DATA SHEET

Network Access Control (NAC)

End-to-end security and superior user experience

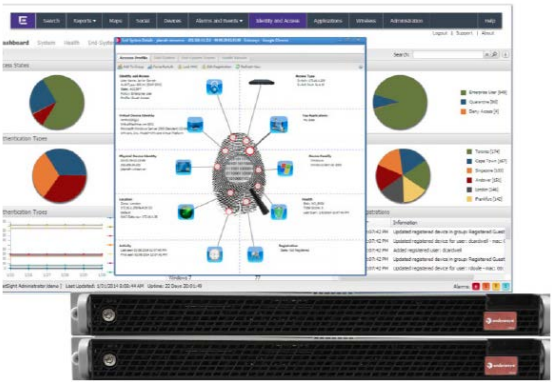
NAC HIGHLIGHTS

BUSINESS ALIGNMENT

- Protect corporate data by proactively preventing unauthorized users, compromised endpoints, and other vulnerable systems from network access
- Effectively balance security and availability for users, contractors and guests
- Proactively control the security posture of all devices, including employee owned (BYOD), on the network
- Efficiently address regulatory compliance requirements
- Cost-efficient protection for enterprise remote offices

OPERATIONAL EFFICIENCY

- Leverage existing assessment servers, authentication servers, software agents and identity sources avoiding forklift upgrades
- Enable business staff to easily sponsor guests and validate guest registration
- Protect physical and virtualized environments with flexible deployment -physical and virtual appliances



- Complete solution featuring both physical and virtual appliances
- Range of policy configuration options enables a uniquely fine-grained network control and flexibility
- Comprehensive dashboard reporting and advanced notification engine
- Managed guest access control with sponsorship

Product Overview

Extreme Networks Network Access Control (NAC) is a complete standards-based, multi-vendor interoperable pre-connect and post-connect Network Access Control solution for wired and wireless LAN and VPN users. Using Extreme Networks **Identity & Access** appliances and/or **Identity & Access Virtual Appliance** with **NetSight NAC** management configuration and reporting software, IT administrators can deploy a leading-edge NAC solution to ensure only the right users have access to the right information from the right place at the right time. Extreme Networks NAC is tightly integrated with the Extreme Networks Intrusion Prevention System (IPS) and Extreme Networks Security Information and Event Manager (SIEM) and Extreme Networks NetSight Automated Security Manager to deliver best-in-class post-connect access control.

The Extreme Networks NAC advantage is business-oriented visibility and control over individual users and applications in multi-vendor infrastructures. NAC protects existing infrastructure investments since it does not require the deployment of new switching hardware or that agents be installed on all end systems. Extreme Networks NAC performs multi-user, multi-method authentication, vulnerability assessment and assisted remediation. It offers the flexibility to choose whether or not to re-strict access for guests/contractors to public Internet services only—and how to handle authenticated internal users/devices that do not pass the security posture assessment. Businesses have the flexibility to balance user productivity and security. The NAC assessment warning capability alerts users that they need to upgrade their system but can allow a grace period before they are quarantined.

SECURITY

- Enable the strongest security with fine grained access control based on user, device, time, location and authentication type
- Assess end systems of any type for vulnerabilities or threats with agent-based or agent-less assessment
- Automate endpoint isolation, quarantine, and remediation, plus ongoing threat analysis, prevention, and containment

SERVICE AND SUPPORT

- Industry-leading first call resolution rates and customer satisfaction rates
- Personalized services, including site surveys, network design, installation and training

Extreme Networks NAC policies permit, deny, prioritize, rate-limit, tag, re-direct, and audit network traffic based on user identity, time and location, device type, and other environmental variables. Extreme Networks NAC supports RFC 3580 port and VLAN-based quarantine for Extreme Networks and third-party switches, plus more powerful isolation policies (which prevent compromised endpoints from launching attacks while in the quarantine state) on Extreme Networks switches. Extreme Networks NAC is adapt-able to any device using RADIUS for authorization with configurable RADIUS attributes such as Login-LAT or Filter ID. Enterprises can apply different policies depending on the RADIUS reject attribute. For example a different policy may be applied to user with an expired password than to a user who did not have an account. The solution offers unmatched interoperability, provides the widest number of authentication options, and supports Layer 2, Layer 3 and VPN access technologies.

Extreme Networks NAC enables the homogeneous configuration of policies across multiple switch and wireless access point vendors. This capability significantly reduces the burden of policy lifecycle management and eases NAC deployment in wired and wireless heterogeneous infrastructures

With Extreme Networks NAC's flexibility, organizations have phased deployment options enabling immediate network protection and business value. For example, an organization can start with simple endpoint detection and location directory information, then add authentication/authorization and/ or assessment, and then automate remediation.

Fine-Grained Configuration Options

Extreme Networks NAC configuration options provide an unparalleled range of choices for fine grained network control. These configuration options include time, location, authentication types, device and OS type, and end system and user groups. For example, enterprises can write and enforce policies that grant a precise level of network access based on the type of system connecting, an employee's role in the organization, the location of a user at the time the user is connecting, or the time of day. Device and OS type rules are particularly important in environments where users bring their own devices (BYOD). The enterprise can give these devices network access that is different than the access permitted corporate devices.

An enterprise's network is more secure with tighter control over who gains access, when and from what location. The granularity of these configuration options also provides flexibility for efficient deployment in large heterogeneous infrastructures.

Guest Account Services Included

Extreme Networks NAC includes automated guest registration access control features to assure secure guest networking without burdening IT staff. NAC capabilities automate or delegate guest access management. Features such as expiration and account validity time control the guest account without any IT involvement. Extreme Networks NAC provides a self-registration portal for users to register multiple devices themselves offers advanced sponsorship capabilities such as email sponsorship and a simple portal for sponsors to use to validate guest registration. Registration capabilities are also available for automatic contact verification through SMS or email, secure wireless guest access providing access to the secured wireless network without an 802.1X certificate or involving any IT intervention. LDAP integration allows dynamic role assignment for authenticated registration. Authenticated registration allows enterprise network users to register devices and receive the proper role for non-802.1X capable devices. Multiple

registration groups allow administrators to give different levels of access to different types of guests. Location based registration allows guest access to be limited to specific connection points (SSID, port, switch) or group of connection points.

Identity-Aware Networking

In an identity-aware network a user's capabilities are controlled based on the user's identity and the access policies attributed to the user. Extreme Networks NAC provides user identity functionality including discovery, authentication and role based access controls. Extreme Networks NAC integrates with identity sources such as Siemens Enterprise Communications HiPath DirX Identity and Microsoft Active Directory leveraging and extending the organization's existing directory investments. Users are managed centrally in the identity system for the network and all connected applications. The process of managing the user's lifecycle (e.g. enrollment, role changes, termination) can be automated and linked to other business processes with LDAP and RADIUS integration. Users can be automatically added or deleted when they join or leave the organization. Extreme Networks identity-aware networking capabilities provide stronger network security and lower operational cost.

Endpoint Baselining and Monitoring

All end systems in the network infrastructure should be incorporated in the network access control system for control to be most effective. Extreme Networks NAC provides agent-based or agent-less endpoint assessment capabilities to determine the security posture of connecting devices. Extreme Networks NAC, aligned with industry standards, works with multiple assessment servers, authentication servers and security software agents to match the needs of organizations who may have existing assessment technology. The agentless capability does not require the installation of a software security agent on the end system and is typically used for end systems such as guest PCs, IP phones, IP cameras or printers. The Extreme Networks agent-less assessment scans for operating system and application vulnerabilities. The agent-based capability requires the installation of a software agent on the end system. The endpoint agent scans for anti-virus status, firewall status, operating system patches and peer-to-peer file sharing applications. The agent can look for any process or registry entry and automatically remediate. This combination of agent and agent-less capabilities in the Extreme Networks NAC solution enables more efficient management and reporting.

Notifications and Reporting

The advanced notification engine in Extreme Networks NAC provides comprehensive functionality and integrates with the workflows of other alerting tools already in place. Enterprises can leverage and extend their existing automated processes to further reduce operational costs. Notifications occur for end-system additions or state changes, guest registration, any custom field change, and end-system health results. Notification is delivered through traps, syslog, email or web service. The notification engine has the ability to run a program triggered by a notification event. For example, integrated with the help desk application, NAC notification can be used to automatically map changes in the infrastructure to actions.

End-system reporting is simple with Extreme Networks NAC web-based end-system data views. NAC provides easy-to-use dashboards and detailed views of the health of the end systems attached or trying to attach to the network. Analysts responsible for monitoring endsystem compliance can easily tailor the views to present the information in their preferred format. The reports can be generated as PDF files.

In addition, the end-system monitoring and management plays a key role in understanding the network. It allows administrators to understand the "who, what, when, where, and how" for the end-systems on the network providing better visibility, troubleshooting, and security. Now, tracking end-systems to find all information about them, including the NetFlow data is found by simply searching for a username, hostname, or address.

Integrations

The Extreme Networks OneFabric Connect API provides a simple, open, programmable and centrally managed way to implement Software Defined Networking (SDN) for any network. With OneFabric Connect, business applications can be directly controlled from OneFabric Control Center Advanced and managed via NetSight. The result is a complete SDN solution including integrations with the NAC solution such as MDM integrations with vendors such as Airwatch, Mobile Iron, JAMF Software, and more, as well as datacenter management, integrations with iBoss web filters and many other products. More information is available in the OneFabric Connect API Datasheet.

NetSight NAC Management

NetSight NAC Management software provides secure, policy-based NAC management. From one centralized location, IT staff can configure and control the NAC solution, simplifying deployment and ongoing administration. NAC management also aggregates network connectivity and vulnerability statistics, audits network access activities, and provides detailed reports on vulnerabilities in the network. Management is simplified with a hierarchical structure that places end systems into administrative zones.

NAC management provides additional value through its integration with other Extreme Networks NetSight capabilities and Extreme Networks security products. For example, NAC management seamlessly integrates with NetSight policy management to enable "one click" enforcement of role-based access controls. The IP-to-ID Mapping feature binds together the User, Hostname, IP address, MAC and location (switch and

port or wireless AP and SSID) along with timestamps for each endpoint—a key requirement for auditing and forensics. IP-to-ID Mapping is also used by NetSight Automated Security Manager to implement location-independent distributed intrusion prevention and by Extreme Networks Security Information and Event Manager (SIEM) or other third party SIEM/IPS solutions to pinpoint the source of a threat. NAC management in NetSight provides centralized visibility and highly efficient anytime, anywhere control of enterprise wired and wireless network resources. OneView, the unified control interface, enables simplified troubleshooting, help desk support tasks, problem solving and reporting. Users of any of the popular mobile devices can use their smart phone or tablet to access NAC end-system view, system location and tracking information and much more, anytime anywhere.

Extreme Networks Identity & Access Appliance

The Identity & Access appliance controls endpoint authentication, security posture assessment and network authorization. For authentication services, the Identity & Access appliance acts as a RADIUS proxy, or RADIUS server for MAC Authentication, which communicates with the organization's RADIUS authentication services (e.g. interfaces with Microsoft Active Directory or another LDAP-based directory service). The Identity & Access appliance supports 802.1X (Extensible Authentication Protocol), MAC, Web-based and Kerberos Snooping (with certain restrictions) authentication. For endpoint assessment, the Identity & Access appliance connects to multiple security assessment servers.

For authorization services, the Identity & Access appliance communicates RADIUS attributes to the authenticating switch. This allows the switch to dynamically authorize and allocate network resources to the connecting endpoint based on authentication and assessment results.

The Identity & Access appliance also stores NAC configuration information and the physical location of each endpoint. It easily scales to support redundancy and large NAC deployments. Identity & Access appliance models are available to meet the needs of different-sized implementations.

Assessment is separately licensed and includes both agent-based and agent-less assessment.

Extreme Networks Identity & Access Virtual Appliance

The Identity & Access Virtual Appliance provides all the powerful endpoint authentication, security posture assessment and network authorization capabilities built on VMware®. Deploying Identity & Access Virtual Appliance, enterprises gain all the benefits of net-work access control with the advantages of a virtual environment — cost savings from using existing hardware and reduced time to value. Available with different sizing options for central locations as well as remote sites.

Assessment for NAC Virtual Appliance is separately licensed and includes both agent-based and agent-less assessment.

Additional Features

- "Bring your own device" (BYOD) control features including mobile device registration and session-based user login.
- IPv6 support for NAC implementation in networks with IPv6 end systems.
- Proven interoperability with Microsoft NAP and Trusted Computing Group TNC.
- Automatic endpoint discovery and location tracking by identifying new MAC addresses, new IP addresses, new 802.1X / Web-based authentication sessions, or Kerberos or RADIUS request from access switches.
- Support for Layer 2 deployment modes and support for all five NAC deployment models: intelligent wired edge, intelligent wireless edge, non-intelligent wired edge, non-intelligent wire-less edge, and VPN.
- Extreme Networks NAC provides VPN support and, with an Extreme Networks SSA switch in distribution, provides more flexibility through policy.
- Support for external RADIUS Load Balancers allows the external load balancer to evenly distribute the load for servicing authentication requests and configuring switches across a group of NAC Appliances.
- Management options can be tailored to existing network management schemes and security requirements.
- Support for multiple RADIUS and LDAP server groups allows administrators to identify the server to which a request is directed.
- Macintosh agent support for agent-based assessment.
- Open XML API's support integration with IT workflows for automated streamlined operations
- Web-service based NAC API simplifies integration with third party applications.
- 1 + 1 Redundancy for Layer 2 deployment modes: provides high-availability and eliminates the Identity & Access appliance as a single point of failure
- Risk level configuration allows flexibility in determining threat presented by the end system. Fine grained control allows NAC administrator to define High Risk, Medium Risk, and Low Risk thresholds based on local security policies and concerns.

- Extreme Networks NAC is upgradable, allowing assessment to be integrated onto a single box with the other NAC functions. The appliances are capable of supporting both network-based and/or agent-based assessment.

System Requirements & Specifications

EXTREME NETWORKS IDENTITY & ACCESS APPLIANCES

Physical Specifications
Height: 1.75" (4.45 cm) - 1U
Length: 27.95" (70.9 cm)
Width 16.93" (43 cm)
Weight 31.8 lbs (14.4 kg)

Power
Wattage: 750 Watt (max), each power supply
Voltage:110/240 VAC;
Frequency 47- 63Hz

Environmental Specifications
Operating Temperature: 10° to 35°C (50° to 95°F)
Storage Temperature: -40° to 70°C (-40° to 158°F)
Operating Humidity: 5% to 90% (noncondensing)

Standards Compliance
Regulatory/Safety:
UL60950 - CSA 60950 (USA/Canada)
EN60950 (Europe)
IEC60950 (International)
CB Certificate & Report, IEC60950
GS Certification (Germany)
GOST R 50377-92 - Certification (Russia)
Ukraine Certification (Ukraine)
CE - Low Voltage Directive
2006/95/EC (Europe)
IRAM Certification (Argentina)

Emissions/Immunity:
FCC/ICES-003 - Emissions (USA/Canada)
CISPR 22 - Emissions (International)
EN55022 - Emissions (Europe)
EN55024 - Immunity (Europe)
EN61000-3-2 - Harmonics (Europe)
EN61000-3-3 - Voltage Flicker (Europe)
CE - EMC Directive 2004/108 EC (Europe)
VCCI Emissions (Japan)
AS/NZS 3548 Emissions (Australia/New Zealand)
BSMI CNS13438 Emissions (Taiwan)
GOST R 29216-91 Emissions (Russia)
GOST R 50628-95 Immunity (Russia)
Ukraine Certification (Ukraine)
KC Certification (Korea)

Extreme Networks Identity & Access Virtual Appliance

A virtual appliance is a software image that runs on a virtual machine. The Identity & Access Virtual Appliance is packaged in the .OVA file format defined by VMware and must be deployed on a VMware ESXTM 4.0, 4.1, 5.0, or 5.1 server or ESXiTM 4.0, 4.1, 5.0, or 5.1 server with a vSphere(TM) 4.0, 4.1, 5.0, or 5.1 client.

Virtual appliance requires 12 GB of memory, four CPUs, two network adapters, and 40 GB of thick-provisioned hard drive space.

NAC Assessment Agent OS Requirements

Supported operating systems for end systems connecting to the network through an Extreme Networks NAC deployment that is implementing Extreme Networks agent-based assessment.

- Windows 2000
- Windows 2003
- Windows 2008
- Windows XP
- Windows Vista
- Windows 7
- Windows 8
- Windows 8.1
- Mac OS X – Tiger, Leopard, Snow Leopard, Lion, Mountain Lion, and Mavericks

Certain assessment tests require the Windows Action Center (previously known as Windows Security Center) which is supported on Windows XP SP2+, Windows Vista, Windows 7, 8, and 8.1 operating systems.

NetSight NAC Management

Extreme Networks NetSight provides the management capabilities for NAC. A single NetSight server with NAC will support: 100,000 end-systems; 50,000 end-system registrations; 12,000 end-systems with agent-based assessment; 35 appliances.

NETSIGHT SERVER AND CLIENT OS REQUIREMENTS

These are the operating system requirements for both the NetSight Server and remote NetSight client machines.

Windows (qualified on the English version of the operating systems)
Windows Server® 2003 w/ Service Pack 2 (64-bit & 32-bit)
Windows XP® w/ Service Pack 3 (32-bit only)

Windows Server® 2008 Enterprise & R2 (64-bit & 32-bit)
Windows Server 2012 Enterprise (64-bit only)
Windows® 7 (64-bit & 32-bit)
Windows® 8 & 8.1 (64-bit & 32-bit)

Linux
Red Hat Enterprise Linux WS and ES v5 & v6 (64-bit & 32-bit)
SuSE Linux versions 10, 11, and 12.3 (64-bit & 32-bit)
Ubuntu 11.10 Desktop version (32-bit , remote NetSight client only)
Ubuntu 11.10, 12.04, and 13.04 (64-bit)

Mac OS X® 64-bit (remote NetSight client only) Leopard®, Snow Leopard®, Lion®, Mountain Lion®,, or Mavericks®

VMware® (64-bit NetSight Virtual Appliance) VMware ESXi™ 4.0, 4.1, 5.0, 5.1, or 5.5 server

NetSight Server and Client Hardware Requirements
These are the hardware requirements for the NetSight Server and NetSight client machines:

NetSight Server
Minimum - 32-bit Windows 7; Dual-Core 2.4 GHz Processor, 2 GB RAM, 10 GB Free Disk Space

Medium - 64-bit Desktop, Windows 2008 R2 or Linux; Quad-Core 2.66 GHz Processor, 8 GB RAM, 40 GB Free Disk Space

Large - 64-bit Server Linux; Dual Quad-Core Intel® Xeon CPU E5530 2.4 GHz Processors,12 GB RAM, 100 GB Free Disk Space

NetSight Client

Recommended-Dual-Core2.4 GHz Processor,2 GB RAM Free Disk Space-100MB (User's home directory requires50MB for file storage)

Java Runtime Environment (JRE) 6 or 7 (also referred to as 1.6 or 1.7)

Supported Web Browsers:

- Internet Explorer version 8, 9, and 10
- Mozilla Firefox 23 and 24
- Google Chrome 29.x

Ordering Information

IDENTITY & ACCESS APPLIANCES

PART NUMBER	DESCRIPTION
IA-A-20	Identity & Access appliance supports 3,000 to 6,000 end-systems based on options. HW-only appliance (IA-ES license required)
IA-A-300	Identity & Access appliance supports 6,000 to 12,000 end-systems based on options. HW-only appliance (IA-ES license required)
Virtual Appliances	Virtual appliances are included in NetSight Advanced (IA-ES license required)

NETSIGHT NAC MANAGEMENT

Extreme Networks NetSight provides cost-efficient choices enabling enterprises to address their priorities, optimize their budget use and demonstrate quick time-to-value. NetSight models range from a cost-efficient entry solution to full functionality for device intensive enterprises. Flexible upgrade options support deployment growth.

The three NetSight models are:

NMS-BASE-XX which includes basic wired/wireless management features as well as inventory management, policy management and OneViewTM Basic (device management, alarm management and administration). 3 remote clients are included in addition to unrestricted OneViewTM connections.

NMS-XX which includes basic wired/wireless management features as well as inventory management, policy management, NAC management, automated security management, mobile management, and the full OneViewTM interface. 25 remote clients are included in addition to unrestricted OneViewTM connections.

NMS-ADV-XX which includes basic wired/wireless management features as well as inventory management, policy management, NAC management, automated security management, mobile management, and the full OneViewTM interface. In addition, NetSight Advanced includes advanced wireless management, the OneFabric Connect API, ability to install on a primary server, redundant server and lab server, a 500 end-system license, and virtual NAC appliances for full NAC deployment flexibility (require end-system licenses if needed in addition to the 500 included). 25 remote clients are included in addition to unrestricted OneViewTM connections.

LICENSES

PART NUMBER	DESCRIPTION
IA-ES-1K	Identity & Access 1,000 end-system license for use with Identity & Access appliances
IA-ES-3K	Identity & Access 3,000 end-system license for use with Identity & Access appliances
IA-ES-12K	Identity & Access 12,000 end-system license for use with Identity & Access appliances)
IA-PA-3K	Identity & Access Posture Assessment license for 3,000 end-systems (includes both agent-based & agent-less assessment)
IA-PA-12K	Identity & Access Posture Assessment license for 12,000 end-systems (includes both agent-based & agent-less assessment)

NETSIGHT SIZING CHART

# MANAGED DEVICES	# APS	MODEL NUMBERS		
5	50	NMS-ADV-5	NMS-5	
10	100	NMS-ADV-10	NMS-10	NMS-BASE-10
25	250	NMS-ADV-25	NMS-25	NMS-BASE-25
50	500	NMS-ADV-50	NMS-50	NMS-BASE-50
100	1,000	NMS-ADV-100	NMS-100	NMS-BASE-100
250	2,500	NMS-ADV-250	NMS-250	NMS-BASE-250
500	5,000	NMS-ADV-500	NMS-500	NMS-BASE-500
Unrestricted	Unrestricted	NMS-ADV-U	NMS-U	NMS-BASE-U

Warranty

As a customer-centric company, Extreme Networks is committed to providing quality products and solutions. In the event that one of our products fails due to a defect, we have developed a comprehensive warranty that protects you and provides a simple way to get your product repaired or media replaced as soon as possible.

The NetSight appliance comes with a one year warranty against manufacturing defects. Software warranties are ninety (90) days and cover defects in media only. For full warranty terms and conditions please go to:
http://www.extremenetworks.com/support/warranty.aspx

Service and Support

Extreme Networks provides comprehensive service offerings that range from Professional Services to design, deploy and optimize customer networks, customized technical training, to service and support tailored to individual customer needs. Please contact your Extreme Networks account executive for more information about Extreme Networks Service and Support.

Additional Information

For additional technical information on NetSight, please go to:
http://www.extremenetworks.com/products/visibility-control/index.aspx

Extreme networks

http://www.ExtremeNetworks.com/contact / Phone +1-408-579-2800