
TECHNICAL DECISION MAKER PRESENTATION

Cisco Industrial Ethernet 1000 Series

Prepared as a convenient PDF reference for network planning, platform evaluation, and procurement discussions.

Source presentation: Cisco. Layer23-Switch added this cover and closing resource page. Cisco and related marks belong to Cisco Systems, Inc. This material may include historical roadmap content; verify current specifications, lifecycle status, licensing, and availability before purchase or deployment.

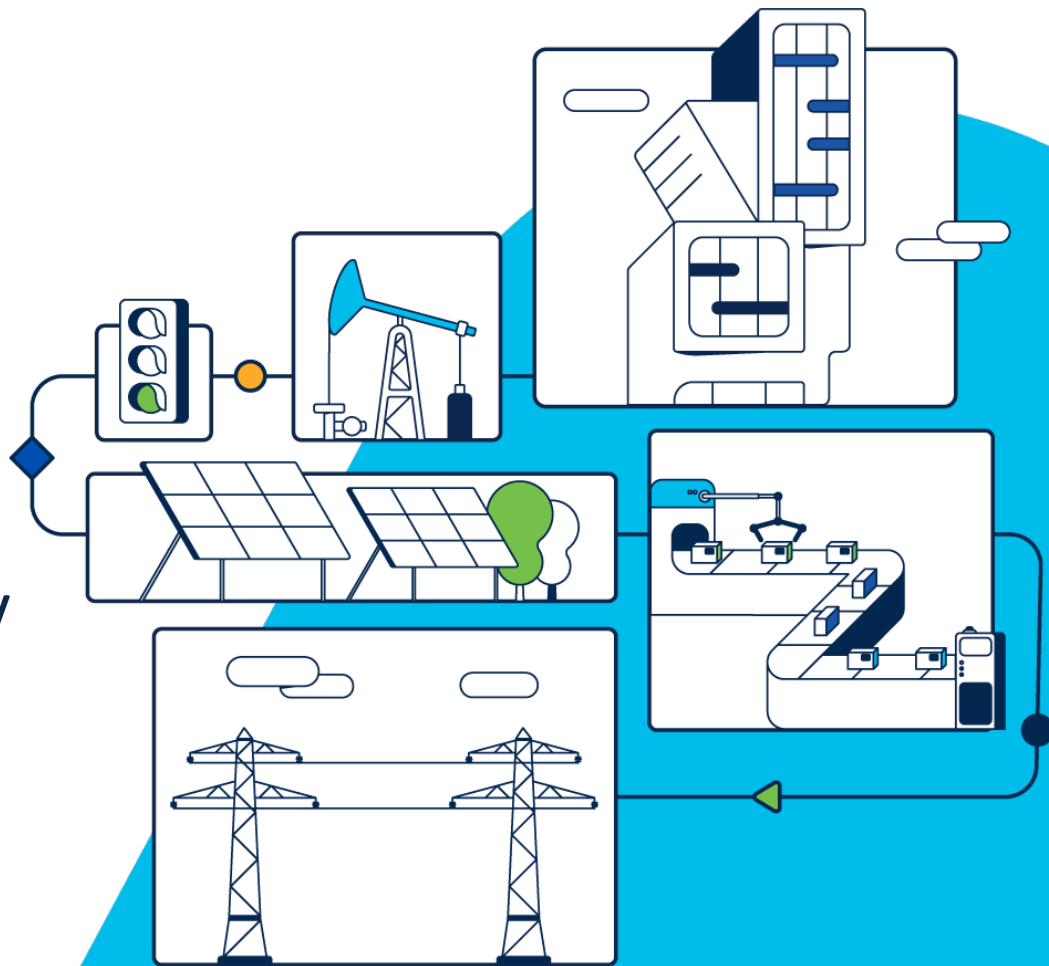


Industrial Switching IE1000 Product Family

TDM

IIoT Technical Marketing Engineering Team

Aug 2024



IE1000: Cisco Lightly Managed

IE-1000-4T1T-LM



- 5 Fast Ethernet copper
- No PoE
- Single power input
- W3.81 x H12.7 x D11.5

IE-1000-6T2T-LM



- 8 Fast Ethernet copper
- No PoE
- Single power input
- W4.5 x H12.7 x D11.5

IE-1000-4P2S-LM



- 2 Gig Fiber SFP uplinks
- 4 Fast Ethernet copper with PoE
- 120W PoE budget
- Redundant power input
- W4.5 x H12.7 x D13.3

IE-1000-8P2S-LM



- 2 Gig Fiber SFP uplinks
- 8 Fast Ethernet copper with PoE
- 160W PoE budget
- Redundant power input
- W4.5 x H12.7 x D13.3

All PIDs: 5-Year Warranty; IP30

Who wants an IE1000?

IE1000 Customers:

- Looking to Migrate to Ethernet
- Looking Migrate from Unmanaged Switch
- Don't have advanced IT support
- Don't use command line
- Require simple and easy

Unmanaged



Why lightly managed – the move from unmanaged

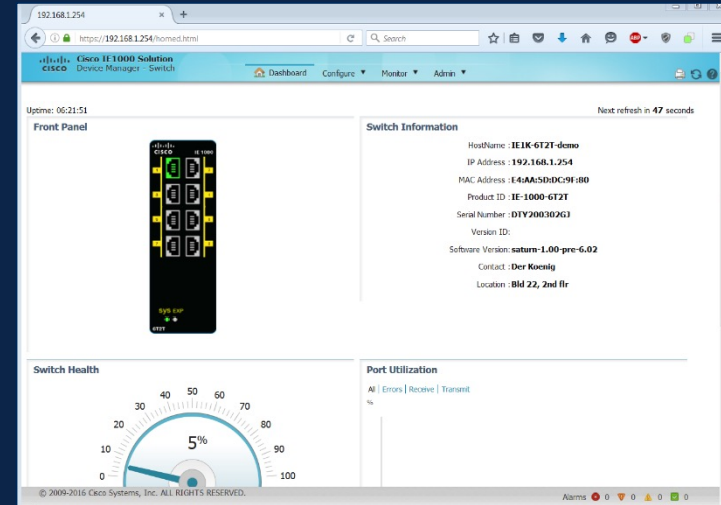
Unmanaged problem	Lightly managed solution	Benefit from Lightly managed
Blind to network outages	Troubleshooting, monitoring and diagnostics – less down time	Minimize down time
Single link failure causes network outage	Spanning Tree enables network link redundancy	Improved Network resiliency
Can't control what connects – open ports are security holes where anyone can connect	Port Security and disable ports	Increase Network security
Can't prioritize devices	QOS – prioritize ports to guarantee critical end device traffic	Prioritize critical traffic and end devices
Need a switch for each network segment	Vlans allow for logical segmentation in single switch	Reduce TCO – fewer devices in the network.

Lightly Managed



IE1000 Management

- Web-based device manager and network management only
- Well-defined and easy device install
 - Express setup, static IP, DHCP
- SSH enabled by default for troubleshooting
 - Telnet available if desired



IE1000 Main Software Features

List of features
for lightly managed



Note: Unofficial list,
subject to change



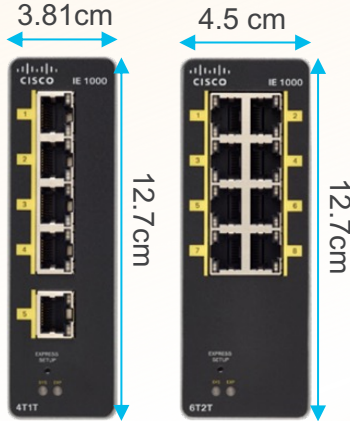
IE1000 SW Feature List

LLDP (including LLDP-MED)	Syslog
CDP (read only)	Port security
MSTP	http/https over IPv4
STP Portfast	Etherchannel (LACP)
VLANs 64	Alarms
Priority Port	IGMP
Default static IP	DHCP snooping
Trust ingress DSCP, CoS	DHCP server
SNMP v2/v3, SNMP traps	BPDU guard
ICMP	RADIUS client
Cable diagnostics	Port statistics

Benefits of IE1000

Size

IE1000 Size
IE-1000-4T1T-LM (5 ports) W3.81 x H12.7 x D11.5
IE-1000-6T2T-LM (8 ports) W4.5 x H12.7 x D11.5 (cm)
IE-1000-4P2S-LM (6 ports) W4.5 x H12.7 x D13.3
IE-1000-8P2S-LM (10 ports) W4.5 x H12.7 x D13.3



Boot time: ~30 seconds

Power consumption: <10W

POE

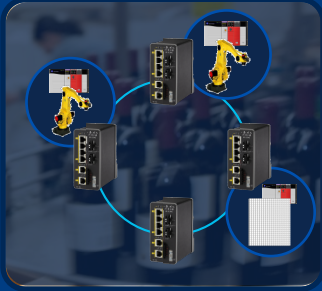
IE1000 POE ports	PoE Budget
IE-1000-4P2S-LM (6 ports) 4 PoE/PoE+	120W
IE-1000-8P2S-LM (10 ports) 8 PoE/PoE+	180W

IE1000 Use Cases



Key Use Cases

Cost-Effective Machine Building



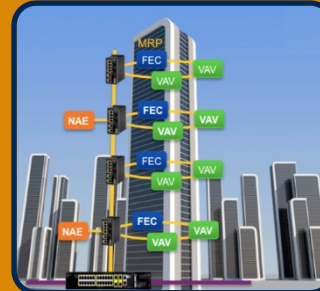
- CapEx-sensitive machine builders/integrators
- Space optimized to fit in cabinets
- Simplified provisioning

Hard-to-Access Industrial Networks



- Wellheads, wind turbines, water waste management
- Brownfield deployment where small size and power-efficient switch are needed

Building Automation



- Building automation systems moving from serial fieldbus to Ethernet
- Distributed Ethernet architecture more economical than traditional home-run to wiring closet

Small-Footprint PoE Switch



- ITS, track-side networks, city surveillance monitoring
- Compact PoE switch is a major product gap

Why IE1000 in these cases?

- Small size
- ~30-second boot time
- Power consumption < 10W
- PoE

Device Manager Primary User Interface

Installation of IE1000: 3 Methods

1. Express setup

1. Documented HW install guide
2. Explicit action by installer to invoke express setup

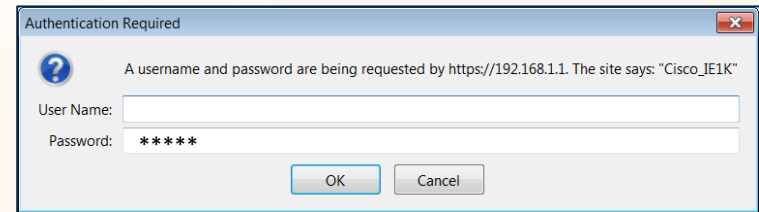
2. DHCP

1. On VLAN 1, DHCP client
2. Times out after 2 minutes

3. Static IP address

1. After 2 minutes, DHCP client times out, IE1000 assigns 192.168.1.254 to VLAN 1
2. All ports are members of VLAN 1

- Default username/password
 - User=<tab>, pass='cisco'



IE1000 Device Manager: Express Setup Page

- Express setup page: configures switch management
- Defaults to DHCP
- Static IP address is 192.168.1.254
 - When DHCP client times out after 2 minutes

192.168.1.254/homed.html

Cisco IE1000 Solution Device Manager - Switch

Express Setup

Network Settings

Host Name:

Management Interface (VLAN):

IP Assignment Mode: ☒ Static ☐ DHCP

IP Address: /

Default Gateway:

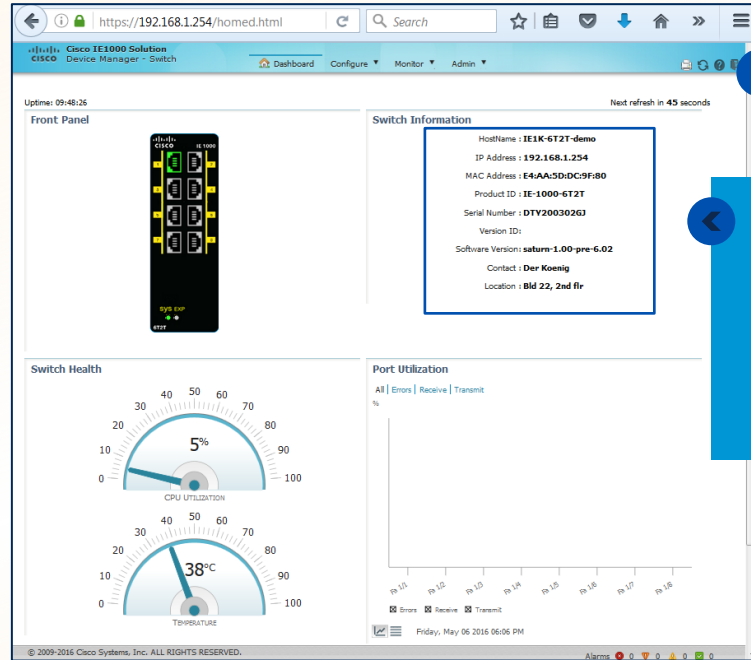
NTP Server:

Admin user :

Password :

Confirm Password:

IE1000 Device Manager Dashboard



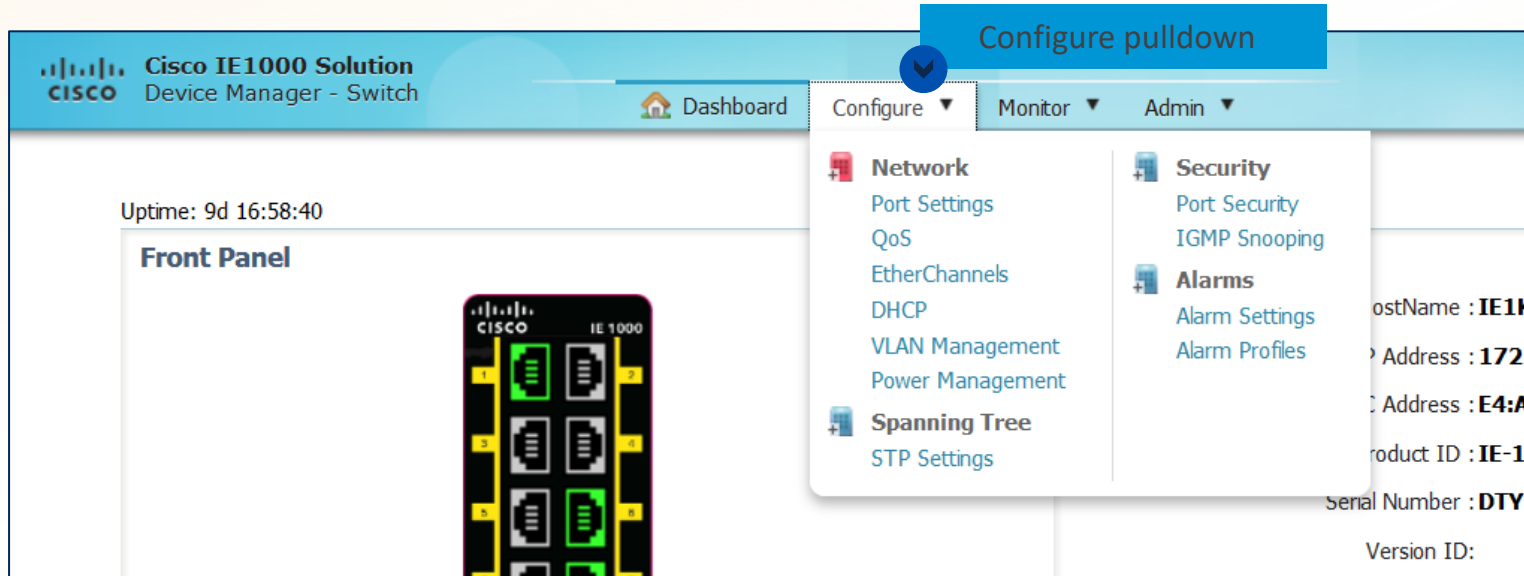
Online help available on every page

Provides switch information:

- IP address
- MAC address
- Product ID
- Serial number
- SW version

IE1000 Device Manager Configure Pulldown

- Configurable features from Configure pulldown tab



IE1000 Device Manager: VLAN Management

- VLANs and management IP addressing page

File Edit View History Bookmarks Tools Help

192.168.1.1 x +

https://192.168.1.1/homed.html

Cisco IE1000 Solution
Device Manager - Switch

Dashboard Configure Monitor Admin

To add or edit ports in a VLAN, use the Physical Port Settings page.

[Add](#) [Edit](#) [Delete](#)

VLAN ID	Name	Ports	IP address
☐ 1	default	Fa 1/1,Fa 1/2,Fa 1/3,Fa 1/4,Fa 1/5,Fa 1/6,Fa 1/7,Fa 1/8	192.168.1.1
☐ 200	public	Fa 1/1,Fa 1/2,Fa 1/3,Fa 1/4,Fa 1/5,Fa 1/6,Fa 1/7,Fa 1/8	10.89.33.4

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Alarms 0 0 0 0

PoE Management

- PoE budget has range 4–180
- Defaults to 160 because of 170W PSU
- Management modes:
 - Auto-LLDP: use LLDP for max power draw; reserves what is negotiated
 - Auto-PD Class: PD class determines max power draw; reserves the class max
 - Static: max power determined by value in 'max power field'; reserves based on max power field

The screenshot shows the Cisco IE1000 Solution Device Manager - Switch interface. The top navigation bar includes 'Dashboard', 'Configure', 'Monitor', and 'Admin'. The 'Configure' menu is open, showing options like Network, Security, Alarms, and Spanning Tree, with 'Power Management' highlighted. The main content area is titled 'Network | Power Management'. It displays the following settings:

- Total Power Supported: 160 (Range)
- Total Power Used: 4.7 (Watts)
- Total Power Available: 155.3 (Watts)
- Management Mode: Auto-LLDP

A 'Submit' button is located below the settings. Below the settings is a 'PoE Interface Table' with the following data:

Interface	Mode	Status	Power(Watts)	Max Power(Watts)	Current (mA)	Class	Power Priority
Fa 1/1	PoE+	On	4.7	15.4	90	3	Low
Fa 1/2	PoE+	Off - No PD Detected	0	15.4	0	N/A	Low
Fa 1/3	PoE+	Off - No PD Detected	0	15.4	0	N/A	Low
Fa 1/4	PoE+	Off - No PD Detected	0	15.4	0	N/A	Low
Fa 1/5	PoE+	Off - No PD Detected	0	15.4	0	N/A	Low
Fa 1/6	PoE+	Off - No PD Detected	0	15.4	0	N/A	Low
Fa 1/7	PoE+	Off - No PD Detected	0	15.4	0	N/A	Low
Fa 1/8	PoE+	Off - No PD Detected	0	15.4	0	N/A	Low

QoS: Priority Port

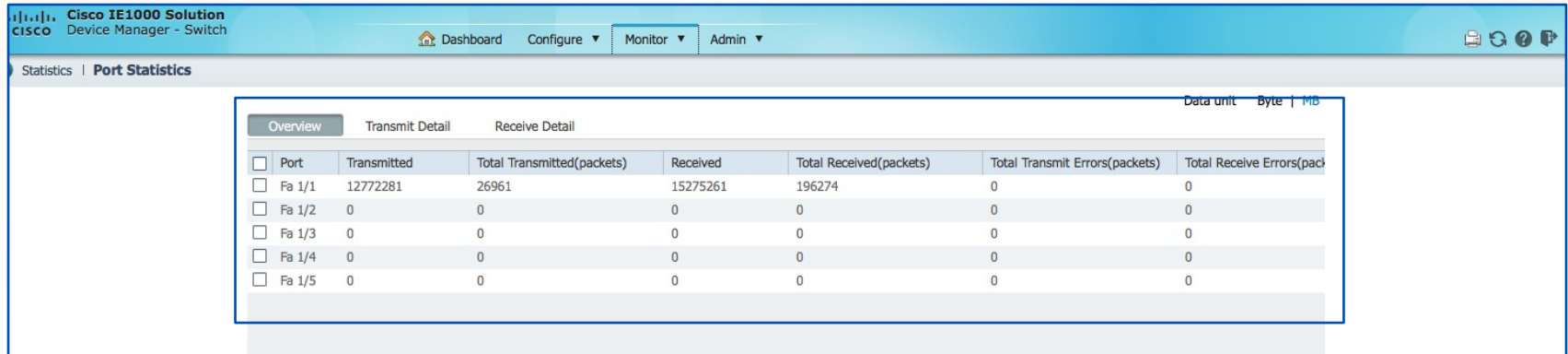
- Used to boost priority of a host that does not mark DSCP or CoS
- Priority Port remarks ingress DSCP to 34 and CoS to 3
 - Marks all packets, not just CoS/DSCP 0
- More than 1 port can be marked as Priority Port
- IE1000 trusts DSCP and CoS on ingress
 - It does not rewrite DSCP or CoS unless its priority port
- IE1000 uses strict priority for egress queueing
 - Priority determined by DSCP or CoS values

The screenshot displays the Cisco IE1000 Solution Device Manager - Switch web interface. The top navigation bar includes 'Dashboard', 'Configure', 'Monitor', and 'Admin'. The 'Configure' menu is expanded, showing options like 'Network', 'Port Settings', 'QoS' (highlighted), 'EtherChannels', 'DHCP', 'VLAN Management', 'Power Management', 'Spanning Tree', and 'STP Settings'. The 'Network' section is selected, and the 'QoS' sub-section is active. The main content area shows 'QoS - Port Priority Settings' with a table listing ports and their enable status.

Port Name	Enable
Fa 1/1	☐
Fa 1/2	☐
Fa 1/3	☐
Fa 1/4	☐
Fa 1/5	☐
Fa 1/6	☐
Fa 1/7	☐
Fa 1/8	☐
Gi 1/1	☐
Gi 1/2	☐

IE1000 Device Manager: Ethernet Port Statistics

- Statistical units can be changed between Bytes and MB
- Transmit as well as Receive



The screenshot displays the Cisco IE1000 Solution Device Manager - Switch interface. The top navigation bar includes links for Dashboard, Configure, Monitor, and Admin. The 'Monitor' tab is active, showing the 'Port Statistics' section. A table titled 'Port Statistics' is displayed, with tabs for Overview, Transmit Detail, and Receive Detail. The 'Overview' tab is selected, showing a table of port statistics. The table has columns for Port, Transmitted, Total Transmitted(packets), Received, Total Received(packets), Total Transmit Errors(packets), and Total Receive Errors(packets). The data is as follows:

Port	Transmitted	Total Transmitted(packets)	Received	Total Received(packets)	Total Transmit Errors(packets)	Total Receive Errors(packets)
Fa 1/1	12772281	26961	15275261	196274	0	0
Fa 1/2	0	0	0	0	0	0
Fa 1/3	0	0	0	0	0	0
Fa 1/4	0	0	0	0	0	0
Fa 1/5	0	0	0	0	0	0

IE1000 Device Manager: Port Security

- Port Security feature to limit number of MAC addresses on an interface
- Globally enable
- Enable/disable per interface
- Action for violation:
 - None
 - Shutdown
 - Trap
 - Trap shutdown

The screenshot displays the Cisco IE1000 Solution Device Manager - Switch interface. The top navigation bar includes 'Dashboard', 'Configure', 'Monitor', and 'Admin'. The 'Configure' menu is open, showing options like Network, Port Settings, QoS, EtherChannels, DHCP, VLAN Management, Spanning Tree, and STP Settings. The 'Security' menu is also open, showing options like Port Security, IGMP Snooping, SNMP, Alarms, and Alarm Settings. The 'Port Security' configuration page is active, showing the following settings:

- Mode:** Enabled
- Aging Enabled:** ☒
- Aging Period:** 3600 Seconds
- Submit** button

Below the settings is the 'Port Security Table' with the following columns: Port Name, Enable, Maximum MAC Count Allowed, and Action.

Port Name	Enable	Maximum MAC Count Allowed	Action
☐ Fa 1/1	Disabled	4	none
☒ Fa 1/2	Enabled	4	shutdown
☐ Fa 1/3	Disabled	4	none
☐ Fa 1/4	Disabled	4	none
☐ Fa 1/5	Disabled	4	none
☐ Fa 1/6	Disabled	4	none
☐ Fa 1/7	Disabled	4	none
☐ Fa 1/8	Disabled	4	none

At the bottom right of the table, there are 'Save' and 'Cancel' buttons.

Image Update from DM:

- To update to new SW version
 - 'Admin->Software Update'
- The IE1000 maintains previous image called backup
- Use CLI (eg: SSH) to revert to backup image
- Must 'Admin->Restart/Reset' to reboot and run new image

The screenshot shows the Cisco IE1000 Solution Device Manager - Switch interface. The browser address bar shows 192.168.1.254/homed.html. The page has a blue header with the Cisco logo and navigation tabs: Dashboard, Configure, Monitor, and Admin. The 'Admin' tab is selected, and the 'Software Update' option is highlighted in the left sidebar. The main content area displays the current software status:

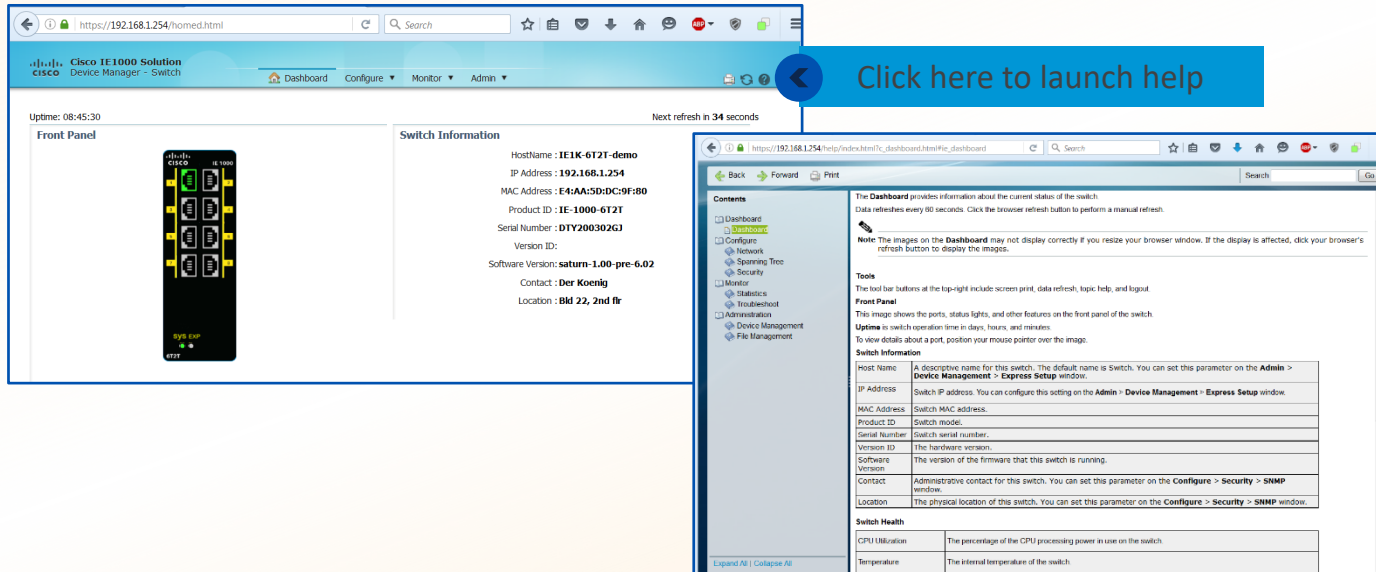
Active Image : Cisco IE1000 Series, Software (ie1000-universalk9), Version (1.2), Build Date (2016-07-12T19:15:30+00:00)
Backup Image : Cisco IE1000 Series, Software (ie1000-universalk9), Version (1.0.1001.5), Build Date (2016-06-23T12:28:19+00:00)

Below this, the 'Software update' section contains a 'Browse...' button with the text 'No file selected.' and an '(OR)' separator. There are input fields for 'TFTP Address:' and 'Image location:'. An 'Update' button is located below these fields.

At the bottom, there is a table with two columns: 'Stage' and 'Status'. The 'Stage' column lists two steps: '1. Loading the bin file to the switch' and '2. All software images installed'. The 'Status' column is currently empty.

Online Help: Available from Every Screen

- Context-sensitive help available to assist with configuration and troubleshooting



The screenshot displays the Cisco IE 1000 Solution Device Manager interface. The top navigation bar includes links for Dashboard, Configure, Monitor, and Admin. A blue callout box with a left-pointing arrow and the text "Click here to launch help" points to the help icon in the top navigation bar.

The main content area is divided into two sections:

- Front Panel:** Displays a visual representation of the switch hardware.
- Switch Information:** Provides details about the switch, including:
 - Hostname: IE1K-612T-demo
 - IP Address: 192.168.1.254
 - MAC Address: E4AA:5D:DC:9F:80
 - Product ID: IE-1000-612T
 - Serial Number: DTY200302GJ
 - Version ID: saturn-1.00-pre-6.02
 - Contact: Der Koenig
 - Location: Bld 22, 2nd flr

A second browser window is overlaid on the right, showing the online help content for the Dashboard. The help content includes a "Contents" sidebar with links to Dashboard, Configure, Network, Spanning Tree, Security, Master, Statistics, Troubleshoot, Administration, Device Management, and File Management. The main help text describes the Dashboard's purpose and provides a table of switch information and health metrics.

Switch Information	
Host Name	A descriptive name for this switch. The default name is Switch. You can set this parameter on the Admin > Device Management > Express Setup window.
IP Address	Switch IP address. You can configure this setting on the Admin > Device Management > Express Setup window.
MAC Address	Switch MAC address.
Product ID	Switch model.
Serial Number	Switch serial number.
Version ID	The hardware version.
Software Version	The version of the firmware that this switch is running.
Contact	Administrative contact for this switch. You can set this parameter on the Configure > Security > SNMP window.
Location	The physical location of this switch. You can set this parameter on the Configure > Security > SNMP window.

Switch Health	
CPU Utilization	The percentage of the CPU processing power in use on the switch.
Temperature	The internal temperature of the switch.

Hardware



IE1000 Hardware Summary

SKU	IE1K-Copper	IE1K-PoE
Downlinks	4 10/100M RJ45 6 10/100M RJ45	4 10/100M RJ45 (w/PoE) 8 10/100M RJ45 (w/PoE)
Uplinks	(5port) 1 FE Copper (8port) 2 FE copper	2 GigE Fiber (copper and Fiber SFP)
PoE	No	PoE/PoE+
Total Ports	5 or 8	6 or 10
Power Input	24 VDC nominal (9–36)	48/54 VDC nominal (44–57)
Size (cm)	(5port) W3.81 x H12.7 x D11.5 (8port) W4.5 x H12.7 x D11.5	W4.5 x H12.7 x D13.3
Console port	None	
Alarm input/output	No	Yes
Temperature range	-20-60C	-40-70C
Ingress Protection	IP30	
Warranty	5yr	



HW performance & Scale

The IE1K supports

- 8,192 MAC Addresses
- 64 vlans supported
- Line rate forwarding on all interfaces.
 - pps values are calculated.
 - FE interfaces PPS = 148,809
 - GE interfaces PPS = 1,488,906



RFC 2544

IE2K - L2 - GE- GE copper	GE interfaces
Frame Size	Latency Avg (ns)
64	8769
128	9491.5
1024	18596.5
1518	24559.5
IMIX	24634.5

IE1K - L2 GE-GE Fiber	GE Interfaces
Frame Size	Latency Avg (ns)
64	1717
128	2208
1024	9721
1518	13307.5
IMIX	13289.333

IE1K - L2 FE-FE copper	FE interfaces
Frame Size	Latency Avg (ns)
64	10167.5
128	15396.5
1024	87017.5
1518	126633
1998	164927.5

Hardware Faceplate Features

Top view

Alarm Out

Dual Chassis
Ground

Dual
Power Input

IE-1000-4P2S

Express Setup

Faceplate PID

SFP Uplinks

IE-1000-4P2S



Power Summary

- Supported Power supplies
 - PWR-IE170W-PC-DC=
 - PWR-IE170W-PC-AC=
 - PWR-IE65W-PC-AC=
 - PWR-IE65W-PC-DC=
 - PWR-IE50W-AC-IEC=
 - PWR-IE50W-AC
- IE1K-8P2S can exceed 170WPSU with PSU supplying more W

SKU	IE1K-4T1T	IE1K-6T2T	IE1K-4P2S	IE1K-8P2S
PoE	N	N	PoE/PoE+	PoE/PoE+
Total Ports	5	8	6	10
Power Input (supported)	24 VDC nominal (9–36)	24 VDC nominal (9–36)	48/54 VDC nominal (44–57)	48/54 VDC nominal (44–57)
Power input ports	Single	Single	Dual	Dual
Rating on panel	12-24V 0.15-0.28A	12-24V 0.19-0.35A	48-54V 1.45-2.62A	48-54V 2.80-3.82A
Volts/Current	12V/.28A 24V/.15A	12V/.35A 24V/.19A	48V/1.45A* 51V/2.62A**	48V/2.80A* 51V/3.82A**
Max Power (W)	0.3A*12V = 3.6W 0.15A*24V = 3.6W	0.4A*12V = 4.8W 0.2A*24V = 4.8W	1.5A*48V = 72 W 2.6A*54V = 140.4 W	2.8A*48V = 134.4 W 3.8A*54V = 205.2 W
Recommended PWR Supply	PWR-IE50W-AC-IEC= PWR-IE50W-AC	PWR-IE50W-AC-IEC= PWR-IE50W-AC	PWR-IE170W-PC-DC= PWR-IE170W-PC-AC=	PWR-IE170W-PC-DC= PWR-IE170W-PC-AC=

* PoE 4 ports

** PoE+ 4 ports

PoE Summary

- IE1000 Per SKU Budget

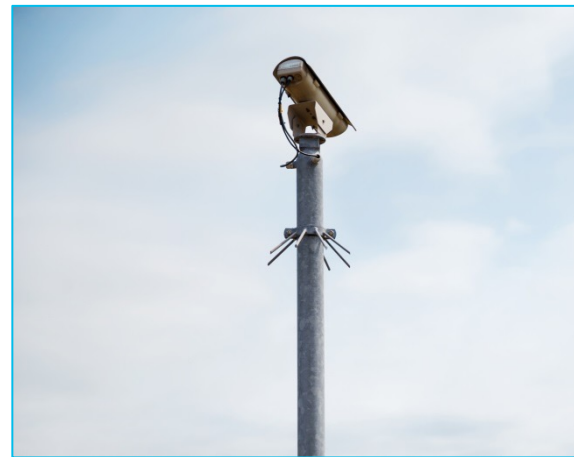
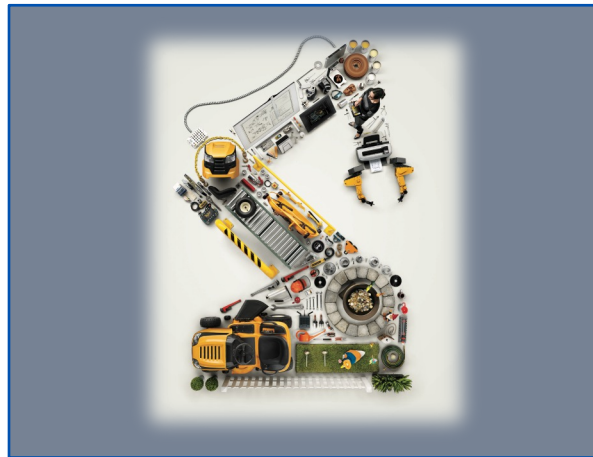
PID	PoE Budget Range	PoE Budget Default
4P2S	4-120 (w)	120
8P2S	4-180 (w)	160

- Power Supply determines actual budget
- PoE Management Modes:
 - Auto-LLDP: use LLDP for max power draw; reserves what is negotiated
 - Auto-PD Class: PD class determines max power draw; reserves the class max
 - Static: max power determined by value in 'max power field'; reserves based on max power field

Summary

Cisco IE1000 Series Industrial Ethernet Switches

Extend the proven Cisco® Ethernet for Harsh Industrial Environments
Enabling New IoT Use Cases



To learn more, visit: www.cisco.com/go/ie1000





The bridge to possible



Turn this technical overview into a purchase-ready BOM

Send the exact model or BOM and your deployment requirements. Layer23-Switch can review compatibility, availability, and quote options.

- ✓ Exact model or Cisco PID and quantity
- ✓ Port count, media type, PoE budget, and uplink speed
- ✓ Redundancy, licensing, support, and accessory needs
- ✓ Ship-to country, target date, and lead-time constraints

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