

S3900 Series Switches Typical Network Solution

Models: S3900-24T4S; S3900-48T4S

Overview

When the number of client nodes and high bandwidth requirements increase in a network environment, it is imperative to think about firstly what kind of access switches we need to select. With sufficient fixed gigabit copper ports and 4x 10G SFP+ uplink ports, supporting stacking up to 6 units, our S3900 series switches are high-performance Gigabit Ethernet L2+/L3 Lite managed switches, which is a decent access layer switches for your SMB, enterprise, and campus networks.

Security, simplified deployment and management are also vital factors to choose access switches. Both S3900-48T4S and S3900-24T4S switches support the segmentation of traffic through VLANs. IP source guard, DoS protection and other techniques should also be provided to prevent security from attacks. More importantly, S3900-24T4S switch features fanless, which is good for hotel, office and other applications that require a quiet environment.



Part Number	S3900-24T4S	S3900-48T4S
Layer Type	Layer 2+	Layer 2+
Port	24x 10/100/1000BASE-T RJ45	48x 10/100/1000BASE-T RJ45
	4x 10G SFP+	4x 10G SFP+
Switching Capacity	128 Gbps	176 Gbps
Forwarding Rate	95 Mpps	130 Mpps
Airflow	Fanless	Left-to-Right
Power Device	2x Power Supplies - Internal	2x Power Supplies - Internal
Dimensions (HxWxD)	1.73" x 17.32" x 11.02" (44 x 440 x 280mm)	1.73" x 17.32" x 12.99" (44 x 440 x 330mm)

Non-blocking Network Setup Among Multiple Rooms Case Study

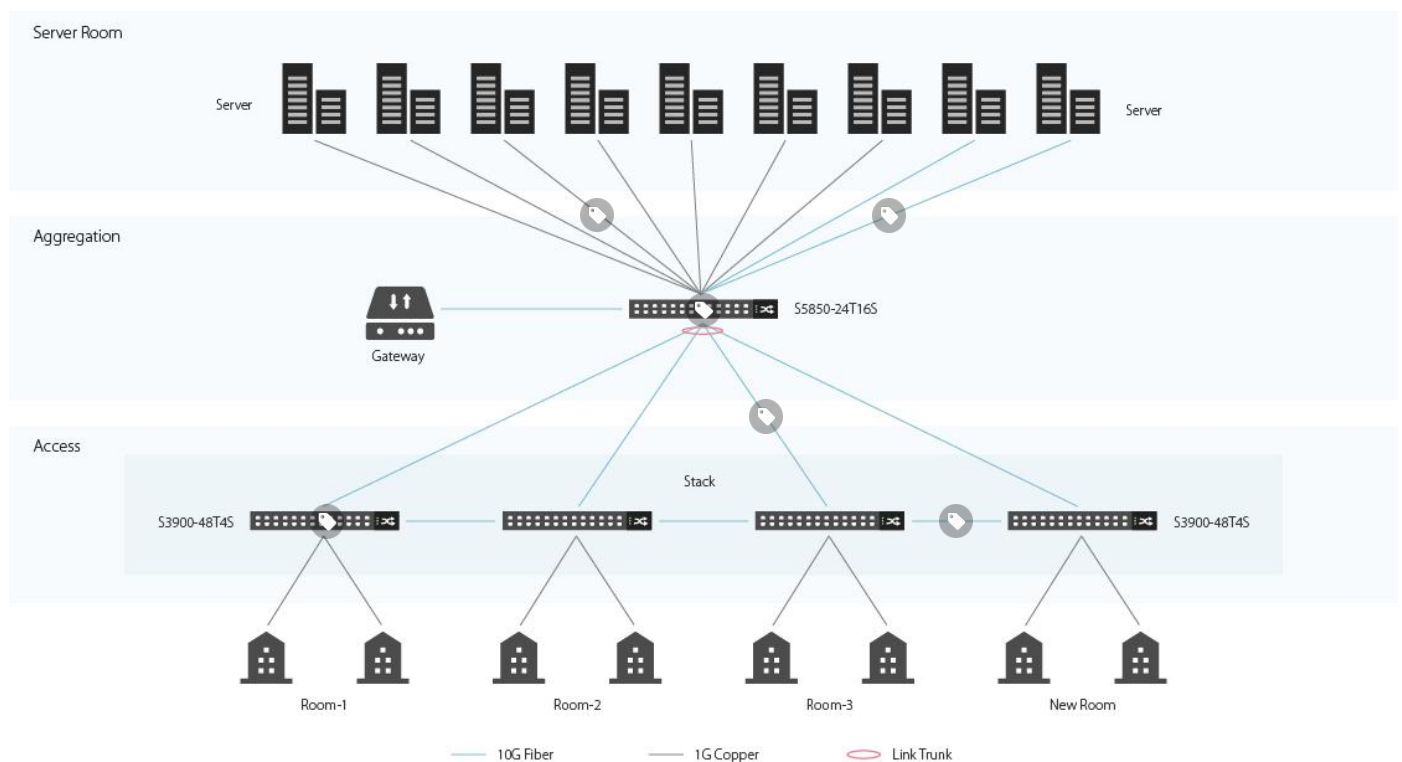
Background

Currently, the customer needs a solution to connect 3 rooms to a server room with 9 servers as well as the gateway. Among the 9 servers, 2 servers needs 10G fiber link. Each room has 24 or 35 workstations requiring 1G RJ45 connections. A central network is needed to facilitate network connectivity between rooms. Moreover, he plans to add another new room after some times .

Challenge

- Currently traffic is being blocked when all people are working, which must be solved.
- In the near future, it will be expanded to a new room, requiring high-density solution and redundancy for now.
- In order to save effort in maintaining the network, the whole network must be manageable easily.

Solution Topology



Solution Description

Upon the customer needs to add new room soon, this solution has taken this requirement into consideration. The recommended aggregation switch equips with abundant port types to meet both the number of terminals and enough bandwidth to 10GE servers requirements. Once this network architecture is set up, the management will be very convenient and simple.

Connection

S5850-24T16S: Featured 24x 10/100/1000Base-T ports and 16x 1/10G SFP/SFP+ ports, installed in server room, it can meet both 1G RJ45 connections and 10G fiber connections as an aggregation switch. And the 10G SFP+ ports can be connected to the access switches. It is a high performance routing switch for hyper-converged infrastructure.

S3900-48T4S: Up to 48x 1G RJ45 links can be established, which can meet the requirement of the workstation connection in the rooms. The 10G SFP+ ports can uplink to S5850-24T16S to transmit traffic.

Stacking: Up to 6 units S3900-48T4S switches can be stacked together. When stacked, it appears as a single switch and act cooperatively. It allows users to expand their network capacity without the hassle of managing multiple devices, and add or remove a switch from a stack as needed without affecting the overall performance of the stack.

LACP: The S5850-24T16S is connected to stacked S3900-48T4S switches respectively with LACP configuration. In this way, core link redundancy and transmission load balance is achieved. If any one or two links fail, services can be automatically switched to other links for transmission, which improves network reliability at a high level.

Product List

ID	Description
85069	S5850-24T16S 24-Port 10/100/1000BASE-T Gigabit L3 Managed Ethernet Switch with 16 10Gb SFP+ Uplinks for Hyper-Converged Infrastructure
72946	S3900-48T4S 48-Port 10/100/1000BASE-T Gigabit L2+ Stackable Managed Ethernet Switch with 4 10Gb SFP+ Uplinks
75600	Intel X710-BM2 Dual-Port 10G SFP+ PCIe 3.0 x8, Ethernet Network Interface Card
11552	FS for Cisco SFP-10G-SR Compatible, 10GBASE-SR SFP+ 850nm 300m DOM Transceiver Module (Standard)
41730	1m (3ft) LC UPC to LC UPC Duplex OM3 Multimode PVC (OFNR) 2.0mm Fiber Optic Patch Cable
70555	3ft (0.9m) Cat5e Snagless Unshielded (UTP) PVC CM Ethernet Network Patch Cable, Blue

A Large Gaming Station Network Deployment Case Study

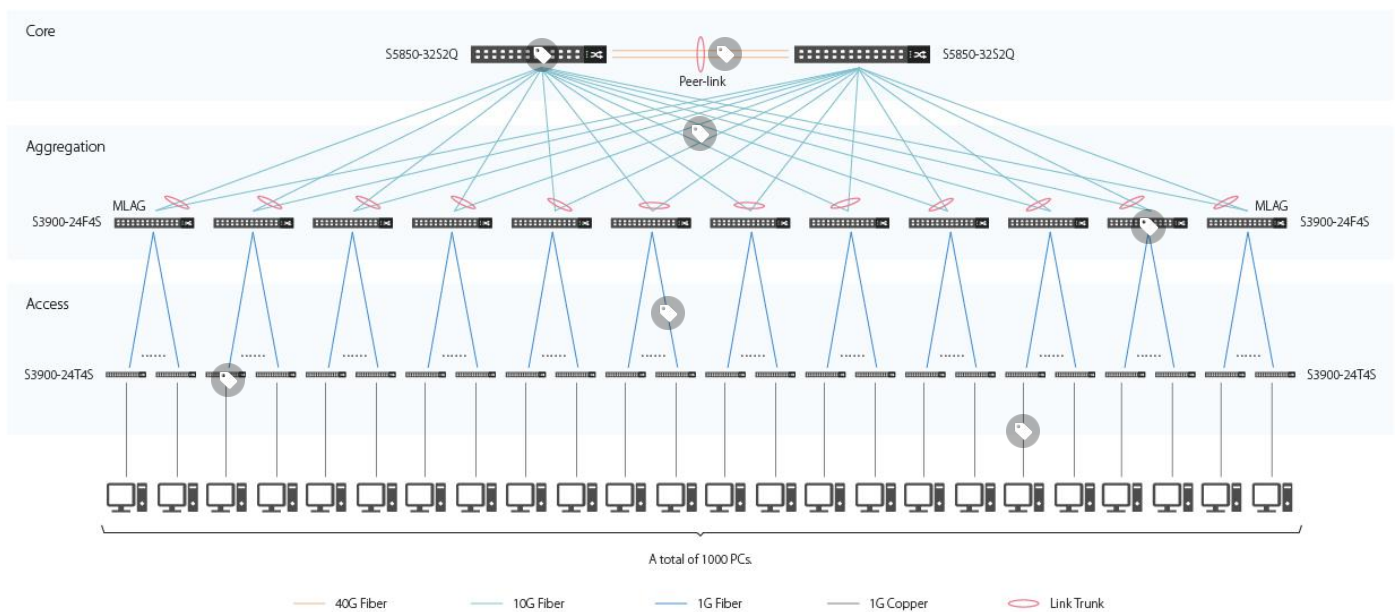
Background

The customer needs to provide networking at a large gaming event in the Middle East, with 800 preliminarily, then over 1000 gaming stations with PCs that need to be networked together. The access switches will be within a couple of meters of each of their computers, from there, it may require fiber to the aggregation switches, and then again fiber between those and the core, expecting over 100 meters.

Challenge

- The event needs to serve over 1000 gaming stations.
- The network needs to cover large areas and requires high bandwidth.
- Core switches in redundancy is also proposed.
- As for the management, one piece of software that allows to control all of the switches at once

Solution Topology



Solution Description

According to the customer's project requirements, our solution adopts three-layer network structure, access, aggregation and core layer to achieve a stable, scalable high-performance and efficient management & troubleshooting architecture. Unified management software can help customer better manage all the switches easily and fastly.

Connection

S5850-32S2Q: Featured 32x 1/10G SFP/SFP+ ports and 2x 1/10/40G SFP/SFP+/QSFP+, it can be connected to multiple aggregation switches via 10G fiber links. And 40G ports can be used to link these two core switches together to increase the bandwidth.

S3900-24F4S: As the aggregation switch, installed nearby access switch, it can meet 24x 1G SFP and 10G SFP+ uplink requirements. It highly secures business operations, improved sustainability, and a borderless network experience.

S3900-24T4S: It equips 24x 10/100/1000BASE-T Ethernet and 4x 1/10G SFP/SFP+ uplinks ports. Highlighted in fanless feature, it can be placed on desk of the event meeting room which requires quietness. There will be a lot of attendees walking around, and the cables should be as less as possible. Our S3900-24T4S switch can be a good choice for access switch in this scenario.

MLAG: Two S5850-32S2Q switches are logically a virtual switch via 40G peer-link, and then connect to S3900-24F4S switches through the MLAG to establish multi-chassis link aggregation connections to form a ring-free topology, together setting up a dual-active system. When a "Error-Down" occurs in one link, traffic can be quickly switched to another link.

Product List

ID	Description
29122	S5850-32S2Q 32-Port 10Gb SFP+ L3 Managed Ethernet Switch with 2 40Gb QSFP+ Uplinks
72945	S3900-24F4S 20-Port Gigabit SFP and 4 1Gb Combo L2+ Stackable Managed Ethernet Switch with 4 10Gb SFP+ Uplinks
72944	S3900-24T4S 24-Port 10/100/1000BASE-T Gigabit L2+ Stackable Managed Ethernet Switch with 4 10Gb SFP+ Uplinks, Fanless
11552	FS for Cisco SFP-10G-SR Compatible, 10GBASE-SR SFP+ 850nm 300m DOM Transceiver Module (Standard)
36157	Cisco QSFP-40G-SR4 Compatible 40GBASE-SR4 QSFP+ 850nm 150m MTP/MPO DOM Optical Transceiver Module
11774	Cisco GLC-SX-MM Compatible 1000BASE-SX SFP 850nm 550m DOM Transceiver Module
68017	1m (3ft) MTP Female 12 Fibers Type B Plenum (OFNP) OM4 (OM3) 50/125 Multimode Elite Trunk Cable, Magenta
41736	10m (33ft) LC UPC to LC UPC Duplex OM3 Multimode PVC (OFNR) 2.0mm Fiber Optic Patch Cable
70595	3ft (0.9m) Cat6 Snagless Unshielded (UTP) PVC CM Ethernet Network Patch Cable, Blue

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