en tecnologías líderes en la industria.

En conclusión, Babilon ofrece la plataforma de Intel® Learning Series, las computadoras desarrolladas para entornos educativos - classmate PCs - y la suite de software Intel® Learning Series a todos sus clientes. También, cuenta con acceso a los recursos de Intel confeccionados para este programa con la finalidad de ofrecer servicio al cliente y apoyo durante y después de la implementación. Servicios que sólo Babilon con su experiencia desempeñará con profesionalismo y dedicación; resaltando el nombre de la Alianza de Intel® Learning Series.

Gracias por su interés en los servicios de la compañía Babilon y las soluciones e-learning 1:1 de Intel® Learning Series.

Brian González,
Intel Corporation
World Ahead
Director of Education

Babilon Server

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Intel® Learning Series

Advancing Education Worldwide

25 de marzo de 2011

Gobierno de Puerto Rico

Señoras y señores:

Intel® Corporationse se complace en notificar la reciente incorporación de la compañía Babilon Technologies, Inc. a la Alianza del Intel® Learning Series; un grupo de empresas que proporcionan soluciones educativas basadas en arquitectura de Intel® . Babilon Technologies manufactura programas con soluciones educativas, basadas en la arquitectura Intel y es actualmente el único proveedor para Puerto Rico y el Caribe de programas y soluciones educativas del Intel Learning Series.

Babilon cuenta con experiencia y comprensión en todo lo relacionado al Intel® Learning Series. Como todo miembro de la Alianza del Intel Learning Series, Babilon ofrece a todos sus clientes la plataforma de Intel® Learning Series, las unidades de educación desarrolladas por Intel Corporation para entornos educativos - classmate PCs - y los programas de software que conforman el Intel Learning Series.

Gracias por su interés en las soluciones de educación de Intel® Learning Series.

Atentamente,

Brian González, Gerente
Intel Corporation
Intel World Ahead

Estado Libre Asociado de Puerto Rico
JUNTA PARA LA INVERSIÓN EN LA INDUSTRIA PUERTORRIQUEÑA

15 de febrero de 2012

Joe Padilla
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Río Grande, PR 00745

Estimado (a) señor (a) Joe Padilla

En la reunión ordinaria del 14 de febrero de 2012, la Junta de Inversión para la Industria Puertorriqueña, aprobó su solicitud de parámetro de inversión (Resolución), la cual se incluye y tiene una vigencia de dieciocho (18) meses, según establecidos en el Reglamento para la Administración de la Ley de Inversión en la Industria Puertorriqueña, aprobado el 12 de febrero de 2004.

Esperamos que este beneficio que le concede la Ley # 14, del 8 de enero de 2004, sea de mucha utilidad a su empresa en la participación de las diferentes subastas en las agencias del gobierno.

De necesitar información, puede comunicarse al 787-758-4747, Ext. 2223 o 2618.

Atentamente

Lisbeth Marrero Torré
Secretaria Ejecutiva Interina
Junta de Inversión
Para la Industria Puertorriqueña

lmt

Anejos

Estado Libre Asociado de Puerto Rico
JUNTA PARA LA INVERSIÓN EN LA INDUSTRIA PUERTORRIQUEÑA

RESOLUCIÓN

PARA CONCEDER ÉL POR CIENTO DEL PARÁMETRO DE INVERSIÓN A LOS PRODUCTOS DE LA EMPRESA

BABILON TECHNOLOGIES, INC.
CALLE PIMENTEL # 27
RÍO GRANDE, PR 00745

Clasificación: MANUFACTURA

La Junta de Inversión en la Industria Puertorriqueña, en su reunión ordinaria del mes de **febrero 2012**, evaluó la solicitud de por ciento de Parámetro de Inversión por **manufactura** de los productos que más adelante se detallan.

Evaluada la solicitud del peticionario y por la facultad que le confiere la Ley Núm. 14 del 8 de enero de 2004, se asigna:

PARÁMETRO DE INVERSIÓN
DE DIEZ (10%) POR CIENTO

para compras del Gobierno del Estado Libre Asociado de Puerto Rico de los productos **manufacturados** en Puerto Rico por el peticionario (con exclusión de cualquiera otro producto no incluido en esta Resolución) y que a continuación se describen:

PRODUCTOS

Descripción	Marcas	Formas y tamaños
Computadoras:	Babilon Technologies	Conforme a especificaciones en compras y subastas del gobierno.
Desktop: Modelo: Alexander, Luxor, Zion	"	
Servidores	"	
Computadoras Netbook Babilon, modelos Luxor, Classmate	"	

La empresa que haya obtenido parámetro de inversión por concepto de manufactura para alguno de sus productos, podrá cederlo a sus agentes establecidos en Puerto Rico, siempre y cuando ésta empresa, no participe en la misma subasta, deberá radicar una carta notariada, para cada subasta, en la que indique expresamente que le esta cediendo a cada agente el parámetro de inversión otorgado por la Junta para

dichos productos y que ambos estén registrados y gocen de una clasificación por distribución, en el registro de la Junta de Inversión para la Industria Puertorriqueña.

El beneficio del por ciento de parámetro de inversión aquí concedido no se entenderá como un medio para aumentar el precio del producto, sino como uno para enfrentarse a la competencia en los procesos de compras gubernamentales.

La petición de renovación del por ciento deberá hacerse no más tarde del **14 de mayo de 2013 (90) días** previos a la fecha de expiración.

Esta resolución tendrá una vigencia de **dieciocho (18) meses**, hasta el **14 de agosto de 2013.**

Dado hoy, **14 de febrero de 2012,** en San Juan, Puerto Rico.

Director Ejecutivo
Compañía de Fomento Industrial

Administrador
Administración de Servicios Generales

por: Carlos M. Rodríguez - Sub. Secretario
Secretario
Departamento de Agricultura

Comisionado
Comisión de Desarrollo de Cooperativas de Puerto Rico

Estado Libre Asociado de Puerto Rico
JUNTA PARA LA INVERSIÓN EN LA INDUSTRIA PUERTORRIQUEÑA

Asesor
Oficina Desarrollo Económico Fortaleza

Certificado por:
Lisbeth Marrero Torre
Secretaria Ejecutiva Interina

Miembro
Sector Privado

Estado Libre Asociado de Puerto Rico
JUNTA PARA LA INVERSIÓN EN LA INDUSTRIA PUERTORRIQUEÑA

Estado Libre Asociado de Puerto Rico
JUNTA PARA LA INVERSIÓN EN LA INDUSTRIA PUERTORRIQUEÑA

RESOLUCIÓN

PARA CONCEDER EL POR CIENTO DEL PARÁMETRO DE INVERSIÓN A LOS PRODUCTOS DE LA EMPRESA

BABILON TECHNOLOGIES, INC.
CALLE PIMENTEL # 27
RÍO GRANDE, PR 00745

Clasificación: SERVICIO

La Junta de Inversión en la Industria Puertorriqueña, en su reunión ordinaria del mes de **febrero 2012,** evaluó la solicitud de por ciento de Parámetro de Inversión por **servicios no profesionales** de los productos que más adelante se detallan.

Evaluada la solicitud de peticionario y con la facultad que le confiere la Ley Núm. 14 del 8 de enero de 2004, otorga:

PARÁMETRO DE INVERSIÓN
DOS (2%) POR CIENTO

Para compras del Gobierno de Puerto Rico de los **servicios no profesionales** realizados en Puerto Rico por el peticionario (con exclusión de cualquiera otro producto no incluido en esta Resolución) y que a continuación se describen:

PRODUCTOS

DESCRIPCION	MARCA	FORMAS Y TAMAÑOS
Servicios de reparación y mantenimiento de equipos y sistemas de información.		Conforme a especificaciones en compras y subastas del gobierno
Instalación de cableado estructurado Babilon Technologies	Bablilon Technologies, Inc.	

E.M.R.

El beneficio de por ciento de preferencia aquí otorgado no se entenderá como un medio para aumentar el precio del producto, sino como uno para enfrentarse a la competencia en los procesos de compras gubernamentales.

La petición de renovación del por ciento deberá hacerse no más tarde del **14 de mayo de 2013 (90) días** previos a la fecha de expiración.

Esta resolución tendrá una vigencia de **dieciocho (18) meses**, hasta el **14 de agosto de 2013.**

Dado hoy, **14 de febrero de 2012,** en San Juan, Puerto Rico.

Director Ejecutivo
Compañía de Fomento Industrial

Administrador
Administración de Servicios Generales

Por: Carlos M. Rodríguez - Sub-Secretario Int.
Secretario
Departamento de Agricultura

Comisionado
Comisión de Desarrollo de Cooperativas
de Puerto Rico

Estado Libre Asociado
de Puerto Rico
JUNTA PARA LA
INVERSIÓN EN LA
INDUSTRIA
PUERTORRIQUEÑA

Asesor
Oficina Desarrollo Económico Fortaleza

Certificado por:
Lisbeth Marrero Torre
Secretaria Ejecutiva Interina

Miembro
Sector Privado

Save time, avoid problems. File electronically at http://www.usac.org/fund-administration/forms/

FCC Form 498

Approval by OMB 3060-0824

Service Provider Identification Number and General Contact Information Form

Estimated Average Burden Hours Per Response: 1.5 hours

FCC Form 498 is used to collect contact and remittance information for service providers that receive support from the Federal universal service support mechanisms. For greater flexibility, this form allows service providers to use the same general contact information for all their contacts and the same remittance data collected for each of the four support mechanisms or multiple contact and remittance information. Please report any changes to this information on a revised FCC Form 498 to prevent any delays in notification and the timeliness of disbursements. Persons willfully making false statements on this form can be punished by fine or forfeiture, under the Communications Act, 47 U.S.C. Secs. 502, 503(b), or fine or imprisonment under Title 18 of the United States Code, 18 U.S.C. Sec. 1001

Please read instructions, located at: http://www.universalservice.org/forms , before beginning this application.

Please check one box below

See Instruction Section III.A

- [✓] Original Application for SPIN
- [ ] Revision to existing FCC Form 498 on file with USAC
- [ ] Request for SPIN Merger/Consolidation
- [ ] Request for SPIN Deactivation

See Instruction Section III.A

Service Provider Identification Number (SPIN)
(To be inserted by USAC for first time applicants. **Required for subsequent revisions.**)

499 Filer ID
(Required if your company is required to file the FCC form 499)

Block 1: General Company Information [All Fields REQUIRED]

See Instruction Section III.B

1 Babilon Technologies, Inc.
Company Name

2 Babilon Technologies, Inc.
Name Company is Doing Business As (DBA) or Formerly Known As (FKA)

3 Calle Pimentel #27
Street Address

4
Address Line 2

5 Rio Grande — City
6 PR — State
7 00745-3349 — Zip Code + 4

Block 2: General Contact Information [All Fields REQUIRED]

See Instruction Section III.C

8 First: Joe — Middle Initial: W — Last: Padilla
General Contact (Company Preparer Name)
9 President — Title

10 (787) 225-4158 — Phone Number — Ext.
11 (787) 809-5724 — Fax Number

12 Calle Pimentel #27
Street Address

13
Address Line 2

14 Rio Grande — City
15 PR — State
16 00745-3349 — Zip Code + 4

17 jpadilla@babilonpr.com
E-mail Address

Block 3: Federal EIN and DUNS [All Fields REQUIRED]

See Instruction Section III.D

18 6 6 0 7 2 5 3 0 4
Enter Federal Employer Identification Number
(Federal EIN or Tax ID Number)

19 [✓] Corporation [ ] Partnership [ ] Other
(Check applicable corporate structure.)

20 8 2 9 9 5 8 8 3 9
Enter Dunn and Bradstreet Number (DUNS)

This page is for High-Cost Support Mechanism participants only.

For more information about the High-Cost Support Mechanism, please refer to: http://www.usac.org/hc/

Block 4: High-Cost Support Mechanism Financial Institution and Remittance Information [ALL Fields REQUIRED]

See Instruction Section III.E

Financial institution information is required. Electronic payment of universal service support payments is mandated by the Debt Collection Improvement Act of 1996, Pub. Law 104-134, 110 Stat. 1321-358.

☐ Check this box if this information is the same as the General Contact information (Block 2) and continue on to lines 31 to 34.

21 Remittance Company Name, if different from Company Name

22 First: Middle Initial: Last: 23 Title
Remittance Contact Name - Statements will be sent to Remittance Contact's attention

24 Remittance Contact Address

25 Address Line 2

26 City 27 State 28 Zip Code + 4

29 ( ) Phone Number Ext 30 ( ) Fax Number

☐ Check this box if you are requesting mailed paper copy statements instead of electronic remittance statements
(If you do not check this box, your remittance statements will be sent to your e-mail address)

31 Remittance Financial Institution for ACH or locked box transfer of funds (required)

32 Financial Institution Account Number for ACH (required) 33 ACH Financial Institution Transit Number - must be nine digits (required)

34 E-mail Address of Remittance Contact (Required if participating in the High-Cost Support Mechanism)

Block 5: Company Contact for High-Cost Support Mechanism

See Instruction Section III.F

☐ Check this box if this information is the same as the General Contact information (Block 2) and continue on to Block 6

35 First: Middle Initial: Last: 36 Title
Contact Name for High-Cost Support Mechanism
(Must be a company employee or designated representative)

37 Contact Address for High-Cost Support Mechanism

38 Address Line 2

39 City 40 State 41 Zip Code + 4

42 ( ) Phone Number Ext 43 ( ) Fax Number

44 E-mail Address of High-Cost Support Mechanism Contact

This page is for Low-Income Support Mechanism participants only.

For more information about the Low-Income Support Mechanism, please refer to: http://www.usac.org/li/

Block 6: Low-Income Support Mechanism Financial Institution and Remittance Information [All Fields REQUIRED]

See Instruction Section III.G

Financial institution information is required. Electronic payment of universal service support payments is mandated by the Debt Collection Improvement Act of 1996, Pub. Law 104-134, 110 Stat. 1321-358.

☐ Check this box if this information is the same as the General Contact information (Block 2) and continue on to lines 55 to 58.

45 Remittance Company Name, if different from Company Name

46 First: Middle Initial: Last: 47 Title
Remittance Contact Name - Statements will be sent to Remittance Contact's attention

48 Remittance Address

49 Address Line 2

50 City 51 State 52 Zip Code + 4

53 ( ) Phone Number Ext 54 ( ) Fax Number

☐ Check this box if you are requesting mailed paper copy statements instead of electronic remittance statements
(If you do not check this box, your remittance statements will be sent to your e-mail address)

55 Remittance Financial Institution for ACH or locked box transfer of funds (required)

56 Financial Institution Account Number for ACH (required) 57 ACH Financial Institution transit Number - must be nine digits (required)

58 E-mail Address of Remittance Contact (Required if participating in the Low-Income Support Mechanism)

Block 7: Company Contact for Low-Income Support Mechanism

See Instruction Section III.H

☐ Check this box if this information is the same as the General Contact information (Block 2) and continue on to Block 8

59 First: Middle Initial Last: 60 Title
Contact address for Low-Income Support Mechanism
(Must be a company employee or designated representative)

61 Contact Address for Low-Income Support Mechanism

62 Address Line 2

63 City 64 State 65 Zip Code + 4

66 ( ) Phone Number Ext 67 ( ) Fax Number

68 E-mail Address of Low-Income Support Mechanism Contact

This is a Supplemental Page for Participants in the High-Cost and Low-Income Programs.

Block 8: High-Cost and Low Income Study Area/SPIN Association

This information will be used to associate the Study Area Codes (SAC) to this SPIN for the purposes of High-Cost and Low-Income Support.

See Instruction Section III.I

☐ Check this box if there is no change to the SAC data on File

☐ Check this box if you are changing your Organization's SAC data currently on file with USAC

Study Area Code (SAC)	Study Area Type	
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive
	☐ Incumbent	☐ Competitive

This page is for Rural Health Care Support Mechanism participants only.

For more information about the Rural Health Care Support Mechanism, please refer to: http://www.usac.org/rhc/

Block 9: Rural Health Care Support Mechanism Financial Institution and Remittance Information [ALL Fields REQUIRED]

See Instruction Section III.J

Financial institution information is required. Electronic payment of universal service support payments is mandated by the Debt Collection Improvement Act of 1996, Pub. Law 104-134, 110 Stat. 1321-358.

☐ Check this box if this information is the same as the General Contact information (Block 2) and continue on to lines 79-82.

69 _____
Remittance Company Name, if different from Company Name

70 First: _____ Middle Initial: _____ Last: _____ 71 _____
Remittance Contact Name- Statements will be sent to Remittance Contact's attention — Title

72 _____
Remittance Address

73 _____
Address Line 2

74 _____ 75 _____ 76 _____
City — State — Zip Code + 4

77 (_____) _____ 78 (_____) _____
Phone Number — Ext — Fax Number

☐ Check this box if you are requesting mailed paper copy statements instead of electronic remittance statements (If you do not check this box, your remittance statements will be sent to your e-mail address)

79 _____
Remittance Financial Institution for ACH or locked box transfer of funds (required)

80 ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ 81 ☐☐☐☐☐☐☐☐☐
Financial Institution Account Number for ACH (required) — ACH Financial Institution transit Number - must be nine digits (required)

82 _____
E-mail Address of Remittance Contact (Required if participating in the Rural Health Care Support Mechanism)

Block 10: Company Contact for Rural Health Care Support Mechanism

See Instruction Section III.K

☐ Check this box if this information is the same as the General Contact information (Block 2) and continue on to Block 11.

83 First: _____ Middle Initial: _____ Last: _____ 84 _____
Contact Name for Rural Health Care Mechanism - ***(Must be a company employee or designated representative)*** — Title

85 _____
Contact Address for Rural Health Care Support Mechanism

86 _____
Address Line 2

87 _____ 88 _____ 89 _____
City — State — Zip Code + 4

90 (_____) _____ 91 (_____) _____
Phone Number — Ext — Fax Number

92 _____
E-mail Address of Rural Health Care Support Mechanism Contact

This page is for Schools and Libraries Support Mechanism participants only.

For more information about the Schools and Libraries Support Mechanism, please refer to: http://www.usac.org/sl/

Block 11: Schools and Libraries Support Mechanism Financial Institution and Remittance Information [ALL Fields REQUIRED]

See Instruction Section III.L

Financial institution information is required. Electronic payment of universal service support payments is mandated by the Debt Collection Improvement Act of 1996, Pub. Law 104-134, 110 Stat. 1321-358.

☑ Check this box if this information is the same as the General Contact information (Block 2) and continue on to lines 103-106.

93 Babilon Technologies, Inc.
Remittance Company Name, if different from Company Name

94 First: Joe Middle Initial: W Last: Padilla — 95 President
Remittance Contact Name- Statements will be sent to Remittance Contact's attention — Title

96 Calle Pimentel #27
Remittance Address

97
Address Line 2

98 Rio Grande — 99 PR — 100 00745-3349
City — State — Zip Code + 4

101 (787) 225-4158 — 102 (787) 809-5724
Phone Number — Ext — Fax Number

☑ Check this box if you are requesting mailed paper copy statements instead of electronic remittance statements (If you do not check this box, your remittance statements will be sent to your e-mail address)

103 First Bank
Remittance Financial Institution for ACH or locked box transfer of funds (required)

104 0 5 0 9 2 0 1 6 2 7 — Financial Institution Account Number for ACH (required)

105 2 2 1 5 7 1 4 7 3 — ACH Financial Institution Transit Number - must be nine digits (required)

106 jpadilla@babilonpr.com
E-mail Address of Remittance Contact (Required if participating in the Schools and Libraries Support Mechanism)

Block 12: Company Contact for Schools and Libraries Support Mechanism

See Instruction Section III.M

☑ Check this box if this information is the same as the General Contact information (Block 2) and continue on to Block 13

107 First: Joe Middle Initial: W Last: Padilla — 108 President
Contact Name for Schools and Libraries Mechanism — Title
(Must be a company employee or designated representative)

109 Calle Pimentel #27
Contact Address for Schools and Libraries Support Mechanism

110
Address Line 2

111 Rio Grande — 112 PR — 113 00745-3349
City — State — Zip Code + 4

114 (787) 225-4158 — 115 (787) 809-5724
Phone Number — Ext — Fax Number

116 jpadilla@babilonpr.com
E-mail Address of Schools and Libraries Support Mechanism Contact

Block 13: Offsetting Disbursement Payments Against Federal Universal Service Contribution Obligations

See Instruction Section III.N

The following information pertains only to telecommunications companies participating in the Schools and Libraries and Rural Health Care Support mechanisms. In accordance with FCC rule section 54.515 regarding Schools and Libraries Support mechanism payments, a telecommunications company may choose to offset its Schools and Libraries Support Mechanism payment against its Federal universal service contribution. In accordance with FCC rule section 54.611 regarding Rural Health Care Support Mechanism payments, a telecommunications company MUST offset its Rural Health Care Support Mechanism payment against its Federal universal service contribution. A telecommunications company must have an FCC Form 499 Filer ID number in order to offset its Schools and Libraries or Rural Health Care Support Mechanism payments against its Federal universal service contribution. In order to obtain an FCC Form 499 Filer ID number, visit www.universalservice.org/forms and select FCC Form 499. You do not need an FCC Form 499 Filer ID in order to be issued a SPIN.

117 ☐ Yes, I want my Schools and Libraries Support Mechanism disbursement payments to be offset against be offset against my Federal universal service contribution obligations. This box must be checked in order to receive offsets. The default is "No."

Block 14: Principal Communications Types [REQUIRED Field]

See Instruction Section III.O

Select up to 5 boxes that best describe the reporting entity. Enter numbers starting with "1" to show the order of importance - see instructions.

☐	CAP/CLEC	☐	Prepaid Card
☐	Cellular/PCS/SMR	☐	Private Service Provider
☐	Coaxial Cable	☐	Satellite Service Provider
☐	Incumbent LEC	☐	Shared-Tenant Service Provider/Building LEC
☐	Interexchange Carrier (IXC)	☐	SMR (Dispatch)
☐	Interconnected VOIP Provider	4	Toll Reseller
2	Local Reseller	3	Wireless Data Provider
☐	Operator Service Provider	☐	Non Traditional Provider (NTP)
☐	Paging and Messaging	1	Internet Service Provider
☐	Payphone Service Provider		

Block 15: Authorized Contact Signature [All Fields REQUIRED]

See Instruction Section III.P

I certify that I am an officer of the above-named service provider, that I am authorized to submit this FCC Form 498 on behalf of the above named service provider, and that to the best of my knowledge, the data set forth in this form is true, accurate, and complete.

Persons willfully making false statements on this form can be punished by fine or forfeiture, under the Communications Act, as amended, 47 U.S.C. Secs.502, 503(b), or fine or imprisonment under Title 18 of the United States Code, 18 U.S.C. Sec. 1001

Company Officer Information | ✓ Check this box if this information is the same as the General Contact information (Block 2)

Signature of the Company Officer — 3/4/2012 Date

First: Joe Middle Initial: W Last: Padilla
Printed Name

President
Title

jpadilla@babilonpr.com
E-mail address