Avaya Virtual Services Platform 7000

Future-ready Ethernet switching platform specifically architected for tomorrow's high-performance data center

AVAYA

The Avaya Virtual Services Platform 7000 is an energy and space-efficient platform built around a next-generation chipset, delivering wire-speed 1Gbps and 10Gbps Ethernet connectivity for today's requirements. In addition it is future-ready with the ability to flexibly support 40 and 100Gbps Ethernet, Fibre Channel connectivity, and has been built to support network-wide fabric-based virtualized services and lossless environments.

Highlights

- Built around an innovative fifth generation flexible high-performance ASIC chipset with optimized packet buffering and enlarged scaling capabilities

- Versatile cooling options conforming to established data center hot/cold aisle arrangements

- Hot-swappable power supplies, fans, and pluggable expansion*

- Wire-speed hardware guaranteeing high throughput and low latency

- Contiguous multi-element fabric spanning numerous racks is enabled by a unique Multi-Terabit Fabric Interconnect Stack*

- Future-ready support for sophisticated virtualization technologies and high-speed interfaces

Ready for today

The Avaya Virtual Services Platform 7000 is ideally suited to deliver today's pressing need for flexible, high-speed Ethernet connectivity in the high-performance data center Top-of-Rack (ToR) role; additionally it provides a cost-effective 10 Gigabit

Ethernet fan-out capability for existing core switch deployments and it also has application in the campus distribution layer, delivering flexible connectivity and consolidation options. Featuring a hardened physical architecture of dual, hot-swappable AC or DC power supplies and fan trays, the Avaya Virtual Services Platform 7000 is an important addition to a network manager's toolkit for creating always-on high-performance solutions.

The first of the Avaya Virtual Services Platform 7000 models to be introduced, the 7024XLS, features SFP+ sockets that support a wide variety of both 1Gbps and 10Gbps Ethernet pluggable transceivers, enabling short- and long-haul copper and fiber connections. In addition the Avaya Virtual Services Platform 7024XLS also features a versatile Media Dependent Adapter slot that will deliver support for a range of high-speed expansion options, such as additional 10Gbps ports (SFP+ sockets or 10GBASE-T via RJ45), 40Gbps and 100Gbps Ethernet, and Fibre Channel (FC) connectivity. An innovative design helps ensures that the appropriate portion of the switching fabric's powerful

1,280Gbps performance is dedicated to supporting MDA-based connections, while still providing for wire-speed throughout for all front panel and high-capacity fabric interconnections.

The design of the Avaya Virtual Services Platform 7000 is sympathetic to the evolving requirements for precisely planned environmental implementations and it offers both front-to-back and back-to-front options for the field-replaceable fans tray and power supplies; this gives the flexibility to conform to a variety of hot-aisle/cold-aisle design requirements.

Future-ready for tomorrow

In addition to the versatility afforded by the optional MDA, the Avaya Virtual Services Platform 7000 includes a host of strategic innovations that help ensure it will continue to deliver cutting-edge performance and services throughout an extended life cycle. Among the future-ready features is the advanced fifth generation application-specific integrated circuit (ASIC) chipset that has been optimized for network operations, including:

- Smart packet buffering to deliver lower latencies and efficiently reallocate memory to those ports suffering congestion

- Larger table capacities provide for improved scaling

- Embedded services in support of applications such as IP Flow Information Export (IPFIX)*

- Native support for the particular computational functionality crucial in high-performance data center and metro deployment scenarios

- Compatible with a variety of advanced technologies: DCB, SPB, TRILL, VPLS, MPLS, and the associated OA&M*

In addition to a class-leading switching performance of over 1.2Tbps, the Avaya Virtual Services Platform 7000 has been equipped from the outset with superior CPU and memory resources so that it has the capabilities to execute the sophisticated algorithms necessary for a successful fabric-based infrastructure.

Version 10.0 release deployment options and benefits:

- Scenarios:
  - Basic Top-of-Rack – single switch/ dual-attach server
  - Fibre aggregation – distribution switch or data center 10G fan-out
  - ATA-over-Ethernet storage transport

- Scope:
  - Simple DC deployment, non-fabric today but with strategic intentions

- Transitional between 1G and full 10G plant, seeking a strategic solution

- Benefits:
  - 1/10GbE support
  - Future-ready for key enabling technologies

- Positioning:
  - Seamlessly transition the highly virtualized server environment from multiple 1GbE connections to one or two 10GbE – increase capacity, reduce latency, reduce complexity
  - Make a strategic investment in a future-ready platform that matches the mainstream data center evolution requirements and timeline – 40/100GbE, FCoE, DCB
  - Class-leading performance package – lowest latency, highest switching, most advanced chipset, and unique fabric Interconnect capability that's built-in and ready for future activation in software

Fabric Interconnect Stack with an ultra high-capacity*

A common thread that runs through the Avaya portfolio of stackable chassis products is a truly resilient, high-performance technology called Flexible Advanced Stacking Technology (FAST); this is one of the differentiators that make Avaya genuinely unique to competitive offerings. This technology creates a "Fabric Interconnect Stack" optimizing local traffic flows by always forwarding packets along the shortest path between source and destination, using dedicated high-speed interconnections. This feature is particularly beneficial in a data center environment creating a flatter, latency-free network that encompasses multiple racks of highly virtualized servers.

Industry-leading, pay-as-you-grow scalable capacity

High-capacity virtual backplane - it's been a given that performance comes as a natural function of design and price. With our stackables Avaya has been able to combine non-blocking internal Switching Fabrics with high-speed stacking architectures to deliver a truly high performance solution. The Avaya Fabric Interconnect Stack is not bound by the limitations and constraints facing rivals (such as token sharing/passing systems, or basic cascading), and has been specifically designed to scale proportionally as new member

switches are added; as more ports are added and the requirement for more bandwidth grows. A shortest-path traffic forwarding capability is at the heart of our resilient Fabric Interconnect Stack architecture, providing that the shortest, most optimal forwarding path is selectively chosen for each unique data flow. There is none of the unwieldy logical ring or token technology that lesser offerings use, but a star-based distributed forwarding topology that allows traffic to flow either 'upstream' or 'downstream' simultaneously from every switch in the stack, optimizing both performance, resiliency, and resource utilization. The Avaya Virtual Services Platform 7000 features our most advanced offering to date, supporting true Multi-Terabit Fabric Interconnect Stack, with an architecture that has been designed to scale to over 80Tbps.

In-service maintenance and restoration

Virtual hot-swap capability – this crucial serviceability and operability feature helps ensure that any unit failure can be quickly and easily rectified. It's a hot-swap capability pioneered in modular switches, and also made available on Avaya Virtual Services Platform 7000. This is made possible by implementing the intelligent Fabric Interconnect Stack. Enabling immediate like-for-like unit replacement without impacting other functionality and traffic, and without complex engineering intervention, empowers operators to deploy our solutions just as they would a chassis. When a failure occurs the neighboring switches will automatically wrap their fabric connections to help ensure that adjacent racks in the data center are not impacted. The failed unit is simply disconnected from the fabric

and a like unit – without any pre-staging of software or configuration – can be inserted, cabled, and powered-up. The Automatic Unit Replacement (AUR) process self-manages any necessary downloads to the new switch and then brings it online; all of this without the need for an engineer to configure or manage the process.

Distributed power and forwarding

No single point-of-failure – with a chassis solution this has meant N+1 power supplies and even redundant Switching Fabrics. With the Avaya Virtual Services Platform 7000 it is much the same but without the cost penalty: each unit has an independent Switching Fabric, and each 'Switching Module' has an independent power supply, which means that there is no one single point-of-failure. The Avaya Virtual Services Platform 7000's dual hot-swappable power options further enhances the overall resiliency of the solution. Any individual element failure is equivalent to the failure of a single module within a chassis. Frame forwarding decisions are distributed across the fabric; when a frame forwarding decision results in the need to forward the frame to another switch, the intelligent shortest path algorithm determines whether the frame will traverse the fabric Interconnect.

Automatic software & configuration control, and centralized management

Simplified implementation and management – with a chassis solution it is simply a case of adding a new module, adding configuration, and connecting devices. With the Avaya Virtual Services Platform 7000, as in our stackables, it is much the same: simply cable-in a new member,

extend the appropriate configuration – all units are managed as a single network entity. The Automatic Unit Replacement (AUR) feature is the process that delivers the Agent Image software, the configuration file, and the Diagnostic Image software to any additional or replacement switch; it self-manages any necessary downloads to the new switches and then brings it online. All units operate, appear, and are managed as a single network entity, with specific stack IP and MAC Addresses.

Management functions are performed by a 'Master Unit' (MU), which selected as part of initializing the Fabric Interconnect Stack. Once normal operations have been established, if the MU (e.g. Unit 1) fails or is rebooted, the next switch (e.g. Unit 2) will take over as Temporary MU (TMU) and remain as such until either it or the entire stack is reset. If Unit 2, as the TMU, fails or is reset, then the TMU status will transfer to the next downstream unit. The important point is that there is always a process for electing the master and a backup to help ensure continuous operation of the Fabric Interconnect Stack.

Switch Clustering*

Avaya's 'Switch Clustering' capability is built using the Split Multi-Link Trunking technology that is unique to our products, yet it is fully interoperable with third party switches, servers, appliances, and routers. What this delivers is a series of benefits that are providing real value; while it may be possible to simulate certain individual elements, there is no competitive offering that can rival the combined capabilities, particularly in terms of simplicity and efficiency.

Delivering end-to-end application availability

Interoperable solution that extends beyond switches to servers – this means that the high-availability is not limited to only the switching network (the switches themselves and their direct links), but to the total network; importantly also extended to attached servers, appliances, and WAN routers, etc. All competing offers are based on interaction within the switch domain, and crucially do not extend to the application hosts themselves. Most rival offerings are based around variations of the Spanning Tree Protocol; however this is limited to the actual switches and is not supported by other devices (servers, etc). By excluding servers from the active resiliency technology, these solutions cannot extend availability to the applications themselves. Avaya's Switch Clustering is independent of STP and extends to support any device that utilizes Link Aggregation, a technology that is both basic and ubiquitous. Devices that attach to the Switch Cluster create a virtual connection using multiple physical links, this provides resiliency together with additional capacity.

Solutions that scale enterprise-wide

Cost-effective solutions for every network size, not limited to top-of-the-range product – business processes that demand high-availability are typically also deployed company-wide; so it is imperative to deliver consistent levels of resiliency across the entire network. Avaya is uniquely positioned to offer the same capability, using the same technology, in a broad range of platforms that scale in both price and performance matching various requirements across the network. This enables the consistent delivery of a network that is itself constantly delivering end-to-end application availability, regardless of location or size.

Simplified solutions

A capability that is simple to deploy and one that does not require complex and/or expensive products – the various capabilities and benefits that Switch Clustering provides are delivered without complexity. There is no need for expensive hardware or software, or for complex configuration or on-going maintenance. This helps ensure that the business benefits are not 'purchased at any price'; indeed Switch Clustering uniquely combines simplicity with cost-effectiveness. While some of the individual capabilities can be simulated using other techniques and/or a myriad of additional products, that approach can only add cost and complexity.

As an example, Switch Clustering delivers user pre-session load-sharing access all uplinks from the access switch to the core; this capability is automatically enabled without the need for any additional hardware, software, or configuration. To attempt to replicate this level of capability in a STP-based network, it would need to have multiple VLANs with MSTP/RSTP configured, a Layer 3-enabled switch with routing and ECMP configured, and even then this solution would be limited to pre-VLAN load-sharing only (not pre-session).

Sub-second failover & recovery

Delivering the necessary availability and also facilitating in-service maintenance and optimized performance – Switch Clustering is probably best known for delivering sub-second failover and recovery. While this remains extremely important and valid it is not necessarily a feature that remains unique. Enhancements to STP – namely rapid reconfiguration – can be aggressively configured to deliver similar levels of failover performance. However all flavors of STP remain tied to the concept of detecting and acting upon changes to the network topology. This makes a network extremely sensitive to the reliability and availability of particular devices (root bridges, etc). Avaya's Switch Clustering is built around the concept of mirrored devices and virtualized capabilities, so that an entire switch can be removed (through failure or for emergence or routine maintenance) without any loss of overall application availability.

What Avaya continues to deliver in this area is a degree of network recovery which also facilitates in-service maintenance. The deterministic nature of Switch Clustering empowers network operators to compartmentalize the network, making essential services even more resilient, and allowing for individual failures to be repaired in real time, without service restoration work impacting on collateral components or applications.

Virtualization and network fabric infrastructure*

Most enterprises are looking at ways to reduce cost and improve time-to-service, and most are looking for ways to improve the operational efficiency of the data center. Wouldn't it be nice if you could deploy a new application across multiple data centers in an instant? Wouldn't it be nice if you could give IT the ability to simply say "yes' when there is a new application or service that needs to be deployed on the network?

Server virtualization within the data center is now taken for granted, with some declaring that 'Cloud Computing' will become a reality for most enterprises, and that applications, information, and compute resources will become simple commodities. Experience has proved one thing; the data center of the future cannot be built on the technology of the past. General-purpose products, outmoded techniques, and legacy designs cannot be re-packaged as 'data center-ready'. The industry will take the best and leave the rest. Ethernet is readily available, cost-effective, extensible, and – as the 40 and 100 Gigabit developments prove – scalable, however many existing deployment methodologies are no longer an option.

Avaya Virtual Enterprise Network Architecture improves network uptime by delivering the infrastructure that creates the private cloud and virtually eliminates user-error network outages. We are reducing time-to-service with simple one-touch provisioning and we are improving data center efficiency with a tight integration between applications and network virtualization. We are reliably connecting users and content, with independent testing commissioned by Avaya reinforcing the fact that we consistently deliver some of best total cost of ownership in the industry. With an Avaya data network, you will get more value for every dollar spent by IT.

Avaya Virtualized Services*

Avaya's Virtualized Services, based on enhanced Shortest Path Bridging (SPB) technology, offers the ability to create a simplified network that can dynamically virtualize elements to empower efficient provisioning and utilization of resources, thus reducing the strain on the network and personnel. Combined with our Avaya Virtualization Provisioning Service tool Avaya Virtualized Services can, for example, fully synchronize the provisioning of the networking requirements of workload mobility within and between data centers, dynamically and seamlessly moving or extending virtualized computing resources, without the provisioning complexity associated with rival solutions. Based on SPB, an IEEE 802.1aq draft standard augmented with Avaya enhancements that deliver specific enterprise optimization, Virtualized Services offers a robust and resilient alternative to today's existing offerings and it delivers innovative services and solutions while maintaining Ethernet's key value propositions of simplicity and cost-effectiveness. Virtualized Services delivers new capabilities in the crucial areas of simplicity, scalability, performance, reliability, and service orchestration and abstraction.

Creating a fault-tolerant, powerful, and self-aware fabric, this transparent network features a design where service provisioning occurs only at the perimeter. The advantage is immediate and pronounced; administrative effort is reduced, errors are avoided, and time-to-service is vastly enhanced. The beauty of the SPB technology is that it is masking devices, links, and protocols and delivering what is logically an extended Ethernet LAN that provides connectivity for multiple end-points. That's the simple concept and SPB achieves this in an interesting and quite unique way. It leverages an established dynamic link-state routing protocol called Intermediate System-to-Intermediate System (IS-IS) and extends it to share topology,
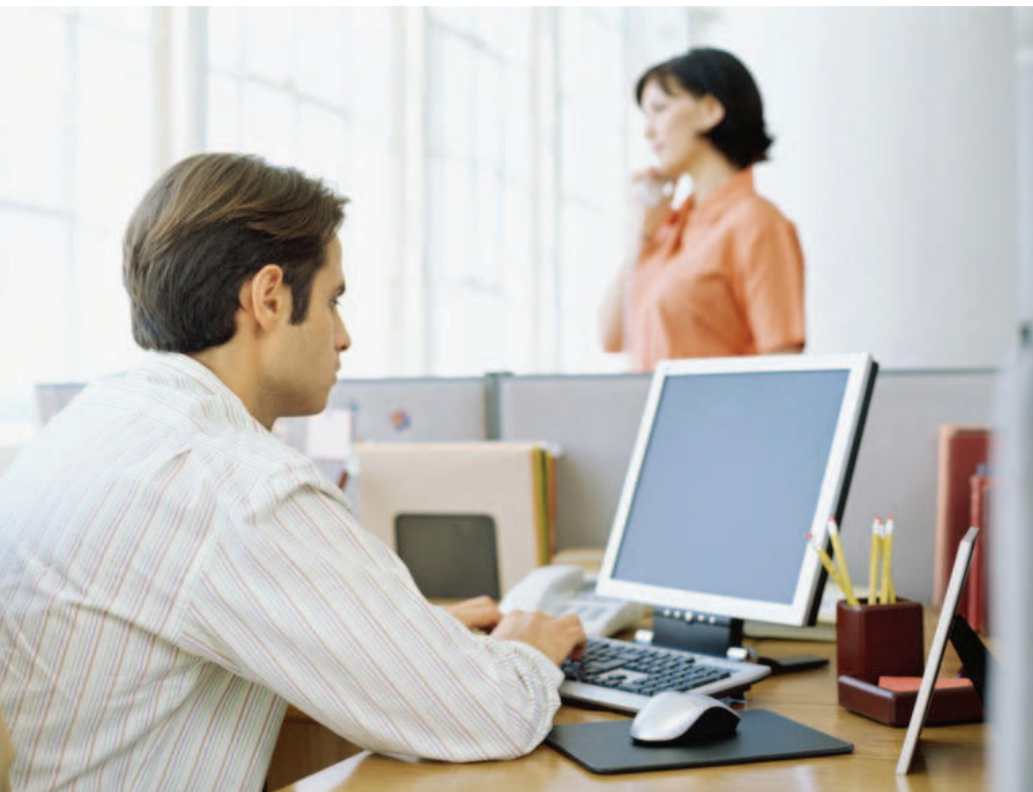
reachability, and device information between every node in the SPB domain. With nodes holding their own self-determined view of the network, including the optimal path to any destination, a fully distributed and dynamically maintained solution is created.

Avaya Virtualization Provisioning Service*

Avaya Virtualization Provisioning Service is a virtualization management solution that delivers automation, visibility & reporting that spans the network infrastructure, servers, storage and applications, across both physical and virtual environments. Today's data center networks are inefficient in dealing with server virtualization. From the time a Virtual Machine (VM) is created to the time it is activated, moved around or deactivated, the network has no visibility into the virtual machine lifecycle. There are also few tools, if any, when it comes to troubleshooting and managing VMs in the network. Due to the ability of VMs to dynamically move from server to server, provisioning the network for VM security and application performance has proven to be a very serious networking challenge.

An important milestone in the evolution to a virtualized data center is making the network very "efficient" when it comes to managing, troubleshooting, provisioning and securing virtual machines in the network. This includes bringing network level insight and visibility to the virtual machine lifecycle, applying the appropriate network and port level configurations at an individual VM level, dynamically tracking VMs as they move across the data center

and enforcing the network attributes of the VMs wherever they migrate in the data center. Avaya's Virtualization Provisioning Service (VPS) is a software application service that acts as glue between VMware's VCenter and Avaya's Configuration and Orchestration Manager. Avaya Avaya Virtualization Provisioning Service provides a relay mechanism to bridge the gap of complete end-to-end provisioning of servers and network devices in a fully virtualized data center environment. It learns dynamic virtualized server topologies and updates Avaya devices to react to changes in server topologies. It provisions connectivity services (VLANs) on switch ports based on the actual network connectivity and provisions QoS filter, ACL, SPB i-SID & port profiles (templates) – based on preconfigured rules – to switch ports.

Provisioning changes can be applied automatically based on a set of predefined rules which are checked and applied to network ports dynamically if the rule applies. They can also be applied manually where there is an alert to the network administrator that there is a change happening within the server environment and then a guided workflow is triggered that would allow the administrator to apply the manual network configuration change. These changes to the network, which can be done in real-time, are critical in helping to ensure the applications function as expected and that moving the VM doesn't negatively impact the end user experience for that particular application,

An area of differentiation for Avaya Virtualization Provisioning Service is its integration with the Avaya

Identity Engines portfolio to deliver intelligent rule-based access control for individual VMs. This gives network administrators the ability to prevent individuals from moving certain VMs in the middle of the day and helps ensure that specific networks are protected so that only approved VM's can be connected to them.

Avaya Virtualization Provisioning Service will also provide a wealth of reporting options so that network operators have a clear view of the VM lifecycle and activity (activations, deactivations, changes), it will provide details on what network changes were completed based on user, device, time, type of access etc. Network operators can also customize the alerts that they receive based on the device type, port groups or even server type.

This comprehensive solution truly brings the virtualized applications together with the virtualized network and helps ensure that the network is able to constantly adapt to changes in the computing environment. eVM mobility is then transparent to the end user utilizing those applications.

Avaya IP VPN-Lite*

Avaya IP VPN-Lite is a unique, afford-able and easy-to-use alternative to MPLS-based IP VPNs, by allowing you to deploy VPN services in the metro and campus without the complexity, cost and burdensome training require-ments associated with MPLS. IP VPN-Lite runs over any flavor of IP routed core network, helping ensure a low-touch deployment. It utilizes IP-in-IP encapsulation and any-to-any connec-tivity with scalability that is equivalent to MPLS; all of the benefits of MPLS but without the notorious complexity and disadvantages.

If a Service Provider-supplied MPLS WAN in place already exists, IP VPN-Lite can be used to seamlessly extend existing VPN connections into the campus or metro area. In deploying IP VPN-Lite in this fashion, there's no need to change the WAN and no requirement to deploy MPLS in the campus.

IP VPN-Lite offers simplified management, administration, troubleshooting and maintenance versus the more complex, multi-layered MPLS. It can be leveraged as a standalone, cost-effective alternative to MPLS or as an extension to current MPLS deployments, offering less complex management, training and maintenance.

Management

The Avaya Virtual Services Platform 7000 can be managed by a variety of management tools, creating a flexible operational environment based on business requirements. These include: standardized Command Line Interface (CLI), Web-based Enterprise Device Manager

(EDM)*, SNMP-based management (SNMPv1, v2 & v3), and the evolving Unified Communications Management framework for comprehensive, centralized, and multi-facetted network management. It is based on common services – authentication and access control, audit, etc – and then a number of integrated AJAX-based plug-in applets that deliver seamless task-specific capabilities all with a consistent look and feel: Configuration & Orchestration Management; Visualization, Performance and Fault Management; Enterprise Policy Manager; IP Flow Manager; and Network Resource Manager.

Provision wizards and other labor-saving tools help ensure faster service activation and more consistent approach to configuration; this has the added benefit of reducing human-error as templates are pre-populated with best-practice recommendations or mandatory values. The entire framework is context-based which enables a faster, more accurate and highly-intelligent approach to

delivering both device-centric and network-wide management services.

Lifetime warranty

Avaya includes Industry-leading warranty services for the portfolio of stackable switches, including the new Avaya Virtual Services Platform 7000. We provide complimentary next-business-day shipment of failed units for the full life of the product; next-business-day shipping to replace failed hardware worldwide. Avaya also offers complimentary basic technical support: Level 1 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 optional Software Release Service available to provide access to new feature releases. As per industry norm for hardware, 'Lifetime' is defined as the production lifecycle phase, plus 5 years post-discontinuation.

Summary

The Avaya Virtual Services Platform 7000 is purpose-built to support the dynamic data center and high-density 10 Gigabit Ethernet top-of-rack deployments of today. It alleviates infrastructure complexity and reduces power consumption with a truly scalable and strategic architecture; it is designed to be the high-performance top-of-rack platform for the next decade.

Uptime is essential – mission-critical applications are required 24x365, without interruption – and the always-on Avaya Virtual Services Platform 7000 delivers against this challenge. It is a highly strategic product that is fit-for-purpose for today's connectivity requirements in addition to being future-ready for the evolving and emerging needs of tomorrow.

Ordering Information

Part Code	Product Description
AL700001F-E6	Avaya Virtual Services Platform 7024XLS 24-port 1/10 Gigabit Ethernet SFP+ Switch (Front-to-Back Cooling)
AL700001B-E6	Avaya Virtual Services Platform 7024XLS 24-port 1/10 Gigabit Ethernet SFP+ Switch (Back-to-Front Cooling)
AL7000MS1-E6	7008XLS 8-port 1/10 Gigabit Ethernet SFP+ Media Dependent Adapter*
AL7000MT1-E6	7008XT 8-port 10GBASE-T Media Dependent Adapter*
AL7000?0F-E6	Avaya Virtual Services Platform 7000 AC Power Supply (Front-to-Back Cooling)
AL7000?0B-E6	Avaya Virtual Services Platform 7000 AC Power Supply (Back-to-Front Cooling)
AL7000A1F-E6	Avaya Virtual Services Platform 7000 DC Power Supply (Front-to-Back Cooling)
AL7000A1B-E6	Avaya Virtual Services Platform 7000 DC Power Supply (Back-to-Front Cooling)
AL7000FTB-E6	Spare Fan for Avaya Virtual Services Platform 7000 (Front-to-Back Cooling)
AL7000BTF-E6	Spare Fan for Avaya Virtual Services Platform 7000 (Back-to-Front Cooling)
AL7011001-E6	Avaya Virtual Services Platform 7000 4 Post Server Rack Mount Kit
Where applicable the seventh character (?) of the Order Code is replaced to indicate the required product nationalization:	
A	No Power Cord option
B	Includes European "Schuko" Power Cord option, common in Austria, Belgium, Finland, France, Germany, Netherlands, Norway and Sweden
C	Includes Power Cord used in UK and Ireland
D	Includes Power Cord used in Japan
E	Includes Power Cord used in North America
F	Includes Power Cord used in Australia, New Zealand and People's Republic of China

Specifications

General and Performance

- Switch Fabric Architecture: 1,280Gbps Full-Duplex
- Fabric Interconnect Architecture: up to 80Tbps Full-Duplex*
- Fabric Interconnect Stack Architecture with 8 units: > 5Tbps Full-Duplex*
- Frame forwarding rate: 960Mpps per Switch
- Typical Latency: ~500nsec
- Typical Jitter: 12 – 14Qsec
- Frame length: 64 – 1518 Bytes (802.1Q Untagged), 64 – 1522 bytes (802.1Q Tagged)
- Jumbo Frame support: up to 9,000 Bytes (802.1Q Tagged)
- Multi-Link Trunks: up to 12 Groups, with 4 Links per Group
- VLANs: up to 1,024 Port/ Protocol/802.1Q-based
- Multiple Spanning Tree Groups: 8
- MAC Address: up to 128k
- DHCP Snooping: up to 1,024 table entries*
- ARP Entries: up to 1,792*
- IP Interfaces: up to 64*
- IPv4 Routes: up to 4k*
- OSPF Instances: up to 4*
- OSPF Adjacencies: up to 16*

Pluggable Interfaces

- 10GBASE-SR up to 300m reach over MMF (Duplex LC)
- 10GBASE-LRM up to 220m over FDDI-grade MMF (Duplex LC)
- 10GBASE-LR/LW up to 10km reach over SMF (Duplex LC)
- 10GBASE-ER/EW up to 40km reach over SMF (Duplex LC)
- 10GBASE-ZR/ZW up to 80km reach over SMF (Duplex LC)
- 1000BASE-T up to 100m over CAT5E or better UTP Cable (RJ-45)
- 1000BASE-SX up to 550m reach on MMF (Duplex LC)
- 1000BASE-SX up to 550m reach on MMF (Duplex MTRJ)
- 1000-BASE-LX up to 550m reach on MMF, and up to 10 km on SMF (Duplex LC)
- 1000BASE-XD CDWM up to 40 km reach on SMF (Duplex LC)
- 1000BASE-ZX CDWM up to 70 km reach on SMF (Duplex LC)
- 1000BASE-EX up to 120 km reach on SMF (Duplex LC)
- 1000BASE-BX up to 10 and 40 km reach variants on SMF (LC)

IEEE and IETF Standards Compliance

- IEEE 802.1D Spanning Tree Protocol
- IEEE 802.1Q VLAN Tagging

- IEEE 802.1p Prioritizing
- IEEE 802.1s Multiple Spanning Tree*
- IEEE 802.1w Rapid Reconfiguration of Spanning Tree*
- IEEE 802.1AB Link Layer Discovery Protocol*
- IEEE 802.1aq Shortest Path Bridging*
- IEEE 802.1Qau Congestion Notification*
- IEEE 802.1Qaz Enhanced Transmission Selection*
- IEEE 802.1Qbb Priority-based Flow Control*
- IEEE 802.3 Ethernet
- IEEE 802.3u Fast Ethernet
- IEEE 802.3x Flow Control
- IEEE 802.3z Gigabit Ethernet
- IEEE 802.3ab Gigabit Ethernet over Copper
- IEEE 802.3ad Link Aggregation*
- RFC 768 UDP
- RFC 791 IP
- RFC 792 ICMP
- RFC 793 TCP
- RFC 826 ARP
- RFC 854 Telnet
- RFC 894 IP over Ethernet
- RFC 951 BootP
- RFC 1112 IGMPv1*
- RFC 1157 SNMP
- RFC 1213 MIB-II
- RFC 1271 RMON
- RFC 1350 TFTP
- RFC 1493 Bridge MIB
- RFC 1583 OSPF v2*
- RFC 1757 RMON
- RFC 1850 OSPF v2 MIB*
- RFC 1945 HTTP v1.0

- RFC 2131 DHCP
- RFC 2236 IGMPv2*
- RFC 2328 OSPF v2*
- RFC 2362 PIM-SM*
- RFC 2474 DiffServ
- RFC 2475 DiffServ
- RFC 2665 Ethernet MIB
- RFC 2674 Q-BRIDGE-MIB
- RFC 2737 Entity MIBv2
- RFC 2819 RMON MIB
- RFC 2863 Interfaces Group MIB
- RFC 2865 RADIUS
- RFC 3046 DHCP Relay Agent Information Option*
- RFC 3410 SNMPv3*
- RFC 3411 SNMP Frameworks
- RFC 3412 SNMP Message Processing
- RFC 3413 SNMPv3 Applications
- RFC 3414 SNMPv3 USM
- RFC 3415 SNMPv3 VACM
- RFC 3917 IP Flow Information Export*
- RFC 3954 NetFlow Services Export v9*
- RFC 3993 Subscriber-ID Sub-option for DHCP*
- RFC 4022 TCP MIB
- RFC 4113 UDP MIB
- RFC 4293 IPv6*

Weights and Dimensions

- Height: 4.37cm, 1RU
- Width: 43.82cm
- Depth: 60.0cm
- Weight: 9kg for the base unit, and 12.2kg with Power Supplies, Fan Trays, and MDA installed

Power Specifications

- Input Voltage: 100-240 VAC
- Input Current
  • 1.5-2.0A @ 100-120 VAC
  • 0.75-1.0A @ 200-240 VAC
- Power Consumption (without MDA):180 W
- Power Consumption with MDA:200 W
- Power Consumption (theoretical maximum): 400W
- Thermal Rating (typical): 615-685 BTU/h

Environmental Specifications

- Operating temperature: 0 – 50°C
- Storage temperature: -40 to 85°C
- Operating humidity: 5 – 95% maximum relative humidity, non-condensing
- Storage humidity: 10 to 90% maximum relative humidity, non-condensing
- Operating altitude: 0 to 3,692 maximum
- Storage altitude: 0 to 12,192 maximum
- Acoustic Noise: less than 45 – 55dB at 35°C

RoHS Compliance

- Avaya Virtual Services Platform 7000 products, switches and field-replaceable components, are free of all six of the substances named in the European Union's directive on the restriction of the use of hazardous substances in electrical and electronic equipment.

Safety Agency Approvals

- Global basis for certification: EN 60950 current edition with CB national member deviations
- Mexico: complies with NOM

Electromagnetic Emissions & Immunity

- Global basis for certification: CISPR 22 Class A & CISPR 24, IEC 60950 with CB member national deviations
- US: complies with FCC CFR47 Part 15
- Canada: complies with ICES Class A
- Europe: complies with EN 55022 Class A; EN 55024; EN 300386 V1.3.3 Class A
- European Union & EFTA: complies with EN 55022; EN 55024; EN 61000-3-2; EN 61000-3-3
- Japan/Nippon: complies with VCCI
- Taiwan: complies with BSMI CNS 13428 & 14336, Class A
- Korea: complies with MIC Class A

Redundant Power

- 2 field-replaceable hot-swappable AC or DC internal Power Supplies

MTBF Values

- Avaya Virtual Services Platform 7000 base unit: 241,000 hours

Warranty

- Lifetime Next Business Day hardware replacement
- Lifetime Basic Technical Support
- 90-Day Advanced Technical Support
- Optional Software Release Service also available: GW5300ASG / GW6300ASG

Country of Origin

- China (PRC)

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* Indicates a roadmap feature that is forecast to be delivered in a future software release.

About Avaya

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