Alpha Bridge® Technologies

AS300/54/QF DATASHEET

ALPHA BRIDGE- LAYER 3 Switch (AS300/54/QF)

Supports Max. 48 GE **2.5G/GE** Ports and 4 10G SFP+ & 2* 40 G Uplink Ports.

Advanced Hardware Architecture and Industry-leading Port Density.

Carrier-Grade, High Reliability, Layer-3 Routing Functions.

Verified Service characteristics, Versatile IPv6 solution, Complete Security Mechanism.

Product Overview

AS300/54/QF is an Alpha Bridge-developed multigigabit Ethernet switch oriented for the next-generation IP metropolitan area network, large campus network, and enterprise network.

AS300/54/QF series adopts cutting-edge hardware architecture and is equipped with the ABROS operating system with Alpha Bridge independent intellectual property rights. On the basis of providing high-performance L2/L3/L4wire-speed switching services, AS300/54/QF further integrates various network services such as IPv6 and network security.

Combined with multiple high-reliability technologies such as uninterrupted upgrades, uninterrupted forwarding, graceful restart,and redundancy protection, AS300/54/QF ensures the long-term stable communication capability of the network.
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Product Characteristics

Advanced hardware architecture, cutting-edge processing capability

AS300/54/QF 1U pizza-box switch realizes the ultra-high port density of 48-Port 2.5G base-T,4-Port 10G SFP+ & 2 Port 40G/100G Port Equipped with high-performance ASIC switch chips, the Alpha Bridge series can meet the application requirements of various complex scenarios.

Doubled performance: The virtualized system makes full use of every link between physical devices avoiding the link congestion of the traditional networking model Spanning Tree Protocol, making the best use of devices, doubling the performance, and protecting the original link investment to the greatest extent.

High Reliability: Based on advanced distributed processing technology, the efficient cross-physical device link aggregation function separates the logical control plane, service control plane, and service data plane, providing uninterrupted Layer 3 routing and forwarding and avoiding business interruption caused by the single failure.

Product Characteristics

Easy management: The entire virtual system realizes unified management of a single IP, and physical devices are visible to users, which simplifies the management of network devices and network topology, greatly improves operation efficiency, and effectively reduces operation and maintenance costs.

Carrier-level high reliability

Based on the Hitless Protection System (HPS), the key components of the S5700-P Series, such as power supply modules, are redundant backup and hot-swappable, which supports seamless switchover in case of failure without manual intervention.

S5700-P Series supports STP/RSTP/MSTP, VRRP, ring network protection, dual uplink active/standby link protection, LACP, and other simple and efficient redundancy protection mechanisms.

AS300/54/QF supports In-Service Software Upgrade (ISSU), ensuring unremitting data forwarding during system upgrade.

The ultra-high-precision BFD mechanism, through linkage with Layer 2 and Layer 3 protocols, realizes millisecond-level fault detection and service recovery, which greatly improves the reliability of the network system.

Perfect Ethernet OAM mechanism, supporting 802.3ah and 802.1ag, realizes rapid detection and location of faults throughreal-time monitoring of network operation status.

The high-reliability hardware and software of the AS300/54/QF meet the fault recovery time requirement of 50ms for carrier-level services and truly achieve the high reliability (99.999%) of carrier-class core devices.

Innovative VSS

The Alpha Bridge AS300/54/QF supports the innovative Virtual Switch System (VSS), which can virtualize multiple physical devices into one logical device with unparalleled performance, reliability, and management compared to stand- alone physical devices.

Rich service features

Perfect Layer 2 and Layer 3 multicast routing protocols meet the access requirements of IPTV, multi-terminal
high-definition video surveillance and video conferencing.

Complete Layer 3 routing protocols and large routing table capacity meet the needs of various network interconnections and can built up ultra-large campus networks, enterprise networks, and industry private networks.

Comprehensive IPv6 Solutions

Supports IPv6 multicast features such as MLD, MLD Snooping, IPv6 static routing, IPv6 Layer 3 routing protocols such as RIPng, OSPFv3, and BGP4+, providing complete IPv6 Layer 2 and Layer 3 solutions.

Supports a wealth of IPv4 to IPv6 transition technologies, including: IPv6 manual tunnel, automatic tunnel,6to4 tunnel, and ISATAP tunnel to ensure the smooth transition from the IPv4 network to the IPv6 network.

Perfect security mechanisms

Equipment-level security: The advanced hardware infrastructure design realizes the level-based packet schedule and packet protection, prevents DoS-/TCP- related SYN Flood, UDP Flood, Broadcast Storm, or large traffic attacks, and supports level-based command line protection, endowing different levels of users with different management permissions.

Perfect security authentication mechanisms: EEE802.1x, Radius, and TACACS+.

Enhanced service security mechanism: Supports clear text or MD5 authentication of related routing protocols, and Unicast Reverse Path Forwarding (uRPF), which can effectively control illegal services; supports in-depth detection and filtering of control packets and data packets, thereby effectively isolating illegal data packets and improving the security of the network system.

Innovative eco-friendly design

Intelligent power management system: AS300/54/QF adopts an advanced power system architecture design to achieve efficient power conversion, unique power monitoring, slow start function, real-time monitoring of the running status, intelligent adjustment, and deep energy saving.

Intelligent fan management system: Intelligent fan design supports automatic speed regulation, effectively reduces the speed, reduces noise, and prolongs the service life of the fan. Supports energy-efficient Ethernet function and complies with the international standard IEEE 802.3azEEE, effectively reducing energy consumption.

Model

AS300/54/QF

- **48-Port 2.5G/GE**
- **4-port 10G/GE SFP+**
- **2-Port 40G QSFP+**

Product Specifications

Item	AS300/54/QF
Interface	48-Port2.5 G/GE 4-Port 10 G/GE SFP+ 2-Port 40G QSFP
Console (RJ45)	1-Port RJ45
Switching Capacity	480 Gbps
Forwarding rate (Mpps with 64 bytes)	360 Mpps
Chassis Dimensions (WxDxH) (mm)	440*280*44
Package Dimensions (WxDxH) (mm)	576x448x94
Package Dimensions (Weight (KG)	5.2
Power supply AC: 100-240V / DC: 36-72V	AC: 100V-240V, 50/60HzDC:36-72V
Total output BTU (1000 BTU/H = 293W)	341.30
Noise@25°C (dBA)	55
MTBF(H)	>200,000
Forwarding mode	Store-forward
Flash (MB)	4GB
DRAM (MB)	2GB
MAC	64K
Buffer size (MB)	4.5
Interface VLAN	64
Routing table IPV4	16K
Routing table IPV6	8K
ARP Table IPV4	16K
ARP Table IPV6	8K
Jumbo frame	16K
Power Consumption	<100W
Total SVI	1K

Product Features

VLAN	QoS	Reliability
4K Active VLAN, Q-in-Q & Selective Q-in-Q, GVRP,Private VLAN, Voice VLAN	• Traffic classification of port/L2~4 protocol headers/VLAN/CoS/DSCP • CAR traffic control • 802.1P/DSCP priority mapping and remark • Multiple queuing algorithmssuch asSP, WRR or SP+WRR • Tail-Drop, WRED • Traffic supervision and traffic Shaping • 8 queues per port	• 802.3ad Static/LACP linkaggregation, • EAPS • G.8032 ERPS • ISSU • VRRP • GR for OSPF and BGP • BFD for OSPF and BGP • ABVSS virtual stacking system
Spanning Tree	**Security**	**Accessories**
802.1D (STP), 802.1W (RSTP) and 802.1S (32 instances MSTP) BPDU guard, root guard and Loopback guard	• DDoS attack prevention, TCP-SYN/UDP/ARP Flood attack prevention • IEEE 802.1x authentication,multiple-user authentication, guest vlan L2~L4 ACL • Anti-DOS/IP spoofing/TCP/ping/ SYN/ICMP flood attacks • Broadcast/multicast/unknown-unicast storm-control • Port isolation Port Security, MAC address limitation,IP+MAC+port binding • DHCP Snooping, DHCP Option 82 • DAI (Dynamic ARP Inspection) • IPSG (IP Source Guard), IEEE 802.1x certification • MAC-based authentication,AAA,Radius, TACACS+ • Multiple user privileges	Power cord, rackmount kits, console cable **MPLS** MCE
IPv4	**DHCP**	**Multicast**
• Static routing, RIP v1/v2, OSPF, BGP • Policy Based Routing (PBR) • ECMP • BFD for static routing, RIP, OSPF, BGP	• DHCP server, client, relay, snooping	• IGMP v1/v2c/v3 • IGMP Snooping,IGMP Fast Leave • Multicast group policyand multicast numberlimit • Multicast filtering,MVR • IGMP snooping in certainport and VLAN. • Support for transparent passing • of multicast traffic without IGMP • snooping in certain port and VLAN • PIM-DM/SM/SSM
IPv6	**Environment**	**Management**
• IPv4/v6 dual stack • ICMPv6, DHCPv6, ACLv6 and IPv6Telnet • IPv6 neighbor discovery • Path MTU discovery • MLD V1 • MLD snooping • IPv6 Static Routing, RIPng, • OSPFv3, BGP4+ • Manual tunnel, ISATAP tunnel, • 6-to-4 tunnel	• Operating temperature/humidity: 0°C-50°C,10%-90% non-condensing • Storage temperature/humidity: • -20°C-70°C, 5%-95%non-condensing	• CLI: Console, Telnet, SSHv1/2 • Web-GUI: HTTP, HTTPS/SSL • SNMP v1/v2c/v3, RMON, SNMP alarm/inform/traps. • Upload and download of • FTP/TFTP/SFTP files • Debugging • Syslog for alarm/notification/ • command/debug • Web-GUI: HTTP, HTTPS/SSL • NTP • SPAN, RSPAN (1:1 and N:1 mirror) • LLDP, LLDP-MED • sFLOW • ZTP (Zero Touch Provisioning) • Optical DDM • Ethernet cable diagnosis • 802.3ah, 802.1ag

Ordering Information

Item	Description
AS300/54/QF	48-Port 2.5G RJ45 + 4-Port 10G SFP+ 2-Port 40G QSFP+ L3 Managed Switch (dual hot- swap power slots with single AC-220V power supply; with cooling fan, 1U, standard 19-inch rack-mounted installation)

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