

# Data Sheet

## FUJITSU PSWITCH 2048

Powerful, cost-efficient switch for data center Ethernet connectivity

Data centers continue to evolve, creating a need for an infrastructure that can support growth in virtual machines, distributed applications, data, as well as the transition to public and private cloud environments without compromising performance. Today's networks need to support the flexible connectivity of any device from any place in a secure manner. They have to provide an automated quality of service management when assigning bandwidth to the various usage scenarios as this cannot be done fast enough on a manual basis.

Fujitsu has developed a suite of top-of-rack switches that support flexible and efficient scale-out server infrastructures, especially in combination with new modular servers. This approach results in several improvements, including infrastructure efficiency for cloud computing, end-to-end virtualization and consolidation. Close partnerships with network technology partners complement the portfolio for building complete IT infrastructures. A lot of new use cases are based on Ethernet networks, with high bandwidths and increasingly virtualized fabric architectures for building dynamic data centers. And it goes without saying that Fujitsu server and storage systems are fully compatible with our own products as well as products from our partners.

### PSWITCH 2048

The FUJITSU PSWITCH 2048 delivers innovative technology to enhance and simplify networks. It is a 1U low-latency, Layer 2/3, Ethernet switch and provides a rich set of advanced networking features, making the PSWITCH 2048 an ideal platform for traditional Top-of-Rack (ToR) switch deployments. With support for forty-eight 10GbE BASE-T (PSWITCH 2048T) or SFP+ ports (PSWITCH 2048P) as well as six 40GbE QSFP+ ports, these switch provide the efficiency and flexibility you need to support cloud computing, virtualization and consolidation. For organizations seeking automated provisioning capabilities to improve IT agility, the PSWITCH 2048 accelerate time to production through automatic discovery of network devices. This reduces the initial efforts, ongoing maintenance time and costs. The switch is designed for the next-generation data centers with advanced features such as Data Center Bridging (DCB), Edge Virtual Bridging (EVB) and VXLAN Tunnel End Point (VTEP) to support large-scale virtualization and software-defined Networking. In order to adapt to the individual situation as best as possible, the switch can be used in various switch modes. Beside the default Layer2 switching support it provides the possibility of the end host mode (EHM) to simplify the port settings for connecting to a network in operation. This functionality can be beneficial in blade transition projects.

Despite all these features, the switch offers a cost-effective solution because there are no additional license costs for the number of used ports. The PSWITCH 2048 is ideally suited for a variety of different solutions such as hyper-converged infrastructures, e.g. VMware VSAN, Storage Spaces Direct (S2D) scenarios or also as dedicated storage network.



# Features & Benefits

Main Features	Benefits
<p><b>Switch Management</b></p> <ul style="list-style-type: none"> <li>■ Command Line Interface (CLI)</li> <li>■ Simple Network Management Protocol (SNMP)</li> <li>■ Network Configuration Protocol (NETCONF)</li> <li>■ Open vSwitch Database (OVSDDB)</li> </ul> <p><b>Auto Discovery</b></p> <ul style="list-style-type: none"> <li>■ Software discovers and identifies the switch and automatically set up the switch with pre-defined parameters to the application.</li> </ul> <p><b>End Host Mode (EHM)</b></p> <ul style="list-style-type: none"> <li>■ End Host Mode is a mode to simplify the port settings for connecting to a network in operation.</li> </ul> <p><b>Data Center and Virtualization</b></p> <ul style="list-style-type: none"> <li>■ Data Center Bridging (DCB)</li> <li>■ FIP Snooping</li> <li>■ Edge Virtual Bridging (EVB)</li> <li>■ DCVFN gateway (VXLAN, VTEP, NVE)</li> </ul> <p><b>High-performance and Availability</b></p> <ul style="list-style-type: none"> <li>■ 48x 10GBASE-T and 6x QSFP+ Port</li> <li>■ 48x 10GBASE SFP+ and 6x QSFP+ Port</li> </ul>	<ul style="list-style-type: none"> <li>■ Various management interface for administrator as well as for the management software.</li> <li>■ Three management interfaces – console, management port, and inbound network interface. Remote management of the switch is available through these port or interface.</li> <li>■ Reduce the initial effort of introducing the switch into network.</li> <li>■ Establish a set of secured ports to be connected to the network without any considerations about STP, VLAN, load balancing, or other settings.</li> <li>■ Deliver key scalable features that meet the demands of today's virtualized and cloud multi-vendor environments.</li> <li>■ Manage network connection for virtual machines and physical server (heterogenous/mixed network environments).</li> <li>■ Enable the efficiency and flexibility you need to support cloud computing, virtualization, mobility, and consolidation.</li> </ul>

# Technical details

## PSWITCH 2048

<b>Connection type</b>	Ethernet ToR Switch 10/40 Gbit/s Ethernet Switch, Layer2 switching support / Layer3 Service support, End Host Mode (EHM)
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### Interfaces

<b>Down-link ports</b>	48 x 10 Gbit/s Eth (SFP+ / RJ45)
<b>Up-link ports</b>	6 x 40 Gbit/s Eth (QSFP+)
<b>Management ports</b>	1 x RJ45 Serial Port 1 x 10/100/1000Mbps LAN Port

Order code	Application	Type / mode	Connector / cable Length
S26361-F3989-E600	Ethernet 10 Gbit/s	SFP+ Twinax Cable / active	SFP+ / 2m or 5m
S26361-F3989-L102	Ethernet 10 Gbit/s	SFP+ Twinax Cable / active	SFP+ / 2m
S26361-F3989-L105	Ethernet 10 Gbit/s	SFP+ Twinax Cable / active	SFP+ / 5m
S26361-F3989-L110	Ethernet 10 Gbit/s	SFP+ Twinax Cable / active	SFP+ / 10m
S26361-F3873-E500	Ethernet 10 Gbit/s	SFP+ Twinax Cable / active	SFP+ / 3m or 5m
S26361-F3873-L501	Ethernet 10 Gbit/s	SFP+ Twinax Cable / active	SFP+ / 1m
S26361-F3873-L503	Ethernet 10 Gbit/s	SFP+ Twinax Cable / active	SFP+ / 3m
S26361-F3873-L505	Ethernet 10 Gbit/s	SFP+ Twinax Cable / active	SFP+ / 5m
S26361-F3986-E400	Ethernet 40 Gbit/s	QSFP+ Twinax Cable / passive	QSFP+ / 2m or 5m
S26361-F3986-L402	Ethernet 40 Gbit/s	QSFP+ Twinax Cable / passive	QSFP+ / 2m
S26361-F3986-L405	Ethernet 40 Gbit/s	QSFP+ Twinax Cable / passive	QSFP+ / 5m

### Technical specifications

<b>Layer 2 feature</b>	Virtual LAN (IEEE802.1Q) Link Aggregation (LAG) Spanning Tree Protocol Loop detection Link Down Relay Remote Switch Port Analyzer (RSPAN) Unidirection Link Detection (UDLD) End Host Mode (EHM)
<b>Layer 3 feature</b>	IPv4 - ARP / ICMP / IRDP IPv6 - NDP Routing Routing Information Protocol (RIP / RIPng) Open Shortest Path First (OSPF) Boarder Gateway Protocol 4 (BGP4) Virtual Router Redundancy Protocol (VRRP) Equal Cost Multi-Path (ECMP) UDP Relay / IP Helper DNS Client and DNS Relay Link-Local Multicast Name Resolution (LLMNR) Virtual Routing and Forwarding (VRF)
<b>Link aggregation</b>	Static LAG IEEE 802.1ax-2008 standard (LACP) support up to 48 ports in a LAG virtual port channels (VPCs)
<b>Spanning tree</b>	Spanning Tree Protocol (STP) Rapid Spanning Tree Protocol (RSTP) Multiple Spanning Tree Protocol (MSTP)
<b>DCB features</b>	Priority Flow Control (PFC) Enhanced Transmission Selection (ETS) Congestion Notification (CN) Data Center Bridging Extensions (DCBX)

**Technical specifications**

<b>Network protocol and standards compatibility</b>	IEEE 802.1ab LLDP IEEE 802.1p Class of Service IEEE 802.1d Spanning Tree Protocol IEEE 802.1Qau Congestion Notification IEEE 802.1Qaz Enhanced Transmission Selection (ETS) IEEE 802.1Qbb Priority Flow Control (PFC) IEEE 802.1q VLAN IEEE 802.1s Multiple Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1x Port Based Network Access Control IEEE 802.1ax-2008 Link Aggregation IEEE 802.3x Flow Control IEEE DCBX Data Center Bridging Exchange protocol proposal for 802.1 Qaz IPv4, IPv6 and mixed IPv4/IPv6 network protocols
<b>Performance</b>	720Gbps switching bandwidth (1440Gbps duplex) Automatic address learning function to build the packet-forwarding information table. The table contains up to 96K MAC addresses 12 MB of packet buffer memory Support Jumbo Frame up to 9Kbyte Store-Forward mode - Cut-through is available to minimize the latency
<b>IP multicast features</b>	IGMP Snooping MLD Snooping Snooping Querier Multicast Static Routes (MRoutes) Internet Group Management Protocol (IGMP) v2/v3 Multicast Listener Discovery (MLD) v1/v2 Distance Vector Multicast Routing Protocol (DVMRP) Protocol Independent Multicast - Dense Mode (PIM-DM) Protocol Independent Multicast - Sparse Mode (PIM-SM)
<b>VLAN</b>	Port Based VLAN MAC Based VLAN Protocol Based VLAN IP Subnet Based VLAN Private VLAN
<b>Management</b>	Telnet/SSH Network Configuration Protocol (NETCONF) Simple Network Management Protocol (SNMP) Remote Monitoring (RMON) Open vSwitch Database (OVSDB) management protocol

**Dimensions / Weight**

<b>Dimensions (W x D x H)</b>	440 x 460 x 44 mm
<b>Weight</b>	8.4 kg

**Environmental compliance**

<b>Operating ambient temperature</b>	0 - 40 °C
<b>Operating relative humidity</b>	10 - 90 % (relative humidity)

**Product**

<b>Europe</b>	CE
<b>USA/Canada</b>	FCC Class A UL/CSA
<b>Global</b>	CB RoHS
<b>Japan</b>	VCCI JATE
<b>Russia</b>	EAC
<b>South Korea</b>	KC
<b>China</b>	CCC
<b>Australia/New Zealand</b>	AS / NZS CISPR 22

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<b>Taiwan</b>	BSMI
<b>Saudi Arabia</b>	SASO
<b>Compliance link</b>	<a href="https://sp.ts.fujitsu.com/sites/certificates">https://sp.ts.fujitsu.com/sites/certificates</a>

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# More information

## Fujitsu products, solutions & services

In addition to FUJITSU PSWITCH 2048, Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

### Fujitsu Portfolio

Built on industry standards, Fujitsu offers a full portfolio of IT hardware and software products, services, solutions and cloud offering, ranging from clients to datacenter solutions and includes the broad stack of Business Solutions, as well as the full stack of Cloud offerings. This allows customers to select from alternative sourcing and delivery models to increase their business agility and to improve their IT operation's reliability.

### Computing Products

[www.fujitsu.com/global/products/computing/](http://www.fujitsu.com/global/products/computing/)

### Software

[www.fujitsu.com/software/](http://www.fujitsu.com/software/)

## More information

Learn more about Fujitsu PSWITCH 2048, please contact your Fujitsu sales representative or Fujitsu Business partner, or visit our website.  
[www.fujitsu.com/fts/products/computing/servers/primergy/racks/ethernet-switches/](http://www.fujitsu.com/fts/products/computing/servers/primergy/racks/ethernet-switches/)

## Fujitsu green policy innovation

Fujitsu Green Policy Innovation is our worldwide project for reducing burdens on the environment. Using our global know-how, we aim to contribute to the creation of a sustainable environment for future generations through IT. Please find further information at <http://www.fujitsu.com/global/about/environment>



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2020-04-25 INT-EN

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