AT-DC2552XS/L3

High Performance, Stackable 10 and 40 Gigabit Layer 3 Switch

Designed for enterprise core and private cloud environments, the Allied Telesis DC2552XS/L3 switch provides high density 10GbE connectivity, 40GbE uplinks, and Virtual Chassis Stacking (VCStack™), to meet the demands of today's large data, cloud, and enterprise workloads.

Overview

The AT-DC2552XS/L3 is a 48 x 10GbE (SFP+) port high-bandwidth and high density switch designed for large data applications. It provides four QSFP+ 40Gb slots which can connect two units together in a VCStack—perfect for a high capacity resilient network core.

A smarter enterprise data center can be achieved by connecting servers and storage facilities with a high-speed, low latency network fabric that is faster, greener, and easy to manage. This switch delivers 1280Gbps of switching fabric with ultra low sub-µsec latency, and also provides 1+1 resilient power in a very compact 1RU chassis.

High-bandwidth

As bandwidth-intensive applications such as Web 2.0, virtualization, High-Performance Computing (HPC) and Network Attached Storage (NAS) continue to proliferate within enterprise data centers, 10 and 40 Gigabit Ethernet provides a cost effective way to increase throughput and seamlessly deliver customer service level agreements.

Future-proof

The performance of 40GbE uplinks and 48 x 10GbE ports empowers companies to expand application capabilities, and quickly respond to changing customer needs and market conditions. In combination with the AT-VNC10S Network Interface Cards for servers, clients can reduce costs and complexity.

The DC2552XS/L3 is Software Defined Networking (SDN) ready and able to support OpenFlow v1.3.

High Availability

The AT-DC2552XS/L3 has two slots for hot-swappable power supplies and fans. Also SFP+ and QSFP+ modules can be easily removed and replaced with no interruption to the network. These hot-swappable modules guarantee the continued delivery of essential services.

Cut-through

Cut-through switching sends packets to their destination as soon as the first packet is ready. The delay is minimal and the packet reaches its destination in the shortest possible time. With cut-through mode, the AT-DC2552XS/L3 forwards packets with a latency of 800 nanoseconds, and is ideal for inter-server communication.

Air Flow

Cooling air flow has become a major design concern in modern data centers. The AT-DC2552XS/L3 utilizes back (PSU/and FAN side) to front (ports side) airflow which is suitable for rack mounting in data centers.

Powerful Network Management

Meeting the increased management requirements of modern converged networks, Allied Telesis Management Framework™ (AMF) automates many everyday tasks including configuration management. The complete network can be managed as a single virtual device with powerful centralized management features. Growing the network can be accomplished with Plug-and-Play simplicity, and network node recovery is fully zero-touch. AMF Guestnode allows third party devices, such as IP phones and security cameras, to be part of an AMF network.

Eco-friendly

In keeping with our commitment to environmentally friendly products, this switch is designed to reduce power consumption and minimize hazardous waste.

New Features

- Allied Telesis Management Framework (AMF) Master
- AMF Guestnode
- Active Fiber Monitoring
- Long-Distance stacking over 40G
- OpenFlow for SDN
- Microsoft Network Load Balancing (MS NLB) support
- VLAN ACLs

Key Features

Allied Telesis Management Framework (AMF)

- Allied Telesis Management Framework (AMF) is a sophisticated suite of management tools that provide a simplified approach to network management. Powerful features like centralized management, auto-backup, auto-upgrade, auto-provisioning and auto-recovery enable plug-and-play networking and zero-touch management.
- Any AT-DC2552XS/L3 switch can operate as the AMF network master, storing firmware and configuration backups for other network nodes. The AMF master enables auto-provisioning and auto-upgrade by providing appropriate files to new network members. New network devices can be pre-provisioned making installation easy because no on-site configuration is required.
- AMF Guestnode allows Allied Telesis wireless access points and further switching products, as well as third party devices such as IP phones and security cameras, to be part of an AMF network.

VCStack (Virtual Chassis Stacking)

- Create a single virtual device out of two units with VCStack. VCStack provides a highly available system where network resources are spread out across stacked units, reducing the impact if one of the units fails. Aggregating switch ports on different units across the stack provides excellent network resiliency.

Long-distance Stacking

- Long-distance stacking allows a VCStack to be created over longer distances, perfect for a distributed network environment.

EPSRing (Ethernet Protection Switched Ring)

- EPSRing and 10 Gigabit Ethernet allow several DC2552XS/L3 switches to form high-speed protected rings capable of recovery within as little as 50ms. This feature is perfect for high performance and high availability in enterprise networks.
- Super-Loop Protection (SLP) enables a link between two EPSR nodes to be in separate EPSR domains, improving redundancy and network fault resiliency.

High Reliability

- The DC2552XS/L3 switches feature front to back cooling and dual power supply units (PSUs). The DC2552XS/L3 features dual hot-swappable load sharing power supplies for maximum uptime, and the option of either front-to-back or back-to-front cooling. This makes it ideal for use as a top-of-rack data center switch.

Virtual Routing and Forwarding (VRF Lite)

- VRF Lite provides Layer 3 network virtualization by dividing a single switch into multiple independent virtual routing domains. With independent routing domains, IP addresses can overlap without causing conflict, allowing multiple customers to have their own secure virtual network within the same physical infrastructure.

sFlow

- sFlow is an industry-standard technology for monitoring high speed switched networks. It provides complete visibility into network use, enabling performance optimization, usage accounting/billing, and defense against security threats. Sampled packets sent to a collector ensure it always has a real-time view of network traffic.

Virtual Router Redundancy Protocol (VRRPv3)

- VRRPv3 is a protocol for providing device redundancy, by connecting redundant WAN gateway routers or server access switches in an IPv6 network. It allows a backup router or switch to automatically take over if the primary (master) router or switch fails.

Open Shortest Path First (OSPFv3)

- OSPF is a scalable and adaptive routing protocol for IP networks. The addition of OSPFv3 adds support for IPv6 and further strengthens the Allied Telesis focus on next-generation networking.

Dynamic Host Configuration Protocol (DHCPv6)

- DHCPv6 is used to dynamically assign IPv6 addresses to hosts from a central location. Acting as DHCPv6 client enables the switch to receive an IPv6 address, and acting as server enables the switch to dynamically allocate IPv6 addresses to hosts. The DHCPv6 server and client both support the Prefix Delegation feature, which allocates a whole IPv6 subnet to a DHCP client. The client, in turn, can allocate addresses from this subnet to the hosts that are connected to it.

Hardware performance

- Layer-3 switching and routing is performed in specialized ASIC hardware for wirespeed packet forwarding and maximum throughput.

Ease of management

- The AlliedWare Plus operating system incorporates an industry-standard CLI, facilitating intuitive manageability.
- Configuration tasks can be automated since commands may be used in scripts. Triggers can also be utilized. These provide a powerful mechanism for automatic and timed management, by automating command execution in response to specific events.
- With three distinct user modes, the CLI is highly secure, and the use of encrypted remote login sessions ensures CLI access is not compromised.

Active Fiber Monitoring

- Active Fiber Monitoring prevents eavesdropping on fiber communications by monitoring received optical power. If an intrusion is detected, the link can be automatically shut down, or an operator alert can be sent.

Premium Software License

- By default, the DC2552XS/L3 switch offers a comprehensive Layer 2 and basic Layer 3 feature set that includes static routing and IPv6 management features. The feature set can easily be elevated to full Layer 3 by applying the premium software license. This adds dynamic routing protocols and Layer 3 multicasting capabilities.

Find Me

- In busy server rooms, comprised of a large number of equipment racks, it can be quite a job finding the correct switch quickly among many similar units. The “find me” feature is a simple visual way to quickly identify the desired physical switch for maintenance or other purposes, by causing its LEDs to flash in a specified pattern.

UniDirectional link Detection

- UniDirectional Link Detection (UDLD) is useful for monitoring fiber-optic links between two switches that use two single-direction fibers to transmit and receive packets. UDLD prevents traffic from being sent across a bad link by blocking the ports at both ends of the link in the event that either the individual transmitter or receiver for that connection fails.

Software Defined Networking (SDN)

- OpenFlow is a key technology that enables the use of SDN to build smart applications that unlock value and reduce cost.

Microsoft Network Load Balancing (MS NLB) Support

- Support for MS NLB, which clusters identical servers together for increased performance through load-sharing.

VLAN ACLs

- Simplify access and traffic control across entire segments of the network. Access Control Lists (ACLs) can be applied to a Virtual LAN (VLAN) as well as a specific port.

Key Solutions

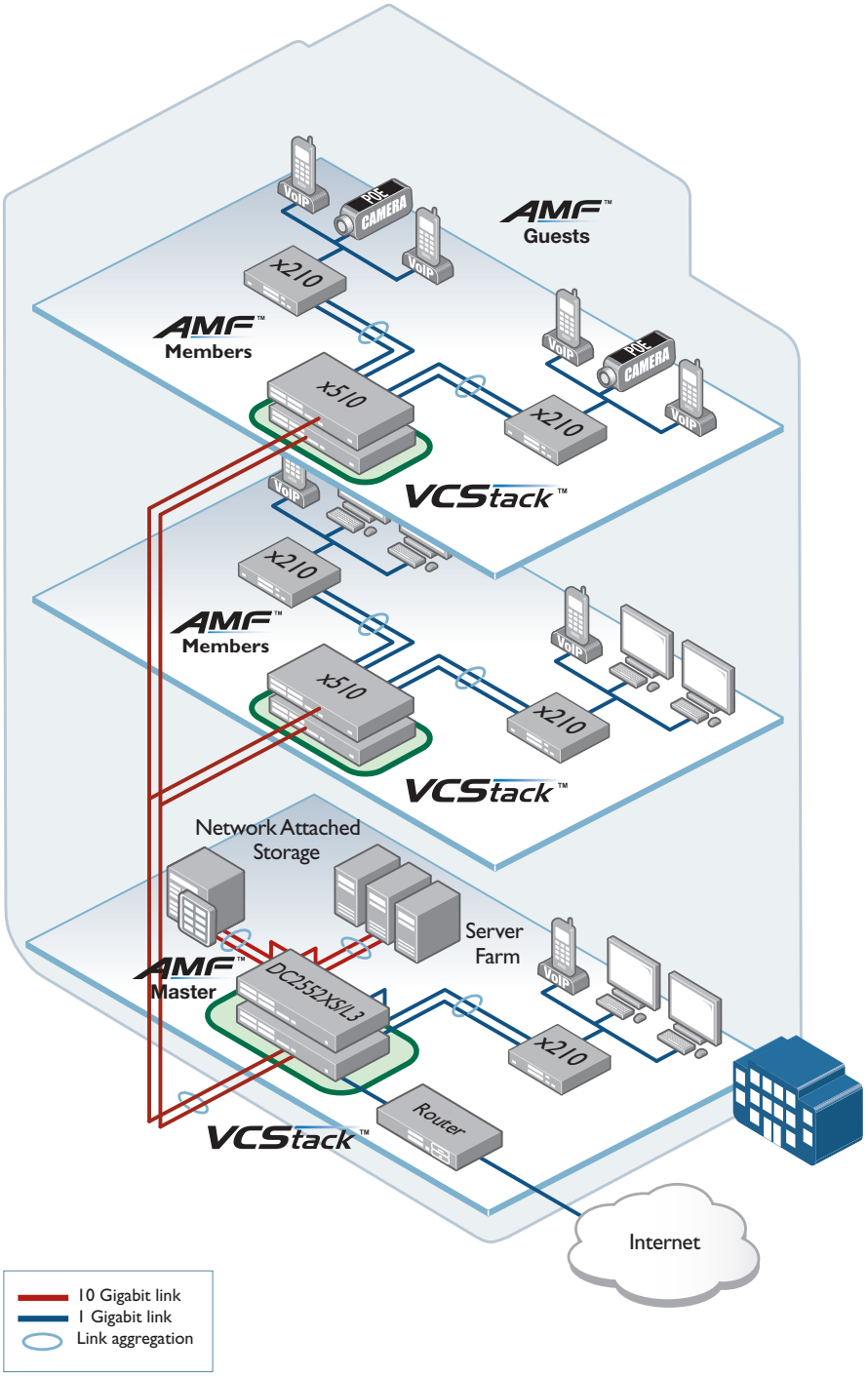
Resilient Network Core

The convergence of network services in the enterprise has led to increasing demand for high performing networks with minimal downtime.

The Allied Telesis DC2552XS/L3 10GbE Layer 3 switch provides high density 10 Gigabit connectivity, and the ability to create a single virtual chassis out of 2 units with VCStack. With the benefits of high availability, increased capacity, and ease of management, VCStack makes networking reliable and simple.

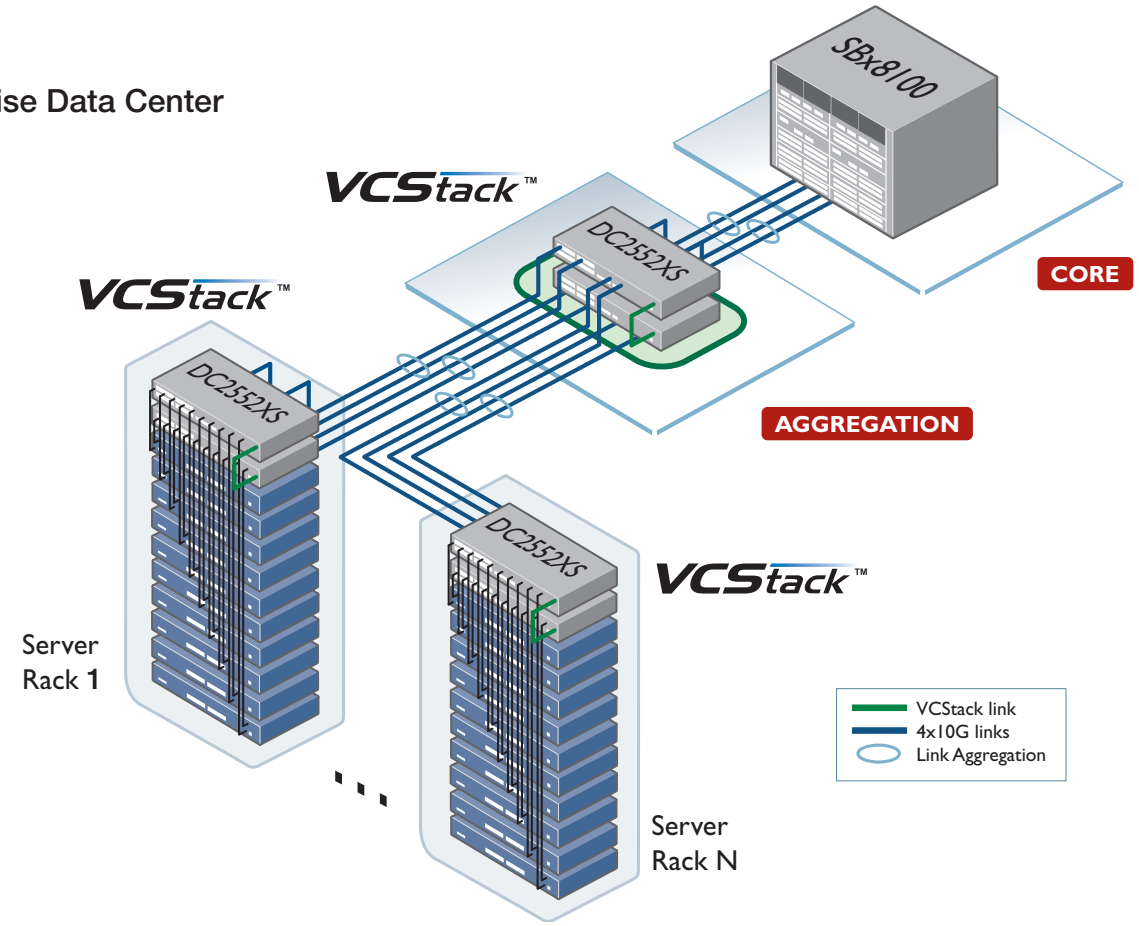
The diagram shows link aggregation between the core VCStack and distribution switches, as well as servers and storage. With link aggregation across ports on different virtual chassis members, there is no perceptible disruption in the case of a link failure, and the full bandwidth of the network remains available. Fast Failover ensures access to online resources is always available, and real-time applications like VoIP and streaming video are assured premium service on the network.

AMF allows the network to be managed as a single virtual entity, greatly reducing administration and automating many day-to-day tasks. AMF Guestnode allows third party devices, such as IP phones and security cameras, to be part of the AMF network.



Key Solutions

Enterprise Data Center



This network configuration enables servers and storage to communicate with low-latency high-speed connectivity. VCStack creates a single virtual unit out of two devices with high-speed 40 Gigabit QSFP+ connections, ensuring no single point of failure.

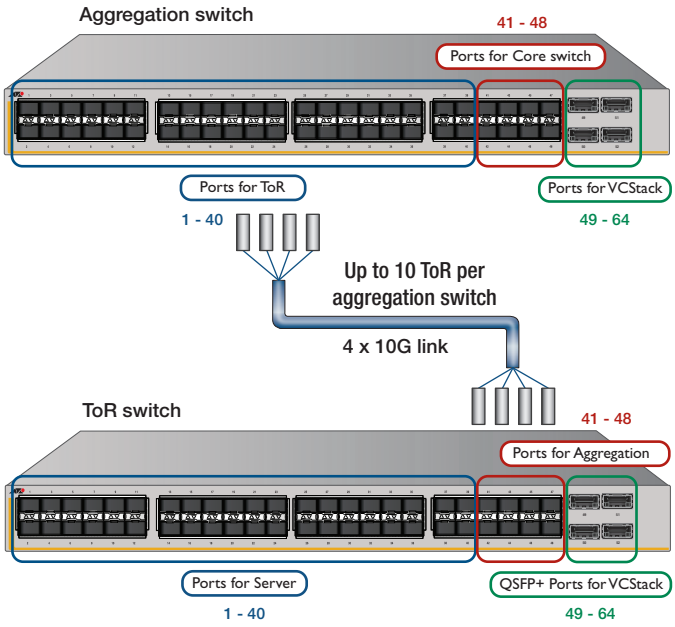
Aggregation VCStack

- Two DC2552XS/L3 switches can be stacked with QSFP direct attach cables, or optics.
- Multiple 10Gb connections using link aggregation ensures high-speed resilient data transfer.

Top of Rack (ToR) VCStack

- Two DC2552XS/L3 switches can be stacked with QSFP direct attach cables, or optics.
- Servers and storage devices can be connected to both ToR switches using link aggregation for high availability and network resiliency.

Port Usage



Specifications

- Switch ports
  48 SFP+ (1G/10G) slots
  4 QSFP+ (4x10G/40G) slots
- Supports any combination of 1000X, 1000SX, 1000LX, 1000ZX, 1000ZX CWDM, SFP or 10G-SR SFP+ modules
- Console port
  RS-232 (USB connector) x 1
- Management port (eth0)
  10/100/1000T (RJ-45 connector) x 1
  Auto negotition, MDI-MDI-X
- Forwarding rate 952.32Mpps
- Switching capacity 1280Gbps
- 9MB packet buffer

Performance

- IPv4 routes 16K
- IPv6 routes 8K
- 128K MAC addresses
- Maximum jumbo frames 12Kbytes
- Cut-through mode Latency 10GB:800ns (64byte)
- 1.2Ghz CPU, 2GB RAM, 128MB flash memory
- Wirespeed switching (unicast and multicast) on all ethernet ports

Diagnostic Tools

- Built-In Self Test (BIST)
- Find-me device locator
- Automatic link flap detection and port shutdown
- Optical Digital Diagnostic Monitoring (DDM)
- UniDirectional Link Detection (UDLD)
- Ping polling for IPv4 and IPv6
- Port mirroring
- TraceRoute for IPv4 and IPv6

IPv4 Standards

- Black hole routing
- Directed broadcast forwarding
- DNS relay
- Equal Cost Multi Path (ECMP) routing
- Policy-based routing
- Route maps
- Route redistribution (OSPF, BGP, RIP)
- Static unicast and multicast routes for IPv4
- UDP broadcast helper (IP helper)
- Up to 64 Virtual Routing and Forwarding (VRF lite) domains (with license)

IPv6 Standards

- DHCPv6 client and relay
- DNSv6 client and relay
- IPv4 and IPv6 dual stack
- IPv6 aware storm protection and QoS
- IPv6 hardware ACLs
- Device management over IPv6 networks with SNMPv6, Telnetv6 and SSHv6
- NTPv6 client and server
- Static unicast and multicast routes for IPv6
- Log to IPv6 hosts with Syslog v6

Management

- Allied Telesis Management Framework (AMF) enables powerful centralized management and zero-touch device installation and recovery
- Try AMF for free with the built-in AMF Starter license
- Console management port on the front panel for ease of access
- Eco-friendly mode allows ports and LEDs to be disabled to save power
- Industry-standard CLI with context-sensitive help
- Powerful CLI scripting engine
- Comprehensive SNMP MIB support for standards-based device management
- Built-in text editor
- Event-based triggers allow user-defined scripts to be executed upon selected system events

Quality of Service (QoS)

- 8 priority queues with a hierarchy of high priority queues for real time traffic, and mixed scheduling, for each switch port
- Limit bandwidth per port or per traffic class down to 64kbps
- Wirespeed traffic classification with low latency essential for VoIP and real-time streaming media applications
- Policy-based QoS based on VLAN, port, MAC and general packet classifiers
- Policy-based storm protection
- Extensive remarking capabilities
- Taildrop for queue congestion control
- Strict priority, weighted round robin or mixed scheduling
- IP precedence and DiffServ marking based on Layer 2, 3 and 4 headers

Resiliency

- Control Plane Prioritization (CPP) ensures the CPU always has sufficient bandwidth to process network control traffic
- Dynamic link failover (host attach)
- EPSRing (Ethernet Protection Switched Rings) with SuperLoop Protection (SLP) and enhanced recovery for extra resiliency
- Loop protection: loop detection and thrash limiting
- PVST+ compatibility mode
- STP root guard
- Long-Distance VCStack with 40G QSFP+ modules
- QSFP+ stacking ports can be configured as 40G Ethernet ports
- VCStack fast failover minimizes network disruption

Security

- Access Control Lists (ACLs) based on Layer 3 and 4 headers, per VLAN or port
- Configurable ACLs for management traffic
- Configurable auth-fail and guest VLANs
- Authentication, Authorisation and Accounting (AAA)
- Bootloader can be password protected for device security
- BPDU protection
- DHCP snooping, IP source guard and Dynamic ARP Inspection (DAI)
- DoS attack blocking and virus throttling
- Dynamic VLAN assignment
- MAC address filtering and MAC address lock-down
- Network Access and Control (NAC) features manage endpoint security
- Port-based learn limits (intrusion detection)
- Private VLANs provide security and port isolation for multiple customers using the same VLAN
- Secure Copy (SCP)
- Strong password security and encryption
- Tri-authentication: MAC-based, web-based and IEEE 802.1x
- RADIUS group selection per VLAN or port

Environmental Specifications

- Operating temperature 0ºC to 40ºC
- Storage temperature -20ºC to 60ºC
- Operating humidity (non-condensing) 10% to 80%
- Storage humidity 5% to 90% (non-condensing)

Safety and Electromagnetic Emissions Certifications

- EMI: FCC class A, CISPR class A, EN55022 class A
- C-TICK, VCCI Class A, CE
- Immunity: EN50024, EN601000-3-3, EN601000-3-2
- Safety: UL 60950-1 (cUlus), EN60950-1 (TUV)

Restrictions on Hazardous Substances (RoHS) Compliance

- Compliant with European RoHS standards

- Physical Specifications
- 19 inch rack mount
- Dimensions 44.1 cm x 46 cm x 4.4 cm
- (W x D x H) 17.4 in x 18.1 in x 1.7 in
- Weight 8.3 kg /18.3 lb (chassis only)
  11.3 kg/24.9 lb (chassis with two fans and two PSUs)

Power Characteristics

- Voltage: 100-240V AC (10% auto-ranging)
- Frequency: 50/60 Hz
- Maximum current: 14A @ 100V
- Heat dissipation: 900 BTU/hr

Power Consumption

- 250W (max 280W)

Noise Characteristics

- Tba - Tested to ISO7779; front bystander position

Package Contents

- AT-DC2552XS/L3 switch with two PSU bay cover and two FAN unit bay covers
- Management cable (RS-232 to USB)
- Rubber feet and 19" rack-mountable hardware kit accessories

Country of Origin

- China

Standards and Protocols

AlliedWare Plus Operating System
Version 5.4.6-2

Border Gateway Protocol (BGP)
BGP dynamic capability
BGP outbound route filtering
RFC 1772 Application of the Border Gateway Protocol (BGP) in the Internet
RFC 1997 BGP communities attribute
RFC 2385 Protection of BGP sessions via the TCP MD5 signature option
RFC 2439 BGP route flap damping
RFC 2545 Use of BGP-4 multiprotocol extensions for IPv6 inter-domain routing
RFC 2858 Multiprotocol extensions for BGP-4
RFC 2918 Route refresh capability for BGP-4
RFC 3392 Capabilities advertisement with BGP-4
RFC 3882 Configuring BGP to block Denial-of-Service (DoS) attacks
RFC 4271 Border Gateway Protocol 4 (BGP-4)
RFC 4360 BGP extended communities
RFC 4456 BGP route reflection - an alternative to full mesh iBGP
RFC 4724 BGP graceful restart
RFC 4893 BGP support for four-octet AS number space
RFC 5065 Autonomous system confederations for BGP

Cryptographic Algorithms
FIPS Approved Algorithms
Encryption (Block Ciphers):
- AES (ECB, CBC, CFB and OFB Modes)
- 3DES (ECB, CBC, CFB and OFB Modes)

Block Cipher Modes:
- CCM
- CMAC
- GCM
- XTS

Digital Signatures & Asymmetric Key Generation:
- DSA
- ECDSA
- RSA

Secure Hashing:
- SHA-1
- SHA-2 (SHA-224, SHA-256, SHA-384. SHA-512)

Message Authentication:
- HMAC (SHA-1, SHA-2(224, 256, 384, 512)

Random Number Generation:
- DRBG (Hash, HMAC and Counter)

Non FIPS Approved Algorithms
RNG (AES128/192/256)
DES
MD5

Ethernet
IEEE 802.1AX Link aggregation (static and LACP)
IEEE 802.2 Logical Link Control (LLC)
IEEE 802.3 Ethernet
IEEE 802.3ab 1000BASE-T
IEEE 802.3ad Static and dynamic link aggregation
IEEE 802.3ae 10 Gigabit Ethernet
IEEE 802.3ba 40 Gigabit Ethernet
IEEE 802.3x Flow control - full-duplex operation
IEEE 802.3z 1000BASE-X

IPv4 Standards
RFC 768 User Datagram Protocol (UDP)
RFC 791 Internet Protocol (IP)
RFC 792 Internet Control Message Protocol (ICMP)
RFC 793 Transmission Control Protocol (TCP)
RFC 826 Address Resolution Protocol (ARP)
RFC 894 Standard for the transmission of IP data grams over Ethernet networks
RFC 919 Broadcasting Internet datagrams
RFC 922 Broadcasting Internet datagrams in the presence of subnets
RFC 932 Subnetwork addressing scheme
RFC 950 Internet standard subnetting procedure
RFC 951 Bootstrap Protocol (BootP)
RFC 1027 Proxy ARP
RFC 1035 DNS client
RFC 1042 Standard for the transmission of IP data grams over IEEE 802 networks
RFC 1071 Computing the Internet checksum
RFC 1122 Internet host requirements
RFC 1191 Path MTU discovery
RFC 1256 ICMP router discovery messages
RFC 1518 An architecture for IP address allocation with CIDR
RFC 1519 Classless Inter-Domain Routing (CIDR)
RFC 1542 Clarifications and extensions for BootP
RFC 1591 Domain Name System (DNS)
RFC 1812 Requirements for IPv4 routers
RFC 1918 IP addressing
RFC 2581 TCP congestion control

IPv6 Standards
RFC 1981 Path MTU discovery for IPv6
RFC 2460 IPv6 specification
RFC 2464 Transmission of IPv6 packets over Ethernet networks
RFC 3056 Connection of IPv6 domains via IPv4 clouds
RFC 3484 Default address selection for IPv6
RFC 3596 DNS extensions to support IPv6
RFC 4007 IPv6 scoped address architecture
RFC 4193 Unique local IPv6 unicast addresses
RFC 4291 IPv6 addressing architecture
RFC 4443 Internet Control Message Protocol (ICMPv6)
RFC 4861 Neighbor discovery for IPv6
RFC 4862 IPv6 Stateless Address Auto-Configuration (SLAAC)
RFC 5014 IPv6 socket API for source address selection
RFC 5095 Deprecation of type 0 routing headers in IPv6
RFC 5175 IPv6 Router Advertisement (RA) flags option
RFC 6105 IPv6 Router Advertisement (RA) guard

Management
AMF MIB and SNMP traps
AT Enterprise MIB
SNMPv1, v2c and v3
IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
RFC 1155 Structure and identification of management information for TCP/IP-based Internets
RFC 1157 Simple Network Management Protocol (SNMP)
RFC 1212 Concise MIB definitions
RFC 1213 MIB for network management of TCP/IP-based Internets: MIB-II
RFC 1215 Convention for defining traps for use with the SNMP
RFC 1227 SNMP MUX protocol and MIB
RFC 1239 Standard MIB
RFC 1724 RIPv2 MIB extension
RFC 2096 IP forwarding table MIB
RFC 2578 Structure of Management Information v2 (SMIv2)
RFC 2579 Textual conventions for SMIv2
RFC 2580 Conformance statements for SMIv2
RFC 2674 Definitions of managed objects for bridges with traffic classes, multicast filtering and VLAN extensions
RFC 2741 Agent extensibility (AgentX) protocol
RFC 2787 Definitions of managed objects for VRRP
RFC 2819 RMON MIB (groups 1,2,3 and 9)
RFC 2863 Interfaces group MIB
RFC 3164 Syslog protocol
RFC 3176 sFlow: a method for monitoring traffic in switched and routed networks
RFC 3411 An architecture for describing SNMP management frameworks
RFC 3412 Message processing and dispatching for the SNMP
RFC 3413 SNMP applications
RFC 3414 User-based Security Model (USM) for SNMPv3
RFC 3415 View-based Access Control Model (VACM) for SNMP
RFC 3416 Version 2 of the protocol operations for the SNMP
RFC 3417 Transport mappings for the SNMP
RFC 3418 MIB for SNMP
RFC 3635 Definitions of managed objects for the Ethernet-like interface types
RFC 3636 IEEE 802.3 MAU MIB
RFC 4022 SNMPv2 MIB for TCP using SMIv2
RFC 4113 SNMPv2 MIB for UDP using SMIv2
RFC 4293 SNMPv2 MIB for IP using SMIv2
RFC 4188 Definitions of managed objects for bridges
RFC 4318 Definitions of managed objects for bridges with RSTP
RFC 4560 Definitions of managed objects for remote ping, traceroute and lookup operations
RFC 6527 Definitions of managed objects for VRRPv3

Multicast Support
Bootstrap Router (BSR) mechanism for PIM-SM
IGMP query solicitation
IGMP snooping (IGMPv1, v2 and v3)
IGMP snooping fast-leave
IGMP/MLD multicast forwarding (IGMP/MLD proxy)
MLD snooping (MLDv1 and v2)
PIM-SM and SSM for IPv6
RFC 1112 Host extensions for IP multicasting (IGMPv1)
RFC 2236 Internet Group Management Protocol v2 (IGMPv2)
RFC 2710 Multicast Listener Discovery (MLD) for IPv6
RFC 2715 Interoperability rules for multicast routing protocols
RFC 3376 IGMPv3
RFC 3810 Multicast Listener Discovery v2 (MLDv2) for IPv6
RFC 3973 PIM Dense Mode (DM)
RFC 4541 IGMP and MLD snooping switches
RFC 4601 Protocol Independent Multicast - Sparse Mode (PIM-SM): protocol specification (revised)
RFC 4604 Using IGMPv3 and MLDv2 for source-specific multicast
RFC 4607 Protocol Independent Multicast - Source-Specific Multicast (PIM-SSM)

Open Shortest Path First (OSPF)
OSPF link-local signaling
OSPF MD5 authentication
OSPF restart signaling
Out-of-band LSDB resync
RFC 1245 OSPF protocol analysis
RFC 1246 Experience with the OSPF protocol
RFC 1370 Applicability statement for OSPF
RFC 1765 OSPF database overflow
RFC 2328 OSPFv2
RFC 2370 OSPF opaque LSA option
RFC 2740 OSPFv3 for IPv6
RFC 3101 OSPF Not-So-Stubby Area (NSSA) option
RFC 3509 Alternative implementations of OSPF area border routers
RFC 3623 Graceful OSPF restart
RFC 3630 Traffic engineering extensions to OSPF
RFC 4552 Authentication/confidentiality for OSPFv3
RFC 5329 Traffic engineering extensions to OSPFv3

Quality of Service (QoS)
IEEE 802.1p Priority tagging
RFC 2211 Specification of the controlled-load network element service
RFC 2474 DiffServ precedence for eight queues/port
RFC 2475 DiffServ architecture
RFC 2597 DiffServ Assured Forwarding (AF)
RFC 2697 A single-rate three-color marker
RFC 2698 A two-rate three-color marker
RFC 3246 DiffServ Expedited Forwarding (EF)

Resiliency

IEEE 802.1D MAC bridges (STP)
IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
RFC 5798 Virtual Router Redundancy Protocol version 3 (VRRPv3) for IPv4 and IPv6

Routing Information Protocol (RIP)

RFC 1058 Routing Information Protocol (RIP)
RFC 2080 RIPng for IPv6
RFC 2081 RIPng protocol applicability statement
RFC 2082 RIP-2 MD5 authentication
RFC 2453 RIPv2

Security

SSH remote login
SSLv2 and SSLv3
TACACS+ accounting and authentication
IEEE 802.1X authentication protocols (TLS, TTLS, PEAP and MD5)
IEEE 802.1X multi-supplicant authentication
IEEE 802.1X port-based network access control
RFC 2818 HTTP over TLS ("HTTPS")
RFC 2865 RADIUS
RFC 2866 RADIUS accounting
RFC 2868 RADIUS attributes for tunnel protocol support
RFC 3280 Internet X.509 PKI Certificate and Certificate Revocation List (CRL) profile
RFC 3546 Transport Layer Security (TLS) extensions
RFC 3579 RADIUS support for Extensible Authentication Protocol (EAP)
RFC 3580 IEEE 802.1x RADIUS usage guidelines
RFC 3748 PPP Extensible Authentication Protocol (EAP)
RFC 4251 Secure Shell (SSHv2) protocol architecture
RFC 4252 Secure Shell (SSHv2) authentication protocol
RFC 4253 Secure Shell (SSHv2) transport Layer protocol
RFC 4254 Secure Shell (SSHv2) connection protocol
RFC 5246 TLS v1.2

Services

RFC 854 Telnet protocol specification
RFC 855 Telnet option specifications
RFC 857 Telnet echo option
RFC 858 Telnet suppress go ahead option
RFC 1091 Telnet terminal-type option
RFC 1350 Trivial File Transfer Protocol (TFTP)
RFC 1985 SMTP service extension
RFC 2049 MIME
RFC 2131 DHCPv4 (server, relay and client)
RFC 2132 DHCP options and BootP vendor extensions
RFC 2616 Hypertext Transfer Protocol - HTTP/1.1
RFC 2821 Simple Mail Transfer Protocol (SMTP)
RFC 2822 Internet message format
RFC 3046 DHCP relay agent information option (DHCP option 82)
RFC 3315 DHCPv6 (server, relay and client)
RFC 3633 IPv6 prefix options for DHCPv6
RFC 3646 DNS configuration options for DHCPv6
RFC 3993 Subscriber-ID suboption for DHCP relay agent option
RFC 4330 Simple Network Time Protocol (SNTP) version 4
RFC 5905 Network Time Protocol (NTP) version 4

VLAN Support

Generic VLAN Registration Protocol (GVRP)
IEEE 802.1ad Provider bridges (VLAN stacking, Q-in-Q)
IEEE 802.1Q Virtual LAN (VLAN) bridges
IEEE 802.1v VLAN classification by protocol and port
IEEE 802.3ac VLAN tagging

Voice over IP (VoIP)

LLDP-MED ANSI/TIA-1057
Voice VLAN

Ordering Information

AT-DC2552XS/L3
48-port SFP+ slot
4-port QSFP+ slot
1-port console port
1-port management port
2 slots for PWR
2 slots for FAN

AT-RKMT-SL01
Sliding rack mount kit

AT-PWR06-xx
Hot-swappable AC power supply

AT-FAN06
Hot-swappable FAN
(Two FANs are needed to operate.
Reverse cooling airflow - port side to PSU/FAN side - is not supported)

Where xx =
10 for US power cord
30 for UK power cord
40 for Australian power cord
50 for European power cord

40G QSFP+ modules

AT-QSFP1CU
QSFP+ direct attach cable 1 m

AT-QSFP3CU
QSFP+ direct attach cable 3 m

AT-QSFPSR
40GSR 850 nm short-haul up to 150 m with MMF

AT-QSFPLR4
40GLR4 1310 nm medium-haul up to 10 km with SMF

AT-MTP12-1
MTP optical cable for AT-QSFPSR, 1 m

AT-MTP12-5
MTP optical cable for AT-QSFPSR, 5 m

Breakout Cables For 4 x 10G connections

AT-QSFP-4SFP10G-3CU
QSFP to 4 x SFP+ breakout direct attach cable (3 m)

AT-QSFP-4SFP10G-5CU
QSFP to 4 x SFP+ breakout direct attach cable (5 m)

10G SFP+ Modules

AT-SP10SR
10GSR 850 nm short-haul, 300 m with MMF

AT-SP10LRM
10GLRM 1310 nm short-haul, 220 m with MMF

AT-SP10LR
10GLR 1310 nm medium-haul, 10 km with SMF

AT-SP10ER40/I
10GER 1310nm long-haul, 40 km with SMF industrial temperature

AT-SP10T
10GBase-T 100 m copper

AT-SP10TW1
10GBASE SFP+ direct attach cable (1 m)

AT-SP10TW3
10GBASE SFP+ direct attach cable (3 m)

AT-SP10TW7
10GBASE SFP+ direct attach cable (7 m)

1000Mbps SFP Modules

AT-SPTX
1000T 100 m copper

AT-SPSX
1000SX GbE multi-mode 850 nm fiber up to 550 m

AT-SPEX
1000X GbE multi-mode 1310 nm fiber up to 2 km

AT-SPLX10
1000LX GbE single-mode 1310 nm fiber up to 10 km

Feature Licenses

NAME	DESCRIPTION	INCLUDES	STACK LICENSING
AT-FL-DC25-01	AT-DC2552XS/L3 Premium License	▶ OSPF[1] ▶ BGP4[1] ▶ PIMv4-SM, DM and SSM ▶ RIPng ▶ OSPFv3 ▶ BGP4+ ▶ MLDv1 and v2 ▶ PIMv6-SM and SSM ▶ VRF lite (64 domains) ▶ RADIUS Full ▶ UDLD ▶ EPSR	▶ One license per stack member
AT-FL-DC25-AM40-1YR	AMF Master License	▶ AMF Master 40 nodes for 1 year	▶ One license per stack
AT-FL-DC25-AM40-5YR	AMF Master License	▶ AMF Master 40 nodes for 5 years	▶ One license per stack
AT-FL-DC25-AM80-1YR	AMF Master License	▶ AMF Master 80 nodes for 1 year	▶ One license per stack
AT-FL-DC25-AM80-5YR	AMF Master License	▶ AMF Master 80 nodes for 5 years	▶ One license per stack
AT-FL-DC25-AM120-1YR	AMF Master License	▶ AMF Master 120 nodes for 1 year	▶ One license per stack
AT-FL-DC25-AM120-5YR	AMF Master License	▶ AMF Master 120 nodes for 5 years	▶ One license per stack
AT-FL-DC25-0F13-1YR	OpenFlow License	▶ OpenFlow v1.3 for 1 year	▶ Not supported on a stack
AT-FL-DC25-0F13-5YR	OpenFlow License	▶ OpenFlow v1.3 for 5 years	▶ Not supported on a stack

[1] The standard switch software supports 64 OSPF and BGP routes

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