HP 5900AF-48XG-4QSFP

HP 5920AF-24XG

HP 5900AF and 5920AF Enterprise Top-of-Rack Switches

Fact Sheet

Overview

The HP 5900AF series is a family of high-density 10GbE and ultra-low-latency top-of-rack (ToR) switches. HP 5900AF series is part of the FlexFabric solution module of the HP FlexNetwork architecture. The two new models, 5900AF and 5920AF switches, are ideally suited for deployment at the server access layer in large enterprise data centers. They are also designed for deployment at the core layer of data centers at medium-size enterprises. With the increase in virtualized applications and server-to-server traffic, customers now require ToR switch innovations that will meet their needs for higher-performance server connectivity, convergence of Ethernet and storage traffic, capability to handle virtual environments, and ultra-low latency all in a single device.

The HP 5900AF series ushers in the arrival of the world's first virtualized server access network. These 10GbE ToR switches are built on open industry standards and set new benchmarks for performance, low latency, reliability, scalability, and greener data centers with simpler network architecture.

The HP 5900AF series delivers high 10GbE port density and ultra-low latency (~1 microsecond). The 5900AF switches also feature HP Intelligent Resilient Framework (IRF) technology running on the modular and proven Comware operating system. The new 10GbE ToR switches also provide deep buffers for high-performance switching along with full Layer 2 and Layer 3, IPv4 and IPv6 dual-stack support for future-proofing network investments. The HP 5900AF ToR series offers 10GbE switches that are ready for virtualized data center and cloud computing environments.

Features and Benefits

- Industry-leading HP Intelligent Resilient Framework (IRF) technology radically simplifies the architecture of server access networks and enables massive scalability—this provides up to 300% higher scalability as compared to other ToR products in the market. In addition, the HP 5900AF series delivers on the FlexFabric promise of flatter, two-tier networks using IRF, which provide higher levels of performance while decreasing cost and complexity.

- Industry's only support for multiple use cases in a single ToR switch—up to 50 percent device reduction
  - Ultra-low-latency (~1 microsecond) IP switching with ALL features enabled
  - Server-edge storage + Ethernet convergence with DCB today and FCoE (future)
- Industry's only ToR switch in its class with IPv6 routing and IPv4/IPv6 dual-stack support for advanced future networks and future-proof investment
- TRILL- and VEPA-ready for virtualized networks and data center convergence
- High 10GbE/1 Gbps ToR port density with 40GbE uplinks for high performance and scalable networking with full L2/L3 features
- Lower OPEX and greener data centers with reversible air flow and advanced chassis power management

Advancing the Adoption of 10GbE

- **Flexible High 10GbE Port Density**: The HP 5900AF enables customers to scale their server-edge 10GbE ToR deployments to new heights with high-density 48x10GbE ports delivered in a 1RU design. The high server port density is backed by 4x40GbE uplinks to ensure availability of needed bandwidth for demanding applications. The HP 5920AF offers 24x10GbE ports with deep buffers for high-performance switching.
- **High-Performance 10GbE Switching**: The HP 5900AF cut-through and non-blocking architecture delivers industry-leading low latency (~1 microsecond) for HPC and very demanding enterprise applications. The switch delivers an

amazing 1.28 Tbps switching capacity and 952.32 MPPS packet forwarding rate. On the other hand, the HP 5920AF offers deep packet buffering (3.6 GB) for optimal switching performance. This 24x10GbE switch delivers 480 Gbps switching capacity and 357.12 MPPS throughput. Both models incorporate 9 MB of packet buffers.

Enabling Virtualized and Converged Data Centers

- **Intelligent Resilient Framework (IRF)**: The HP 5900AF fully supports HP IRF technology, which enables HP FlexFabric to deliver resilient, scalable, and secured data center networks for physical and virtualized environments. Up to four HP 5900AF switches can be grouped together in an IRF configuration that allows them to be configured and managed as a single switch with a single IP address; that simplifies ToR deployment and management, thus reducing deployment and operating expenses of data centers.
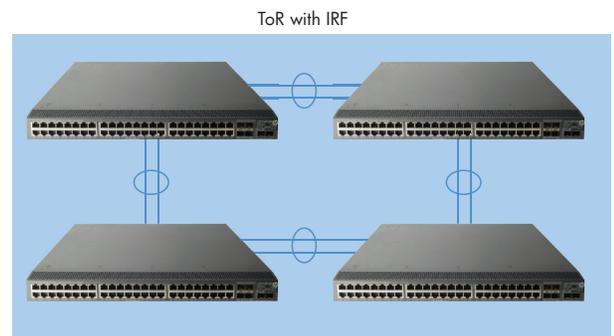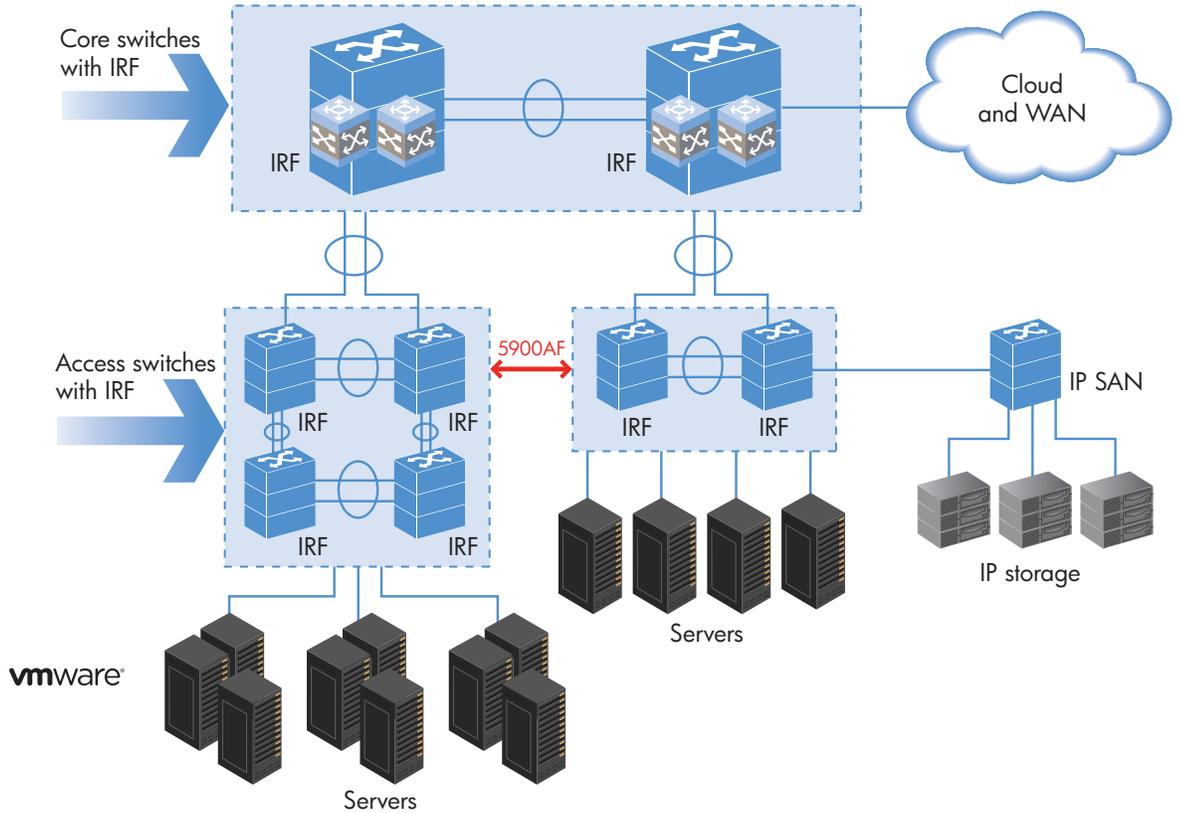

ToR with IRF

Table 1: HP 5900AF Platforms

Model	5900AF	5920AF
10GbE Ports	48	24
40GbE Uplink Ports	04	NA
Latency	~1 microsecond	
Switching Capacity	1.28 Tbps	480 Gbps
Packet Forwarding Rate	952.32 Mpps	357.12 Mpps
Integrated Packet Buffers	9 MB	9 MB
Deep Packet Buffers		3.6 GB
IRF Support	Yes—4 units	Yes—4 units
Data Center Bridging (DCB) Protocol Supported	Y	Y
FCoE Support	Y (future)	NA
Hot Swappable Power Supplies	1+1	1+1
Hot Swappable Fan Trays	2	2

Core switches with IRF

IRF   IRF

Cloud and WAN

Access switches with IRF

IRF   IRF   5900AF   IRF   IRF

IP SAN

IRF   IRF

IP storage

vmware®

Servers

Servers

- **Convergence Support**: The HP 5900AF can be deployed as a high-performance IP switch, taking advantage of industry-leading low latency. Thanks to its support for Data Center Bridging (DCB) protocol, it is ready to handle storage traffic that requires lossless links. In addition to that, the HP 5900AF will also be able to handle FCoE traffic (future feature) in converged server-edge environments. The HP 5900AF is also ready to support TRILL and VEPA technologies (future features).

Optimized for Enterprise Data Centers

- **Reversible Airflow**: The HP 5900AF switches are capable of supporting reversible airflow, front-to-back or back-to-front, making them optimized for data center hot/cold aisle deployment.
- **Redundant Fans and Power Supplies**: 1+1 redundant and hot pluggable power supplies and dual fan trays enhance the reliability and availability of these ToR switches. The HP 5900AF switches also provide wrong fan direction detection and warning.

- **Advanced Modular Operating System**: Modular design and multiple processes bring native high stability and independent process monitoring and restart. The OS also allows upgrading individual software modules for higher availability, and it supports enhanced serviceability functions.

Top-of-Rack Deployment Model

The HP 5900AF series ToR data center switches are deployed at the server access layer in large enterprises or at the core of the network in medium-size enterprises. The diagram above shows a typical ToR deployment of the HP 5900AF 10GbE family of switches.

Table 2: HP 5900AF Switch Series Available SKUs

J#	Product Name
HP 5900AF Available SKUs	
JG296A	HP 5920AF-24XG Switch
JG297A	HP 5920AF-24XG Back (power-side) to Front (port-side) Airflow Fan Tray
JG298A	HP 5920AF-24XG Front (port-side) to Back (power-side) Airflow Fan Tray
JC772A	HP 5900AF-48XG-4QSFP Switch
JG325A	HP X140 40G QSFP MPO SR4 Transceiver
JG326A	HP X241 40G QSFP QSFP 1m Direct Attach Copper Cable
JG327A	HP X241 40G QSFP QSFP 3m Direct Attach Copper Cable
JG328A	HP X241 40G QSFP QSFP 5m Direct Attach Copper Cable
JG329A	HP X242 40G QSFP to 4x10G SFP+ 1m Direct Attach Copper Splitter Cable
JG330A	HP X242 40G QSFP to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable
JG331A	HP X242 40G QSFP to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable

HP 5900AF-48XG-4QSFP front

HP 5900AF-48XG-4QSFP back

HP 5920AF-24XG front

HP 5920AF-24XG back

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