



Over IP Data Center Control

Integrated Access & Monitoring Solutions





Over IP Data Center Control Essentials

Central Control

To provide access to multiple platforms and appliances, including servers and network services, within one switching system via central and complete control of the complete IT infrastructure, no matter where the components are located.

Remote Access

To meet the ever-increasing need to maximize IT personnel's availability, both in and out of the data center, by providing remote access to assets to reduce travel needs and improve response times with minimal disruption to essential services.

Reliability

Mechanical robustness and build quality plus an accessible and intuitive management system are a must to provide both essential software and hardware reliability for 24-7 operations, including out-of-band remote access.

Scalability

To provide future-proof infrastructure/investment protection and scalability as the network grows, by being deployment-capable in situations ranging from a single server to an installation that incorporates thousands of servers.

Security

To provide industry-standard, enterprise class security with authentication and authorization processes that allow multi-level user access control, and log console sessions and activities, as well as protection against malicious attacks.

Multiple Devices, One Solution

With the ever-growing demand for IT devices in the modern data center, IT managers must handle an exponential number of IP addresses coupled with a slew of authentication mechanisms and distinct portal access for different devices. Thus, they require an efficient tool to centrally manage the needs of a data center and users alike – all from a single platform.

ATEN over IP data center control solutions integrate hardware devices and provide management software that allows IT administrator's simple control and monitoring of all IT equipment. Our tools provide centralized management for the server room by utilizing single IP, single sign-on and single portal access, locally and worldwide – from anywhere, at anytime.

- **KVM over IP Switch**

Access and manage different types of server platforms in remote data centers with ease.

- **Serial Console Server**

Manage and control all serial devices inside a server room from anywhere in the world.

- **Energy Intelligence PDU**

Remotely manage the power status of IT devices in server rooms around the world.

- **Eco Sensors Management Software**

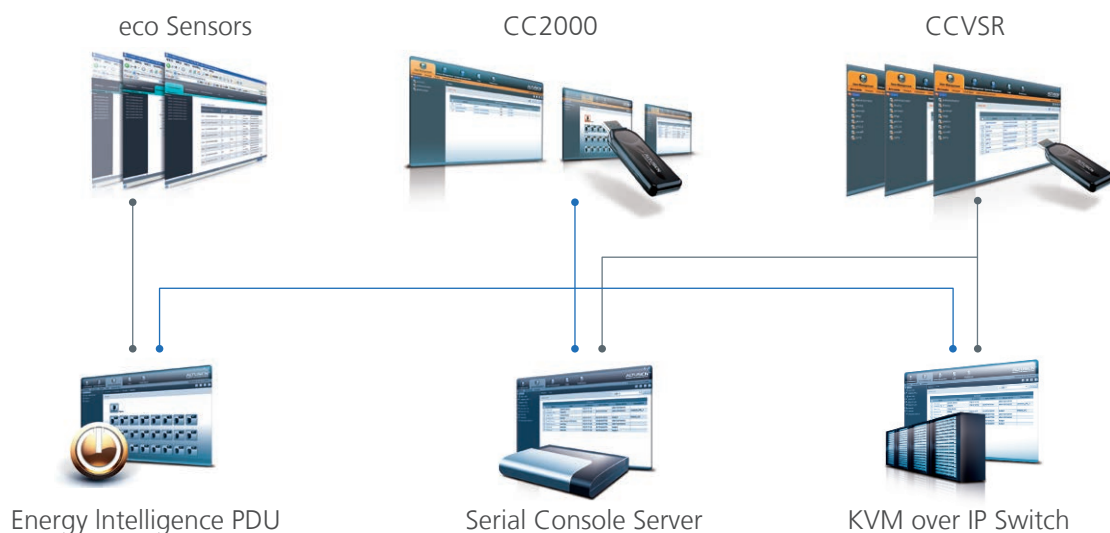
An integrated management solution for all your power and environment monitoring devices.

- **CC2000 Centralized Management Software**

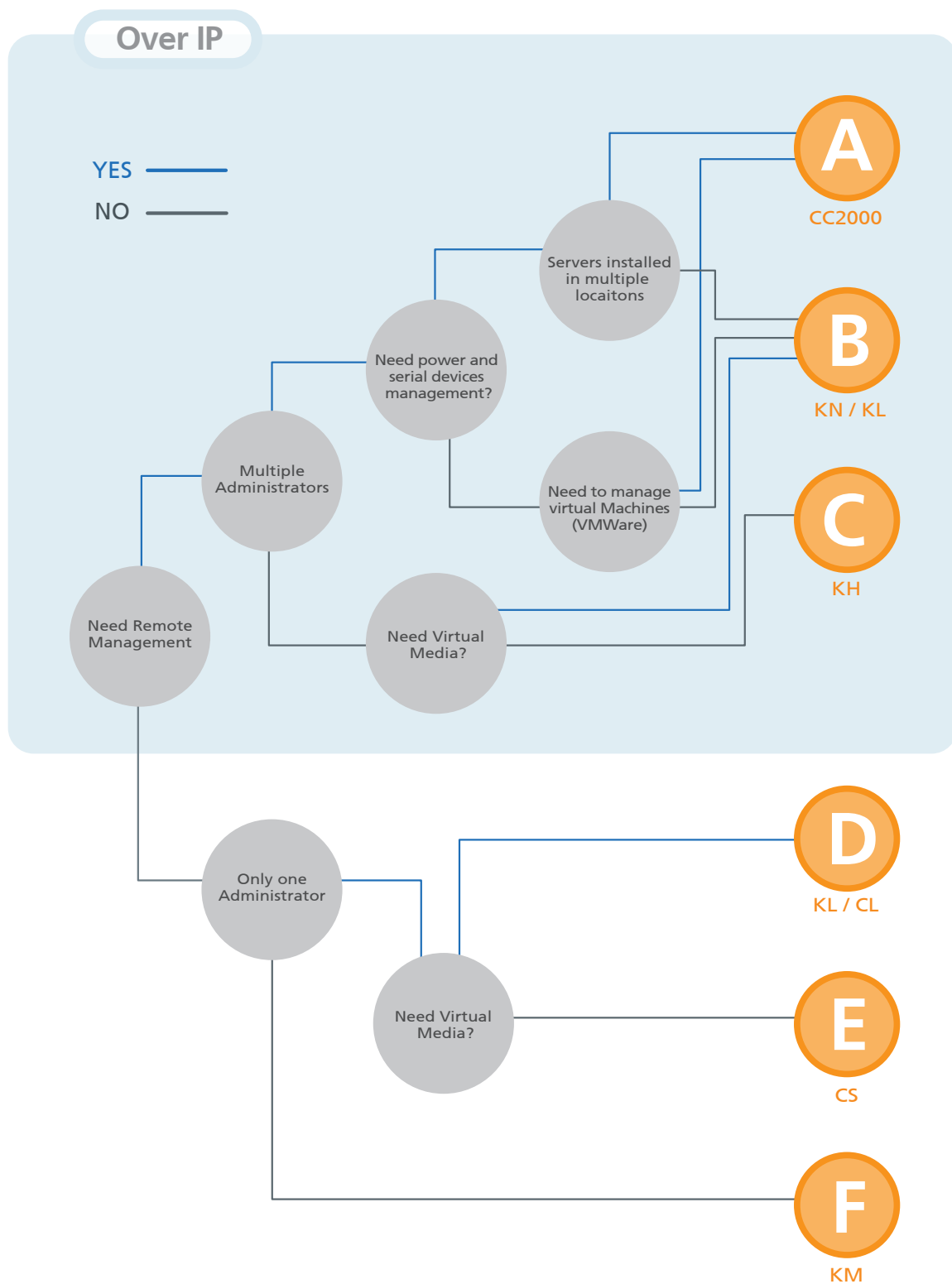
A secure systems management solution that enables centralized management of all the IT equipment connected to ATEN over IP devices through a single portal.

- **CCVSR Video Session Recorder**

Software solution that records a video of all operations on servers connected to KVM over IP Switches.



KVM Solution Navigation





Centralized Management Software CC2000

CC2000 is a centralized management access solution of all the IT equipment like IP KVM Switches, Serial devices and power devices which allows administrators to have complete control of their data centers from a single centralized platform. In addition, it allows users to manage physical servers distributed in remote data centers and branch offices no matter where in the world they are deployed. CC2000 also allows IT administrators to centrally and remotely monitor blade servers and virtual machines.



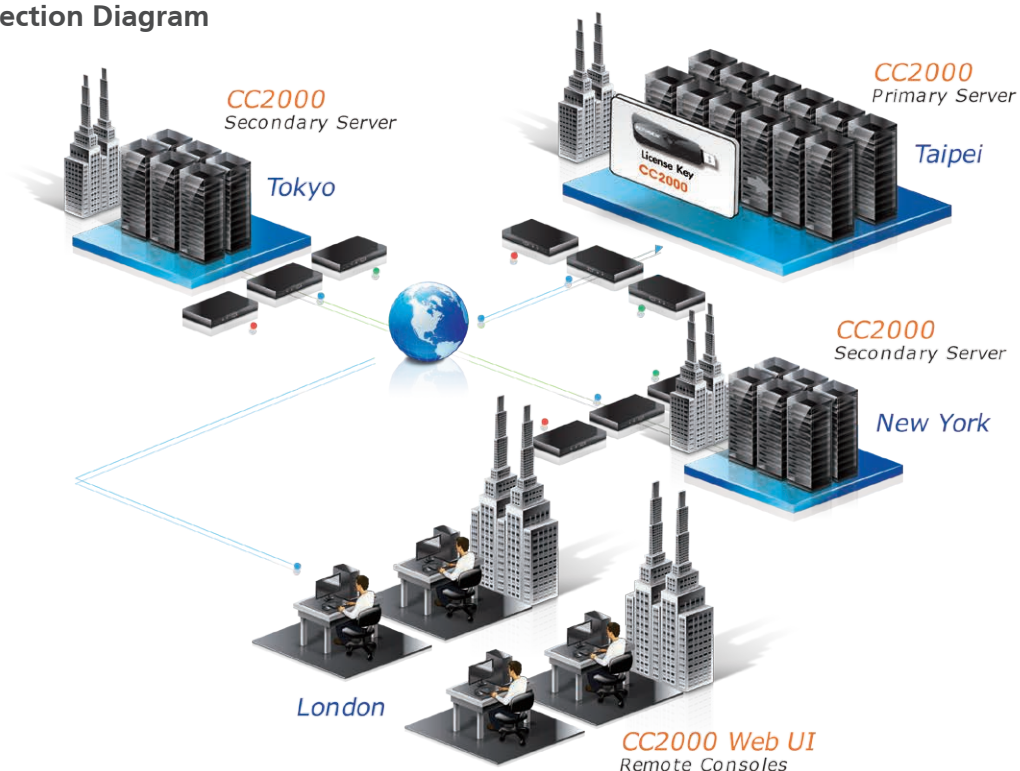
Advantages

- Complete control of your data center – consolidates the management of ATEN devices.
- Single portal, single sign-on, single IP address to securely access every device on the installation.
- All devices are integrated into a single tree view for centralized access, administration and management of a worldwide network from anywhere at any time.

Special Features

- Automatic scheduling of system, configuration and maintenance tasks.
- Supports single sign-on for Dell DRAC 5, iDRAC 6, IBM RSA II, HP iLO 2, iLO 3, iLO 4, Dell CMC, IBM AMM, and HP OA.
- VMware Virtual Infrastructure includes Center Servers, ESX Servers, Virtual Machines and Citrix XenServer.

Connection Diagram





KVM Over IP Switch with Virtual Media KN Series

ATEN's KN Series of KVM Over IP Switches provide remote access to manage data center or branch office servers anytime, anywhere. They offer IT managers a scalable, sustainable and secure enterprise-class KVM over IP solution. Models with Virtual Media are available with support for various numbers of local user and remote user configurations to monitor and access multiple computers from remote locations using a standard Internet browser.



Special Features

- Extreme virtual media can be used to install software even when the user is away from the server; USB and other storage media can be mapped to a remote server smoothly and remotely from anywhere in the world
- Panel Array Mode allows administrators to monitor the video output of up to 40 servers simultaneously
- Advanced FPGA graphics processor supports HD resolutions up to 1920 x 1200
- High grade security – supports FIPS 140-2 level 1 security standards
- Supports Dual Power and Dual NIC to prevent system failure – Integrated dual power supplies provide reliable power redundancy

Cat 5 Dual Rail LCD KVM Over IP Switch KL Series

The ATEN KL Series of Dual Rail LCD KVM Over IP Switches provide a streamlined method to conserve server room rack space by integrating a retractable LCD monitor and touchpad in a 1U housing. Various models are available with a wide range of features, including Virtual Media support, daisy-chain functionality and high-grade security. All models support one bus for remote KVM over IP access via the LAN, WAN or Internet.



Special Features

- Advanced FPGA graphics processor supports HD resolutions up to 1920 x 1200
- Extreme virtual media transmission speed means that USB and other storage media can be mapped to a remote server smoothly and remotely from anywhere in the world faster than ever
- Panel Array Mode allows administrators to view all the ports simultaneously

* Not all models support all special features.



Cat 5 High-Density KVM Over IP Switch KH Series

ATEN's KH series of Cat 5 High-Density KVM over IP Switches offers 8/16 computer port configurations in a 1U-high housing for convenient rack mounting. They allow local and remote operators to monitor and access the entire enterprise data center over the Internet using a web-based browser. Both the server side and the control side support PS/2 USB dual interface. There is also a dedicated USB port which connects to a laptop for easy console operation.



Special Features

- Laptop USB Console (LUC) function allows for a laptop to be directly connected for easy console operation
- Panel Array Mode allows administrators to monitor the video output of up to 42 servers simultaneously
- Local Console, Browser, and AP GUIs offer a unified multi-language interface to minimize user training time and increase productivity
- Message Board function allows for convenient communication among remote users



LCD KVM Switch KL / CL Series

The ATEN KL/CL Series of LCD KVM Switches provide a streamlined method to conserve server room rack space by integrating a retractable LCD Monitor and touchpad in 1U housing that is designed to install easily and operate smoothly. Suitable for servers with dual interface of PS/2 and USB and also with multiple operating systems. Also suitable for multiple platform server environments.



Special Features

- Contains a 2nd console to provide administrators with the convenience and flexibility of using a standard keyboard / monitor / mouse console
- High scalability and multi-platform support – control up to 256 computers via daisy-chain
- Exclusive LED illumination light to allow keyboard/touchpad visibility in low-light conditions

* Not all models support all special features.



PS/2 / USB KVM Switch CS Series

The CS Series are analog KVM switches with dual interface support for computers/consoles with PS/2 or USB keyboards and mice. Supports additional operation systems – Linux, Solaris, Mac – along with Windows. Models feature a user-friendly interface and convenient user management and permissions.



Special Features

- Highly scalable with multiplatform support in addition to daisy chain support:
- USB port enables a HUB function which can help to connect flash memory, touch panels etc; can also be used outside the server room environment.
- Exclusive ATEN Video DynaSync technology eliminates boot-up display problems



Cat 5 Matrix KVM Switch with Multiple Consoles KM Series

The KM series of matrix KVM switches allow flexible expansion with cascade functionality up to 3 levels from the master switch. Models have nine consoles which can control 32 servers independently and simultaneously. These are the first analog KVM switches equipped with audio capabilities and multimedia support. Other features like redundant power supply ensure high reliability of operation.



Special Features

- Multi party audio transmission feature allows more users access to the same KVM port, so that the users will be able to hear audio playback
- Virtual Media can be used to install software even when the user is away from the server; USB and other storage media can be mapped to a remote server smoothly and remotely from anywhere in the world, reducing the burden on IT managers
- Auto Signal Compensation (ASC) assures optimum video resolutions for distances up to 300 m between computers and consoles – no DIP switch setting required

* Not all models support all special features.



Serial Console Server

ATEN Serial Console Servers are control units that provide both in-band and out-of-band remote serial access to up to 48 servers or other serial IT devices (hubs, routers, power management devices, etc.) via a Telnet or SSH TCP/ IP connection.

Serial Console Servers also come in one port Serial Device Servers that support RS-232, RS-422, and RS-485 data transmissions with Ethernet connectivity for a wide variety of serial devices in commercial applications including industrial control, data acquisition, access control, environment monitoring, banking, telecom, remote site management and more.

ATEN's total serial access solutions transform the capability of legacy devices, allowing you to take advantage of the speed and reliability of today's modern remote access methods.

Serial Device Server

SN3101

Front



Rear



- Provides over IP access for industrial serial devices
- Software selectable RS-232/422/485 3-in-1 serial port
- 64 Kbyte port buffer prevents data loss when the network is unstable
- SNMP MIB II and RS-232 MIB for network management
- SMTP and SNMP trap event notification
- Choice of power input: AC-DC adapter or DC IN direct

8/16-Port Serial Console Server with Single Power/LAN

SN9108 / SN9116

Front (SN9116)



Rear (SN9116)



- Secure in-band and out-of-band network access to serial devices
- Convenient and simple access via browser or Telnet / SSH client
- Comprehensive logging and event notification

8/16/32/48-Port Serial Console Server with Dual Power/LAN

SN0108A / SN0116A / SN0132 / SN0148

Front (SN0148)



Rear (SN0148)



- Dual Ethernet ports for failover or dual IP addresses access
- Dual power supply for power redundancy
- Secure in-band and out-of-band network access to serial devices
- Convenient and simple access via browser or Telnet / SSH client
- Comprehensive logging and event notification
- Laptop USB Console (LUC) port and USB ports for USB storage and USB-based PC cards
- FIPS 140-2 compliant cryptography

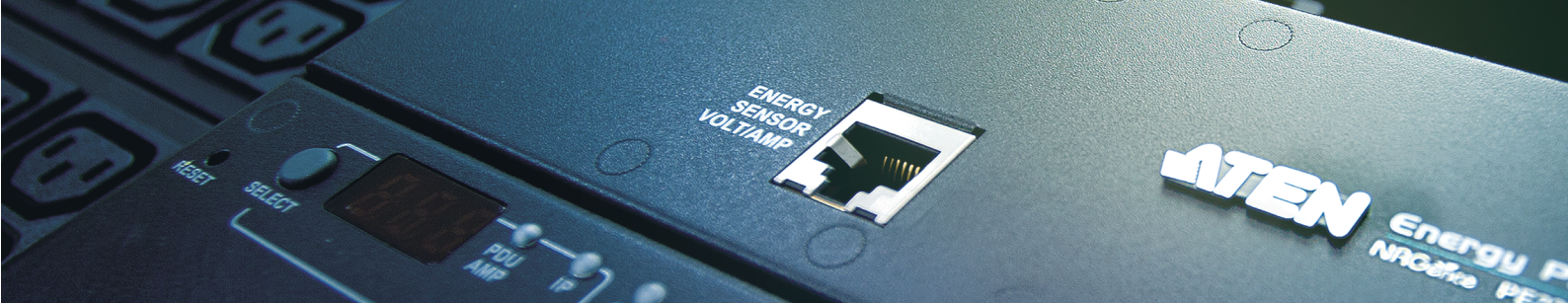
Serial Console Server Comparison

| Model No. | | SN3101 | SN9108 / SN9116 | SN0108A / SN0116A SN0132 / SN0148 |
|---------------------------|-----------|---|---|--------------------------------------|
| Device Connection | | 1 | 8/16 | 8/16 32/48 |
| Concurrent Access | | 1 | 8/16 | 8/16 32/48 |
| Device | Interface | Serial (RS-232/RS-485/RS-422) | Serial (RS-232) | Serial (RS-232) |
| | Connector | DB-9 | RJ-45 | RJ-45 |
| Remote Access | | • | • | • |
| LAN Connection | | RJ-45 | RJ-45 | RJ-45 |
| Out of Band Configuration | | N/A | • | • |
| PON Support | | • | • | • |
| Real COM Port Support | | • | • | • |
| Power | | AC, DC Power | AC Power | AC, DC Power* |
| Communication Modes | | Real COM, TCP Server (RAW TCP), TCP Client, UDP Server/Client, Modbus, Virtual Modem, and Serial Tunnel | Real COM, TCP Server, TCP Client, UDP, Serial Tunnel, and Virtual Modem | |

Note: * Available with DC power at customer's request. (SN0108AD / SN0116AD).

RJ-45 to Serial Adapters

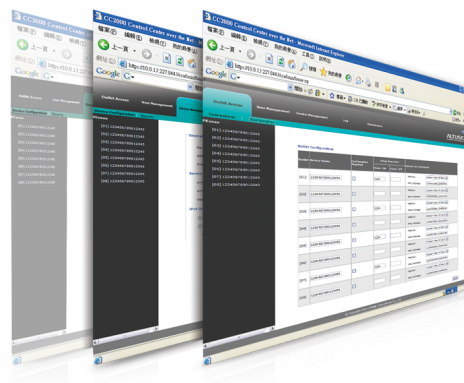
| Model | Connector | Interface |
|--------|-------------------|--------------|
| SA0141 | RJ-45-F to DB9-F | DTE to DTE |
| SA0142 | RJ-45-F to DB9-M | DTE to DCE |
| SA0143 | RJ-45-F to DB25-F | DTE to DTE |
| SA0144 | RJ-45-F to DB25-M | DTE to DCE |
| SA0145 | RJ-45-F to DB9-M | DTE to DTE |
| SA0146 | RJ-45-F to DB9-F | DTE to DCE |
| SA0147 | RJ-45-F to DB25-M | DTE to DTE |
| SA0148 | RJ-45-F to DB25-F | DTE to DCE |
| SA0150 | RJ-45-F to DB9-F | SN to PN0108 |



Energy & DCIM Management Software

eco Sensors

eco Sensors software gives you the tools to create a fully optimized, energy efficient data center. The software combines ATEN's cutting edge eco-technology with an intuitive GUI to deliver the best Data Center Infrastructure Management (DCIM) software on the market. ATEN's eco Sensors software not only gives you the means to assess, diagnose and estimate your energy saving potential, it provides advice on the best way to do it.



PDU Comparison

| | Energy PDU Basic 0U Rack PDU | eco PDU Intelligent 1U Rack PDU | | | | eco PDU Intelligent 0U Rack PDU | | | |
|-------------------------------|---------------------------------|------------------------------------|------------------|------------------|------------------|--|-----------------------------|------------------|-----------------------------|
| Model | PE1216 PE1324 | PE5108 PE5208 | PE6108 PE6208 | PE7108 PE7208 | PE8108 PE8208 | PE5216 PE5221T PE5224T PE5316 PE5324 PE5324T PE5342T | PE6216 PE6324 PE6324L | PE7216 PE7324 | PE8216 PE8324 PE8324T |
| Rack Space | 0U | 1U | 1U | 1U | 1U | 0U | 0U | 0U | 0U |
| Outlet | 16, 24 | 8 | 8 | 8 | 8 | 16, 21 24, 42 | 16, 24 | 16, 24 | 16, 24 |
| Outlet Switching | | | • | | • | | • | | • |
| Metering Capability | Bank Level via EC1000 | Bank Level | Bank Level | Outlet Level | Outlet Level | Bank Level | Bank Level | Outlet Level | Outlet Level |
| Environment Monitoring | Via EC1000 | • | • | • | • | • | • | • | • |
| eco Sensors Support | Via EC1000 | • | • | • | • | • | • | • | • |
| Proactive Overload Protection | | | • | | • | | • | | • |
| Door Sensor Support | | | | | | | | • | • |

Note: The PE8T series will be available in Q4 of 2017.

FAQ

Centralized Management Software

Q1: How many Nodes License do I need for ATEN CC2000?



A1: The number of target devices (such as server, network switch and hub) is the same as the number of Nodes Licenses.

| License Options with USB License Key | |
|--------------------------------------|--|
| CC2000-TN | 1 Primary, 32 Nodes |
| CC2000-XL | 1 Primary, 64 Nodes |
| CC2000-LE | 1 Primary, 128 Nodes |
| CC2000-LS | 1 Primary, 256 Nodes |
| CC2000-SD | 1 Primary, 1 Secondary, 512 Nodes |
| CC2000-PS | 1 Primary, 5 Secondary, 2048 Nodes |
| CC2000-PM | 1 Primary, 9 Secondary, 5120 Nodes |
| CC2000-PL | 1 Primary, 15 Secondary, Unlimited Nodes |
| CC2000-MX | 1 Primary, 31 Secondary, Unlimited Nodes |

| System Add-On License | |
|-----------------------|--------------------------------|
| CCS1 | Add-on 1 Secondary License |
| CCN1 | Add-on 1 Node License |
| CCN10 | Add-on 10 Nodes License |
| CCN50 | Add-on 50 Nodes License |
| CCN100 | Add-on 100 Nodes License |
| CCN500 | Add-on 500 Nodes License |
| CCN1000 | Add-on 1000 Nodes License |
| CCN10000 | Add-on 10000 Nodes License |
| CCNU | Add-on unlimited Nodes License |

Q2: What Blade Servers are supported by the CC2000?

...

A2: The CC2000 supports the most popular blade chassis in the market, including: IBM blade chassis, Dell blade chassis, HP blade chassis, and other generic blade chassis.



Q3: What virtual machines are supported by the CC2000?

...

A3: The CC2000 supports the most popular virtual machines in the market, including: VMware, Citrix and Microsoft Hyper-V.



KVM over IP Switch

Q1: How do I select the KVM over IP switch?



A1: First, you need to confirm the number of servers and remote active sessions. The number of servers will be the number of total KVM ports. Then, choose the corresponding number of remote active sessions. From a total cost of ownership, it is recommended to select the lowest configuration model to satisfy the user's needs, such as KN2132VA (2:32), KN1116V (1:16) or KN4164V (4:64). If we are able to define the tender specifications, KN2140VA (2:40) or KN4140VA (4:40) are recommended.

Q2: How do I choose the right KVM adapter cables?



A2: The number of servers is the same as the quantity of KVM adapter cables. You must choose the adapter cable depending on the interface of the target server. As well as, the special features required by the user, such as virtual media, smart card reader and audio etc. (Refer to the KVM Adapter Cable Compatibility List for more information)

Serial Console Server

Q1: How to estimate the number of serial devices in a data center?



A1: Network routers, switches, firewalls, UPS, and VPN servers are the most common serial devices in a data center. You can estimate the number of serial consoles based on those serial devices mentioned above. Additionally, if Cisco Data Center Multi-Tier Model is applied, you can estimate the number of serial devices separately by Core layer, Aggregation layer and Access layer, and plan the required volume of serial console ports separately for each layer.

Q2: How to select the type and volume of ATEN Serial Console Servers?



A2: System reliability is critical for data centers, we suggest selecting the models with dual power supplies and dual Ethernet ports, such as SN0108A, SN0116A, SN0132 and SN0148. For example, if there are 20 serial devices (Router, Switch and etc.) in the data center, SN0132 or SN0148 are recommended to fulfill this use case.

Q3: How to select the serial adapters (RJ-45 to DB9/DB25) for the various serial devices?



A3: ATEN provides SA series adapters to connect the serial console server to serial devices with different connector types (ex. DB9 or DB25). To select the suitable adapters, you need to confirm if their serial devices work as a DTE or DCE role in the serial communication. If you can use a straight cable to successfully connect the device to the SN series serial console server, the device works as a DCE role. If you need a NULL modem cable to connect the serial device, the serial device works as a DTE role. After the role of DTE/DCE of the serial device is confirmed, you can select the suitable adapter according to the connector type (9 pin or 25 pin, Male or Female) of your serial device.

Q4: Could we recommend KA7140 and KN series KVM over IP switches instead of SN series serial console server?



A4: Yes, if the serial devices are less than 6.

Energy Intelligence PDU

Q1: When is Energy Intelligence PDU required?



A1: Power stability and energy efficiency are critical for data center management. ATEN Energy Intelligent PDU series is a perfect solution by featuring Remote Power Outlet Control, Real-Time Monitoring, Proactive Overload Protection and Power Analysis Reports.

Q2: How to choose between eco PDU and Energy PDU?



A2: eco PDU is equipped with network feature for metering and switching the power distribution over the network. Energy PDU is a budget-friendly solution without the built-in network feature. If the over IP feature is required, the Energy Box can be added to provide the over IP capability to the Energy PDU.

Q3: How to estimate the scale of eco PDU for the entire data center?



A3: eco PDUs need to be deployed for all IT racks, power distribution cabinets (PDC), server racks, core network racks and storage machine racks etc. planned for the data center that uses AC power supply. If the data center uses A/B type power supply, then two power strips are required for each rack.

Q4: How do I choose the eco PDU model?



A4: eco PDU can basically be divided into 1U and 0U. 1U is designed for level installation. 8-outlet is the major specification of 1U eco PDU which is commonly adopted by the market. 0U is designed for vertical installation. The major specification of 0U is 24-outlet. When the total power consumption of the rack cabinet is over 10KW, it is suggested to deploy two 30A eco PDUs at the back of the rack cabinet.

According to different countries, NEMA and IEC socket configuration are available for selection. Firstly, confirm the power P designed for the IT rack; the input current of eco PDUs $A = P \div 220V$. Next, confirm the number and type of IT rack equipment. If large power (for example, $\geq 2000W$) IT equipment such as blade servers or small machines are deployed in the racks, then intelligent power strips with C19 output port must be selected. The number of output ports per power strip must be greater than the number of IT equipment planned to be deployed for the rack. If not, please contact ATEN solution division of the product department for technical support.



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About ATEN

ATEN International Co., Ltd., established in 1979, is the leading provider of IT connectivity and management solutions. Offering integrated KVM, Professional Audiovisual, and Intelligent Power solutions, ATEN products connect, manage, and optimize electronics in corporate, government, industrial, educational, and retail environments. ATEN has 500+ issued international patents and a global R&D team that produces a constant stream of innovative solutions, resulting in a comprehensive portfolio of products available worldwide.

