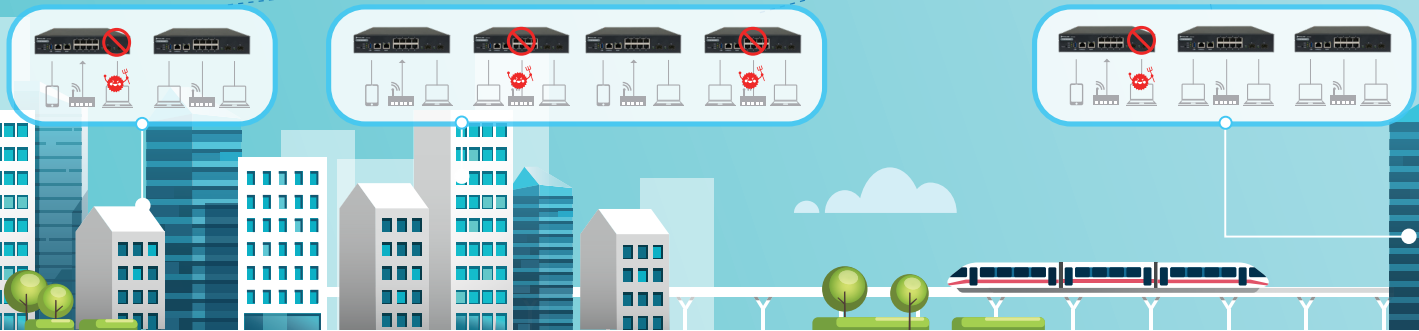PIOLINK

PIOLINK
Cloud Managed Networking

- **TiController** Cloud-based management
- **TiFRONT** Cloud Managed Security Switch
- **TiFRONT** Backbone Switch

TiFRONT
Cloud Managed Networking

Integrated operation for wired/wireless networks, connected terminals, and internal security

SIMPLE
- Simple installation
- Operation and maintenance

SMART
- Data informatization
- Visibility and analysis

SECURE
- Internal network security
- IP & asset management

SERVICE
- Cloud Service type
- On-premise build-up

SCALE
- Multi-tenant
- Unlimited expansion

SPEED
- Easy equipment replacement
- Remote diagnosis

As the access network user and traffic has exponential growth, the security threats also get bigger due to remote working, using personal terminals for work and the access to various applications. However, unlike PC or server security, there is no adequate security solution for access gateway. In addition to that, the awareness of internal network management is low.

TiFRONT is designed to improve the access network with improper management and security blind spot by adding security functions to L2/L3 Switch and Access Point (AP). TiFRONT is designed for the centralized management device installation, troubleshooting, data analysis and security operation on one browser. It is also able to monitor third-party network equipment that has been established.

TiFRONT, Cloud managed networking solution, has advanced into new markets in Korea and Japan. Our key clients are the companies or public institutions managing branches/offices with limited IT resources and the postsecondary education. It offers solutions for on-premise Cloud as well as public and private Cloud. IT managed service firms for SOHO/SMB companies are highly satisfied with this service. This service is highly rated as it allows the easy management of multiple customer sites on one browser and automatically issues various security reports.
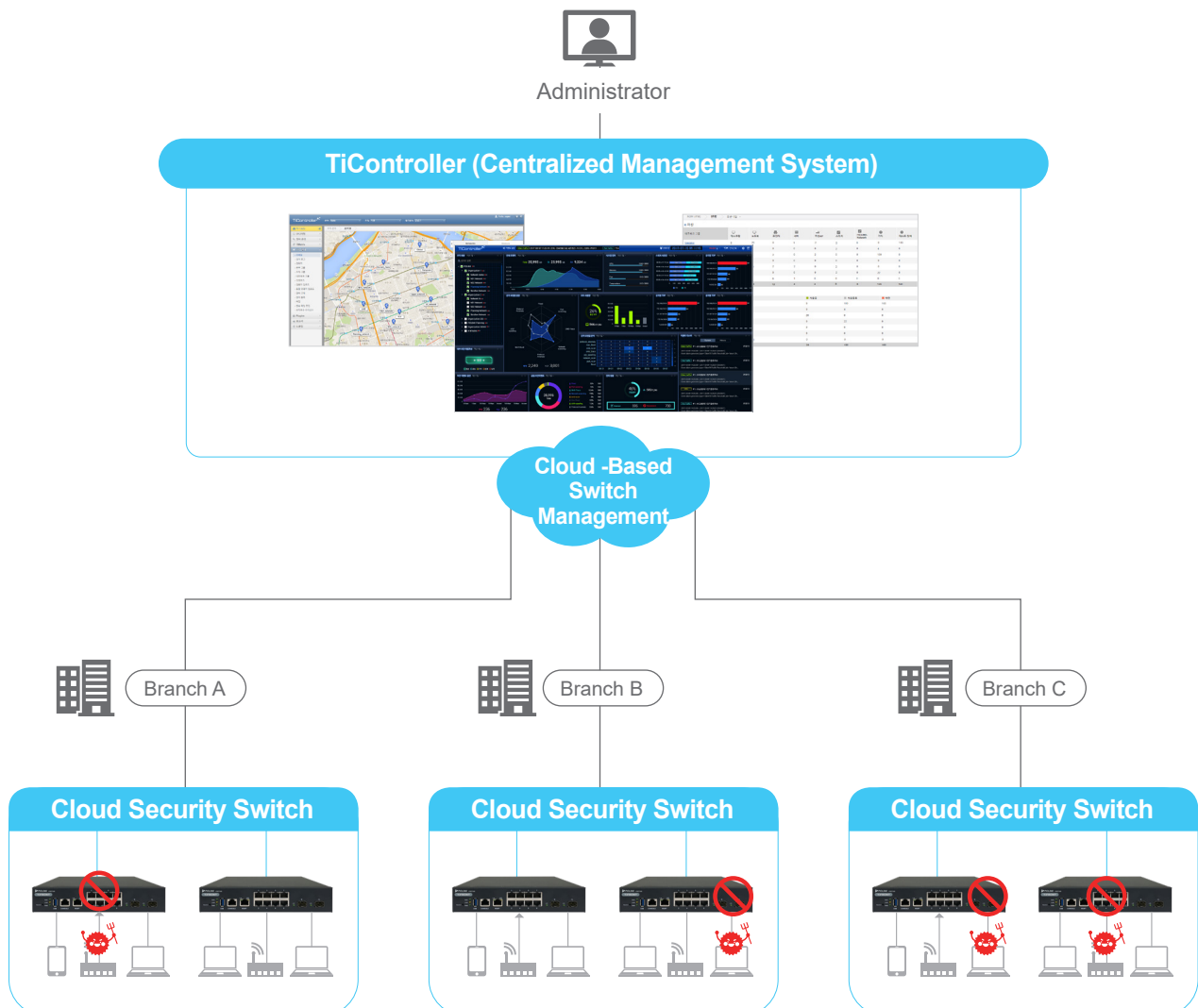
TiController
Cloud-based management

TiController, the cloud-based dedicated management system, provides 'easy management' which is the key feature of TiFRONT switch operations. It enables centralized management of distributed devices through the cloud, offering a comprehensive view of connected user devices, traffic status and security threats. With user-specific access control(Multitenant), it ensures that only designated networks can be managed.

Simple Centralized Management

☑ Centralized management for distributed networks such as headquarters and branches

☑ Suitable for BYOD environments with various personal IT devices connected

☑ Simplified management with just a few clicks on the GUI screen

☑ Reduce costs by integrating NMS, QoS, ESM, and NAC features into a unified management system

Administrator

TiController (Centralized Management System)

Cloud -Based Switch Management

Branch A   Branch B   Branch C

Cloud Security Switch   **Cloud Security Switch**   **Cloud Security Switch**

Monitoring & Visibility

- ☑ Manage switch locations and connectivity through maps and topology map
- ☑ Check high priorities on switch and client usage
- ☑ Top security attack types, attackers, and targets
- ☑ Traffic analysis and management by switch, port, and client
- ☑ IP address and asset management
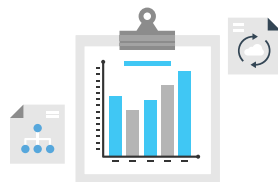- ☑ Issuing network and security reports automatically

IP address management

Provide stable network services by understanding IP address usage and blocking unauthorized and excessive traffic

Traffic management

Real-time traffic analysis by time and user for devices currently in use
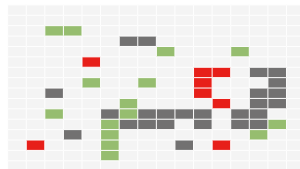
Ensure service quality

Adjust a priority or traffic bandwidth for each user or service (QoS)

IT asset management

Identify device types and quantities per network. Classify and match OUI and MAC addresses by asset types
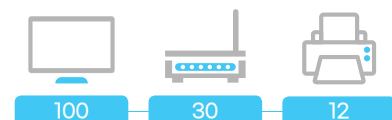
Server requirements

	TiController 100	TiController 500	TiController 1000	TiController 2000
Number of switch	Max. 100 units	Max. 500 units	Max. 1100 units	Max. 2000 units
Form Factor	1U Rack	1U Rack	1U Rack	1U Rack
CPU	Xeon 3.4GHZ (4 core)	Xeon 3.4GHZ (4 core)	Xeon 2.8GHZ (8 core)x2	Xeon 2.4GHZ (16 core)x2
Memory	16 GB	64 GB	128 GB	256 GB
HDD	1TB	2TB x4, RAID5	1.2TB x8, RAID5	8TB x4, RAID10
Power	Single	Dual	Dual	Dual

TiController Features

Category	Subcategory	Details
Easy Install	Zero Touch Installation	• Support Static, DHCP and wireless environments
	Plugins	• Config Install & OS updates via USB
	Web UI for switch	• Switch Configuration & OS update
		• Uplink & TiController Setting
		• Switch port configuration
		• Live Tools (Ping, Traceroute, etc.)
Easy Management	Multi-Tenant	• Role-based management
	Device	• Equipment configuration management, port status, traffic management
	Traffic	• Traffic usage statistics at network, port, and host levels
	Total Searching	• Total searching for switches, clients, alarm history, event logs, and security logs
	Map Integration	• Display network information and switch locations on maps
	Firmware	• Batch/scheduled firmware updates
	Configuration Backup	• Automatic backup of configuration information
	Alarm Settings	• Settings for switch status, Self-loop, port status, traffic usage, and security events alarm
	Remote Troubleshooting	• Live tools (Ping, Traceroute, Cable test, Reboot Switch, etc.), • Technical assistance called Technical-assist.
	User Account	• Change a password for TiFRONT user account
	Third-Party H/C	• Connect to the Third-party H/C, except for TiFRONT
	DDM	• SFP DDM(Digital diagnostic monitoring)
Virtual Device Setup		• Pre-configuring virtual devices in management system without a physical device
Virtual Stacking		• Management as a single switch without physical connections
		• Batching configuration for switch information in the same network
Simple device replacement		• One-step device replacement (Apply existing settings without backing up configuration data)
Device Configuration	VLAN	• Management VLAN, create VLAN, VLAN name, deginated Subnet, Port allocation, Trunking, VLAN & port settings template feature, Voice VLAN settings template feature
	RPVSTP	• Disable/enable, Root Bridge, Topology view, VLAN-specific enable, VLAN-specific Priority, and STP template
	Port	• Jumbo-frame, Flow control, LLDP, Link speed, Storm Control, Port Schedule, NetBIOS, and EtherType
	PoE	• Power mode, Port priority, and Power threshold settings
	QoS	• Add/remove on QoS rules, Port filtering, TCP/UDP filtering, and Class MAP settings

Category	Subcategory	Details
Device Configuration	ACL	• System and network access control lists
	IGMP Snooping	• Join/Leave, Multicast group
	L3 Configuration	• Static routing, OSPF
	DHCP	• DHCP Server/Relay
	Self-loop	• Enable/Disable self-loop
	Service and Device Control	• Support SSH, Telnet, SNMP, HTTP, Console, MGMT, USB, Reset Button, • Remote Reset, and Perpetual PoE
	Script Management	• Script settings and script management template
Security	TiMatrix Security	• Security level (High/Middle/Low)
		• Security level threshold settings by network group
		• Flood/Network Scanning/Port Scanning
		• Protocol Anomaly, ARP Spoofing/MAC Flood settings
		• Ransomware spread prevention (SMB Trace/Scan)
		• Profile settings
		• Security configuration template
	vCAT Security (Virtual Cyber Attack Trap)	• Detection and blocking of Worm Spreading attacks
		• Detection and blocking of new attacks through profile upgrades
		• Automatic blocking and reporting of lateral movement access by infected internal devices
		• Provide data necessary for forensics
Host Management (IP address Management)		• Collect various host information, setting policies, IP Map, Web-alert, terminal management, register terminal types, activation settings by NDM feature, switch IP template settings
IPT Line Numbering		• IPT line numbering management
Topology		• Topology Map
Dashboard		• Component-based user dashboard (organizational status, security events, equipment status, port usage, occurrence status by attack type, analysis by attack type, TOP information by attack type, TOP information by attacker IP address, TOP information by equipment traffic, traffic trend, and security event occurrence trend components)
		• Alert-based dashboard (switch connectivity status, switch status, network alerts, port, and client alerts)
		• Unified log analysis dashboard (alerts, event logs, and security events)
Technical Support Assistant		• Automatic information collection required for root cause analysis
Log Management		• Security logs, event logs, and audit logs
Reports		• Custom reports, scheduling
Authentication	CC Certification	• Integrated Security Management (EAL2)
	GS Certification	• TiController V1.1 (Grade 1)

TiFRONT Cloud Managed Security Switch

Security features have been added to the L2/L3 switch closest to the user.
It detects and blocks harmful traffic such as worms, bots, and malware spreading within the internal network.
Through the the switch's security functions and the integrated management environment of the TiController, it is possible to remotely analyze and respond to the user's network.
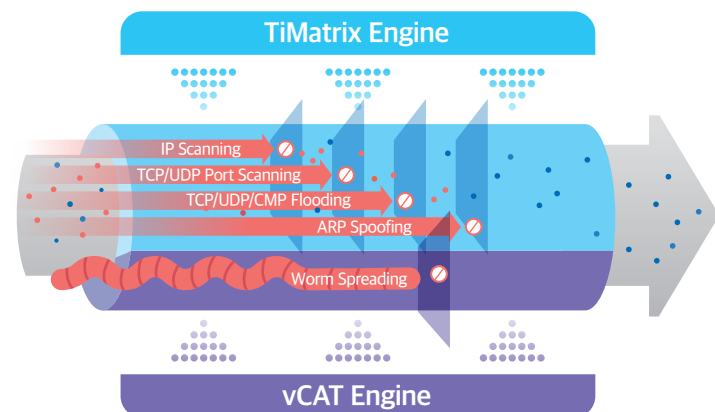This helps reduce the need for on-site visits or inconvenience for IT personnel caused by network issues.

Internal network security

☑ No need for installing agent and updates on each user devices
☑ Applied exclusive security algorithm based on Frequency Matrix
☑ Automatically detect and block harmful traffic selectively
☑ Ensure a business continuity while operating security

High-performance security engine

As a core security engine, TiMatrix&vCAT engine is embedded in the TiFRONT security switch and detects and blocks malicious traffic selectively.

TiMatrix Engine

- IP Scanning
- TCP/UDP Port Scanning
- TCP/UDP/CMP Flooding
- ARP Spoofing
- Worm Spreading

vCAT Engine

- Respond Zero-day threats without signatures
- Support full wired speed while running security
- Detect and block new attacks through profile upgrades
- Automatically block and report when infected internal devices access through lateral movement
- Provide data necessary for forensics

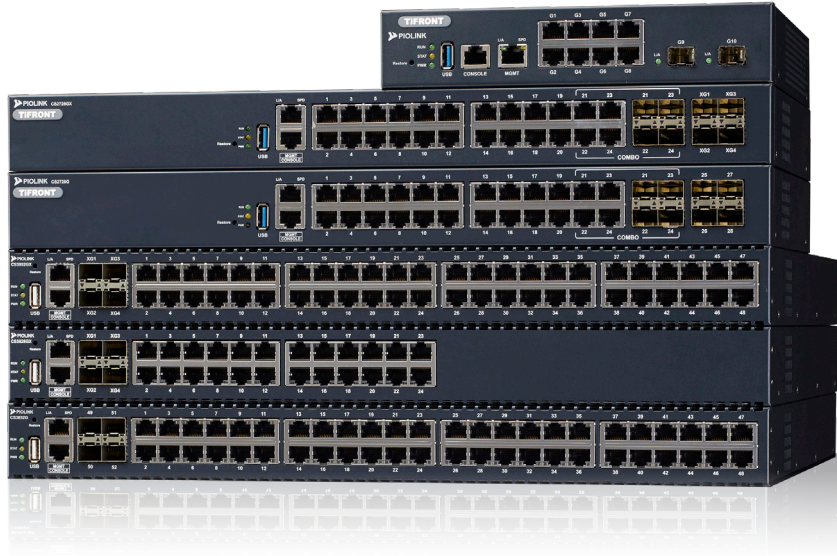## Block access to malicious domains

To prevent malware infections through unsafe websites, register malicious domains and block access to them
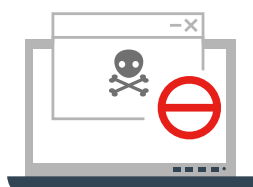
Port scheduling

Block network access during specific times such as after work hours or on weekends preventing security issues proactively

Remote trouble-shooting

- ☑ Mobile, email, and dashboard alerts
- ☑ Checking network connectivity on the topology
- ☑ Remote troubleshooting via live tools
- ☑ Dispatching firmware updates on switch groups
- ☑ Reduced engineer visits.

Prevent IP conflicts

Prevent service disruptions due to unauthorized IP address through binding IP/MAC address

IP 1.1.1.1.   IP 1.1.1.1.

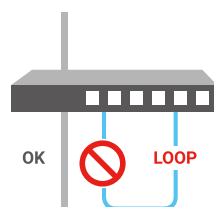## Block unauthorized routers

Prevent network troubles by blocking IP addresses assigned by unauthorized routers, not from the DHCP server

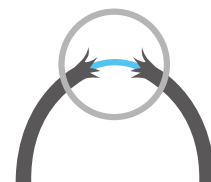## Loop prevention

Automatically block loops caused by incorrect cable connections and release after resolving the loop

OK   LOOP

Detect aging cables

Self-detect a network speed degradation and errors caused by cable corrosion, breakage, and etc

TiFRONT Cloud Security Switch

CS2300 series

TiFRONT	CS2310GX	CS2310GXP	CS2328GX	CS2328GXP	CS2328GXPE	CS2354GX	CS2354GXP	CS2328FX
Switching Fabric	56 Gbps	56 Gbps	128 Gbps	128 Gbps	128 Gbps	216 Gbps	216 Gbps	128 Gbps
Forwarding Rate	83.33 Mpps	83.33 Mpps	190.47 Mpps	190.47Mpps	190.47 Mpps	321.42 Mpps	321.42 Mpps	190.47 Mpps
Memory (RAM)	512 MB	512 MB	512 MB	512 MB	512 MB	512 MB	512 MB	512 MB
Flash Memory	64 MB	64 MB	64 MB	64 MB	64 MB	64 MB	64 MB	64 MB
Ethernet Ports (total)	10	10	28	28	28	54	54	28
10/100/1000BASE-T	8	8	24	24	24	48	48	-
1000BASE-X SFP	-	-	-	-	-	-	-	24
10G SFP+	2	2	4	4	4	6	6	4
Power Input	AC100 ~ 240V (50/60Hz)							
PoE	-	802.3af, 802.3at	-	802.3af, 802.3at	802.3af, 802.3at	-	802.3af, 802.3at	-
Dual Power	-	-	-	-	supported	-	supported	supported

CS2600 series

TiFRONT	CS2628GX	CS2628GXPE
Switching Fabric	128 Gbps	128 Gbps
Forwarding Rate	190.47 Mpps	190.47 Mpps
Memory (RAM)	512 MB	512 MB
Flash Memory	256 MB	512 MB
Ethernet Ports (total)	28	28
10/100/1000BASE-T	24	24
10G SFP+	4	4
Power Input	AC100 ~ 240V (50/60Hz)	
PoE	-	802.3af, 802.3at
Dual Power	-	-

CS2700 series

TiFRONT	CS2710G	CS2710GP	CS2728G	CS2728GP	CS2728GX	CS2728GXP
Switching Fabric	20 Gbps	20 Gbps	56 Gbps	56 Gbps	128 Gbps	128 Gbps
Forwarding Rate	29.76 Mpps	29.76 Mpps	83.33 Mpps	83.33 Mpps	190.47 Mpps	190.47 Mpps
Memory (RAM)	512 MB	512 MB	512 MB	512 MB	512 MB	512 MB
Flash Memory	512 MB	512 MB	512 MB	320 MB	512 MB	320 MB
Ethernet Ports (total)	10	10	28	28	28	28
10/100/1000BASE-T	8	8	24	24	24	24
1000BASE-X SFP	2 (1G)	2 (1G)	8 (4 dual media SFP)	8 (4 dual media SFP)	4 (dual media SFP)	4 (dual media SFP)
10G SFP+					4	4
Power Input	AC100 ~ 240V (50/60Hz)					
PoE	-	802.3af, 802.3at	-	802.3af, 802.3at, 802.3bt	-	802.3af, 802.3at, 802.3bt
Dual Power	-	-	supported	supported	supported	supported

CS3800 series

TiFRONT	CS3828GX	CS3852GX	CS3852GXP
Switching Fabric	128 Gbps	176 Gbps	176 Gbps
Forwarding Rate	190.47 Mpps	261.90 Mpps	261.90 Mpps
Memory (RAM)	1 GB	1 GB	1 GB
Flash Memory	256 MB	256 MB	256 MB
Ethernet Ports (total)	28	52	52
10/100/1000BASE-T	24	48	48
10G SFP+	4	4	4
Power Input	AC100 ~ 240V (50/60Hz)		
PoE	-	-	802.3af, 802.3at
Dual Power	supported	supported	supported

TiFRONT
Cloud Switch

These series as below do not support TiMatrix security.

CS2200 series

TiFRONT	CS2228GX	CS2228GXP	CS2254GX	CS2254GXP
Switching Fabric	128 Gbps	128 Gbps	216 Gbps	216 Gbps
Forwarding Rate	190.47 Mpps	190.47 Mpps	321.42 Mpps	321.42 Mpps
Memory (RAM)	512 MB	512 MB	512 MB	512 MB
Flash Memory	64 MB	64 MB	64 MB	64 MB
Ethernet Ports (total)	28	28	54	54
10/100/1000BASE-T	24	24	48	48
10G SFP+	4	4	6	6
Power Input	AC100 ~ 240V (50/60Hz)			
PoE	-	802.3af, 802.3at	-	802.3af, 802.3at
Dual Power	-	-	-	supported

Switch Features

Layer 2	
Port Management	• Autonego/Speed/Duplex
	• Flow control
	• Autonego-status
VLAN	• Port-based VLAN
	• Protocol/MAC/Subnet VLAN
	• Voice VLAN
	• 802.1Q
	• Hybrid VLAN
	• Private VLAN
	• Ingress/Egress tagging
	• Max VLAN (4K)
	• 802.1ad VLAN stacking (QinQ)
Spanning Tree	• STP (802.1D)
	• RSTP (802.1W)
	• MSTP (802.1S)
	• PvST+
	• PvRST+
MAC learning	• MAC address aging
	• MAC filtering
	• Duplicate MAC address learning prevention
	• Reserve MAC learning prevention
	• Static entry support
	• Independent VLAN learning
	• Max. MAC entry (16K)
Port Mirroring	• Port Mirroring
	• RSPAN
Link Aggregation	• LACP
	• Link trunking
	• LACP load balancing
	• Trunk groups (8)
	• Members per group (8)
	• Static Trunk load balancing
IGMP snooping	• Join/Leave, Multicast group (1K)
	• v1/v2/v3
	• Multicast-filter mode (flood-all/unknown/none)
QoS	• L2, L3, L4 header based classification
	• 8 CoS Queues per port
	• Diffserv
	• 802.1P Priority
	• CoS, DSCP, IP Precedence
	• Priority Marking/Remarking
	• Rate Limit/Shaping
	• Service-queue schedule (DRR)
	• Action (tos-to-priority, priority-to-tos)
	• DMAC, SMAC
ACL	• L2/L3/L4 based filtering
	• VLAN ACL
	• ACL filter naming
	• Time-Based ACL
	• SMAC, DMAC (Deny/Allow)
PoE	• IEEE 802.3af/at
	• MAX output power per port: 15.4W(802.3af), 30W(802.3at)
	• Enable/disable for each port
	• Priority setting of power supply for each port
	• Power scheduling for each PoE port
	• PoE operation status monitoring
	• PoE Auto Power-up,
	• Perpetual PoE (certain models)
Redundancy	• ERPS (ethernet ring protection switching)
Jumbo Frame	• Supported

IPv4/IPv6	
IPv4 Routing	• Static Routing, VRRP, ECMP, RIPv1/v2, OSPFv2, BGP4
IPv6 Routing	• Static Routing
	• RIPng
	• OSPFv3
Multicast Routing	• PIM-SM/SSM

Security	
Flood	• TCP syn flooding, TCP ack flooding, UDP flooding, ICMP flooding, IP spoofing, ARP flooding
Port Scan	• TCP syn scan, TCP ack scan, UDP scan, Stealth scan
Network Scan	• TCP network scan, UDP network scan, ICMP network scan, Non-echo ICMP network scan, ARP network scan
Protocol Anomaly	• Land attack, Invalid TCP flags, ICMP fragments, Smurf attack, TCP fragments
Advance Security	• SMB-trace, SMB-scan, MAC flooding, ARP Spoofing, IP-Screen
Profile	• Filter-profile
	• Flood-profile
	• Networkscan-profile
IPv6 Security	• Host scan, Neighbor spoofing, DAD DoS
Port Protection	• Storm control, Assigns maximum MAC
Accounting	• Records Login/Logout
	• Command-fulfillment record
Others	• IP Source Guard
	• Dynamic ARP Inspection
	• Embedded RADIUS
	• NAT Detection/OS Detection
	• SMB/DCHP/NetBIOS filtering
	• Self-loop detect/block
	• EtherType filtering
	• System Access
	• Web Alert

Management	
SNMP	• SNMP v1/v2c/v3
	• Public MIB (System, Interface, IP address, UCD, Router (RFC-1213), Protocol (TCP, UDP, SNMP, ICMP), RFC1573 Private Interface MIB)
	• Private MIB (Learning MAC table, security configuration)
	• SNMP Trap (Authentication, Port Link up/down, Security)
CLI Interface	• Telnet, SSH, Console
EMS Interface	• SNMP, Syslog, SSH
Authentication	• RADIUS, TACACS+
	• 802.1X, MAC auth, Web auth, Multi-step auth, Fall-back auth
User Management	• Login with password, Session timeout configuration, Multi user, Authority for each user, Multi-configure
Configuration and OS Management	• OS update via TFTP/FTP
Logging	• Syslog server, Monitoring, Log threshold management, Log backup, System/Security log
Monitoring	• Port statistics, CPU/Memory usage, Fan, Watchdog, Temperature sensor
Others	• UDLD
	• Device Control
	• DHCP Snooping
	• DHCP Server/Relay
	• LLDP, LLDP-MED
	• Remote reset

TiFRONT Cloud Switch

These series as below do not support TiMatrix security.

CS3800E/Q series

TiFRONT	CS3832GXE	CS3852GXE	CS3826XQ	CS3856XQ
Switching Fabric	136 Gbps	176 Gbps	760 Gbps	2.56 Tbps
Forwarding Rate	202.38 Mpps	261.90 Mpps	1130.95 Mpps	2666.66 Mpps
Memory (RAM)	1 GB	1 GB	1 GB	4 GB
Flash Memory	512 MB	512 MB	1 GB	8 GB
Ethernet Ports (total)	32	52	26	56
10/100/1000BASE-T	28	48	-	-
10G SFP+	4 (dual media SFP)	4	20	48
10/25G SFP28	-	-	4	-
40/100G QSFP+	-	-	2 (40G)	8
Power Input	AC100 ~ 240V (50/60Hz)			
PoE	-	-	-	-
Dual Power	supported	supported	supported	supported

CS3800E/Q series features

VLAN	• 4K 802.1Q VLAN, Default VLAN, Port-based VLAN, MAC-based VLAN, Protocol based VLAN, Voice VLAN, GVRP, Super VLAN, Private VLAN
STP	• STP(IEEE802.1D), RSTP(IEEE802.1w), MSTP(IEEE802.1s), PVST, Port Fast, BPDU guard, BPDU filter, TC guard, TC filter, Root guard
QinQ	• Basic QinQ, Selective QinQ(Flexible QinQ)
Link aggregation	• IEEE802.3ad, LACP
Mirroring	• Many-to-one mirroring, One-to-many mirroring, Flow-based mirroring, Over devices mirroring, VLAN-based mirroring, VLAN-filtering mirroring, SPAN, RSPAN
DHCP	• DHCP server/relay/client, DHCPv6 server/relay/client, DHCP option 43/82/138
L2 multicast	• IGMP v1/v2/v3 snooping, IGMP filter, IGMP fast leave, IGMP querier, IGMP security control, IGMP profile, MLD v1/v2 snooping, MLD filter, MLD fast leave, MLD source check
IP routing	• IPv4 static routing, RIPv1/v2, OSPFv2, BGP4, MBGP, IS-IS, PBR, VRF, ECMP, WCMP, Routing policies
Multicast routing	• IGMPv1/v2/v3, MLDv1/v2, PIM-DM, PIM-SM, PIM-SSM, PIM-DMv6, PIM-SMv6, MSDP, MCE, IGMP proxy, MLD proxy
ACL	• Standard IP ACL, Extended IP ACL, MAC-extended ACL, Time-based ACL, Expert ACL, ACL80, IPv6 ACL, SVI router ACL, ACL logging, ACL counter, ACL remark, ACL redirection, Security channel, Protected port, Port security
QoS	• Classification based on IEEE802.1p/DSCP/TOS, Rate-limit on ingress/egress traffic on interface, SP, WRR, DRR, WFQ, SP+WFQ, SP+WRR, SP+DRR
802.1X	• port base, mac base, Dynamic VLAN delivery (based on ports), MAB
Security	• ARP security, CPP(CPU Protection Policy), NFPP(Network Foundation Protection Policy), IP source guard v4/v6, DHCP snooping, DHCPv6 snooping, DHCP snooping on option 82, Local, RADIUS, RADIUS v6, TACACS+
Management	• Ping(v4/v6), Traceroute(v4/v6), sFlow, SNMPv1/v2c/v3, HTTP, HTTPS, RMON(1,2,3,9), CWMP(TR069), Syslog, MIB, TiController integrated management (Monitor)
Reliability	• DLDP, LLDP, RLDP, VRRP, OS dualization (on some models)
VSU	• Up to 2~8 stack members
SDN	• OpenFlow 1.3

TiFRONT Backbone Switch

The TiFRONT backbone switch is a high-performance terabit switch that processes high-volume traffic stably. With terabit switching capacity, TiFRONT BS9800 series reliably handles the surging core network traffic in data centers, campus and businesses ensuring business continuity with high failover resilience.

Rich L3 routing and virtualization(VSU) capabilities

Up to 12.8 Tbps switch capacity and 9,047 Mpps packet processing

Protect your system from various packet attacks (NFPP and security features)

CPP feature for preventing overload and malfunction

Integrated management on TiController management system

Standard rack mountable (10 U in height, 600 mm in depth)

Virtual Switch Unit (VSU)

TiFRONT BS9800 series is specifically designed for the next generation of integrated networks.
VSU(Virtual Switch Unit) virtualization technology supports future ethernet requirements and greatly simplifies the network architecture to improve operational efficiency.

BS9805

BS9808

BS9810

TiFRONT backbone switch features

Improve operational efficiency

Virtual Switch Unit(VSU) technology simplifies two devices into one logical device to reduce administrative load and link recovery feature ensures uninterrupted transmission

Carrier-grade high availability

Support module redundancy and hot-swap for key components such as control engines, power supply, fans, etc.
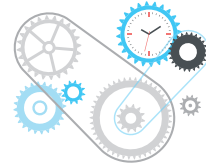
Non-blocking switching

Independent switching fabric and control module configuration for high reliability and greater traffic transmission efficiency
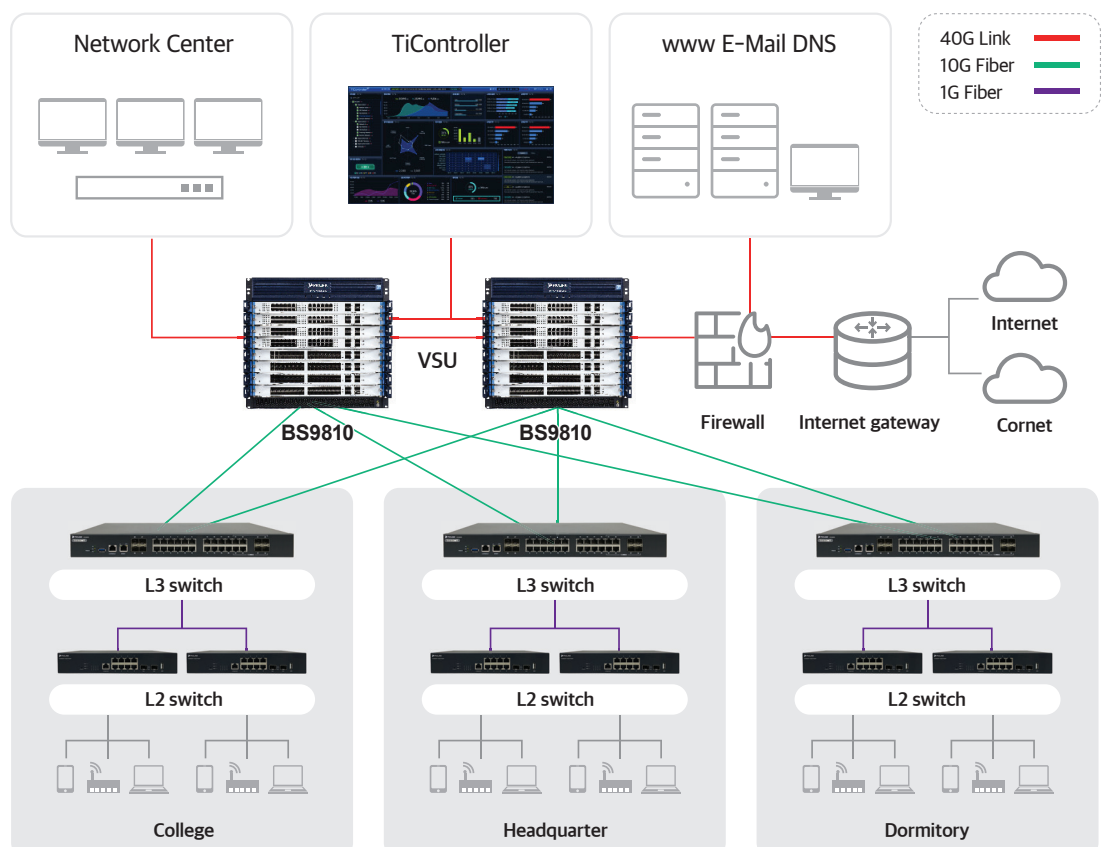
Superior energy efficiency

Low voltage power supplies and multi-core CPUs reduce power and ensure durability in high temperatures with smart fans that control temperature and speed

TiFRONT backbone switch scenario

Campus network deployment example

Network Center

TiController

www E-Mail DNS

40G Link
10G Fiber
1G Fiber

VSU

BS9810

BS9810

Firewall

Internet gateway

Internet

Cornet

L3 switch

L3 switch

L3 switch

L2 switch

L2 switch

L2 switch

College

Headquarter

Dormitory

Specification
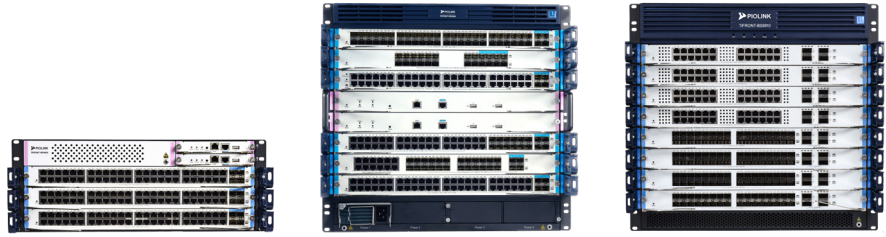
TiFRONT	BS9805	BS9808	BS9810
Height	4 U	10 U	10 U
Slot for Control Engine	2	2	2
Slot for Fabric Engine	-	-	2
Slot for Line Card	3	6	8
Max. 1GbE ports	144	288	384
Max. 10GbE ports	144	288	384
Max. 40GbE QSFP+	24	48	64
Max. 100GbE QSFP28	24	48	64
No. of Power Supply	2	4	4
No. of Fan Modules	1	2	2
Power Input	AC 100~240 V, 50/60 Hz		
Power Consumption (Main Chassis)	88 W	176 W	432 W
Switch Fabric	3.7 Tbps	9.6 Tbps	12.8 Tbps
Forwarding Rate	3321 Mpps	7142 Mpps	9047 Mpps

Control Engine

BS9805-CE-MT	BS9805 Control engines (Max. 2, 1+1 Redundancy)
BS9808-CE-MT	BS9808 control engines (Max. 2, 1+1 Redundancy)
BS9810-CE-AT	BS9810 Control Engine (Max. 2, 1+1 Redundancy)
BS9810-CE-BT	BS9810 Control Engine (Max. 2, 1+1 Redundancy)

Switch Fabric Module

BS9810-SF-AT	BS9810 First Generation Switch Fabric Module
BS9810-SF-BT	BS9810 Second Generation Switch Fabric Module

Line Card

Line Card		IPv4 Routing Table	IPv6 Routing Table
BS9800-24F12C4XS-AT	24 x 1GbE (SFP), 12 x 1GbE copper combo (RJ45), 4 x 10GbE (SFP+)	16 K	8 K
BS9800-24C24F4XS-AT	24 x 1GbE copper (RJ45), 24 x 1GbE (SFP), 4 x 10GbE (SFP+)		
BS9800-48C4XS-AT	48 x 1GbE copper (RJ45), 4 x 10GbE (SFP+)		
BS9800-48F4XS-AT	48 x 1GbE (SFP), 4 x 10GbE (SFP+)		
BS9800-32XS4QXS-AT	32 x 10GbE (SFP+), 4 x 40GbE (QSFP+), 40GbE supports 1 to 4 x 10GbE (SFP+)		
BS9800-48XS-BT	48 x 10GbE (SFP+)	64 K	24 K
BS9800-8CQ-BT	8 x 100GbE (QSFP28), Support to be downward compatible with 40GbE (QSFP+)		
BS9800-48C-BT	48 x 1GbE copper (RJ45)	134 K	50 K
BS9800-48F-BT	48 x 1GbE (SFP)		

Power Supply

BS9805-PWR-AC460	BS9805 Power Module (support redundancy, AC, 460W)
BS9808-PWR-AC1600	BS9808 Power Module (support redundancy, AC, 1600W)
BS9810-PWR-AC1600	BS9810 Power Module (support redundancy, AC, 1600W)

Common features

L2 Features	• Jumbo Frame
	• 802.1Q
	• STP, RSTP, MSTP
	• Super VLAN
	• GVRP
	• QinQ, Flexible QinQ
	• LLDP
	• ERPS (G.8032)
IPv4 Features	• Static Routing, RIP, OSPF, IS-IS, BGP4
	• VRRP
	• Equal-Cost Multipath (ECMP) Routing
	• Policy Routing
	• GRE Tunnel
IPv6 Features	• Static Routing, OSPFv3, BGP4+, IS-ISv6, MLDv1/v2
	• VRRPv3
	• Equal-Cost Multipath (ECMP) Routing
	• Policy Routing
	• Manual Tunnel, Auto Tunnel, ISATAP Tunnel, GRE Tunnel
Multicast	• IGMP v1, v2, v3
	• IGMP Snooping
	• IGMP Proxy
	• PIM-DM, PIM-SM, PIM-SSM
	• MLD
	• Multicast Static Routing
VXLAN	• VXLAN L2 Bridge
	• VXLAN L3 Bridge
ACL	• Standard, Extended, Expert ACL
	• ACL 80
	• IPv6 ACL
Port Mirroring	• Many-to-one/One-to-many, Flow-Based mirroring
	• SPAN, RSPAN, VLAN mirroring

QoS	• 802.1P
	• Queue Scheduling Mechanisms (SP, WRR, DRR, SP+WRR, and SP+DRR)
	• RED/WRED,Traffic supervision and traffic shaping
	• Input/Output Port-Based Speed Limit
Security features	• NFPP (Network Foundation Protection Policy)
	• CPP (CPU protection)
	• DAI, port security, IP Source Guard
	• 802.1x
	• Portal authentication, RADIUS and TACACS+ user login authentication
	• uRPF
	• Login authentication and password security policy
	• Unknown multicast are not delivered to CPU and Support unknown unicast suppression
	• Support SSHv2 to provide a secure and encrypted channel for user login
Reliability	• Control engine : 1+1 redundancy
	• Power supply : N+M redundancy
	• FAN : 1+1 redundancy
	• Hot-swappable components
	• Hot-path and online patch upgrade
	• ISSU
	• GR for OSPF / IS-IS / BGP
	• BFD for VRRP / OSPF / BGP4 / ISIS / ISISv6 / static routing
	• Isolating failed fiber ports
Management and Maintenance	• Console / AUX modem / Telnet / SSH2.0 command line config
	• FTP, TFTP, Xmodemfile upload/download management
	• SNMP v1/v2c/v3
	• Remote Network Monitoring(RMON)
	• NTP clock
	• Fault alarm and self-recovery
	• System Log
	• sFLOW
EEE Format	• EEE (802.3az)

PIOLINK is specialized in network and security.
We ensure the industry's best application availability and performance and
own unrivaled technologies and leadership in this intelligent,
advanced IT environment by offering the build-up of Cloud infrastructure,
the easy management of networks and data protection.
Our flagship products are Application Delivery Controller (ADC)
having Korea's No.1 market share, Web Application Firewall (WAF/WAAP),
Cloud Managed Networking and Hyper Converged Infrastructure and services,
Managed Security Service (MSS or MSSProvider)and Security Consulting.

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