



“There is nothing more important than our customers”



BYOD and Maintaining Control of Your Network

A Siemens Enterprise Communications Company

Agenda / Topics...

- Introductions and Overview
- How official BYOD programs can lower IT costs, increase student and staff satisfaction and contribute to 1:1 educational computing.
- How districts can maintain CIPA compliance and boundary control in the face of 3G Internet access and personal and external WiFi hotspots.
- How to design a security architecture that enables device-flexibility.
- How network administrators can enforce registration, control and differentiation of services by user, device and location.

Global Provider of Networking Solutions

Enterasys. 28 Year Heritage of Products & Services Excellence



2008-Present

- Premier provider of enterprise communications solutions (applications, networking, services, and voice)
- \$3 Billion (US) revenue and profitable
- 10,000 employees servicing more than 90% of Fortune 100 and 75% of Fortune 500 customers in 90 countries
- #3 Global VoIP & #1 managed services revenues

1983-1999



- Multi-layer switching pioneer
- Industry's 1st switching embedded security
- Open standards principal contributor
- Significant technology patent portfolio

1999-Present

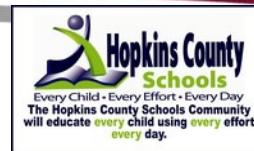


- Wired & wireless enterprise networking infrastructure and security solutions provider
- 1,000 employees servicing 5,000 enterprise customers in 70 countries
- Secure Networks™ pioneer of automation, visibility and control
- Industry-best customer support

Enterasys Supports Education Nationwide



Bethel School District
SPANAWAY, WASHINGTON



ENFIELD PUBLIC SCHOOLS
27 Shaker Road, Enfield, CT 06082
Tel: (860) 253-6557 Fax: (860) 253-6510



Twin Rivers
UNIFIED SCHOOL DISTRICT



**Lewis-Palmer
School Dist #38**



*Over 500 Districts
and 5000 Schools*



**Biloxi
School**



**Okaloosa County School District
Best in Florida**



Over 500 School Districts spanning over 5000 Schools

1

Enterasys has active K-12 customers in 48 states

2

53% of Enterasys business comes from Education

3

Enterasys has over 2 million data ports in K12

4

Enterasys has grown in K-12 40% in year over year

5

Customer support rating in 97.5% - National Average is 84%.

Why BYOD / 1-1 in Education is Important



- 24-7 Learning Device
- Enriched Streaming Media
- Distant Learning
- Cloud Based Applications
- Online Testing
- Student Engagement

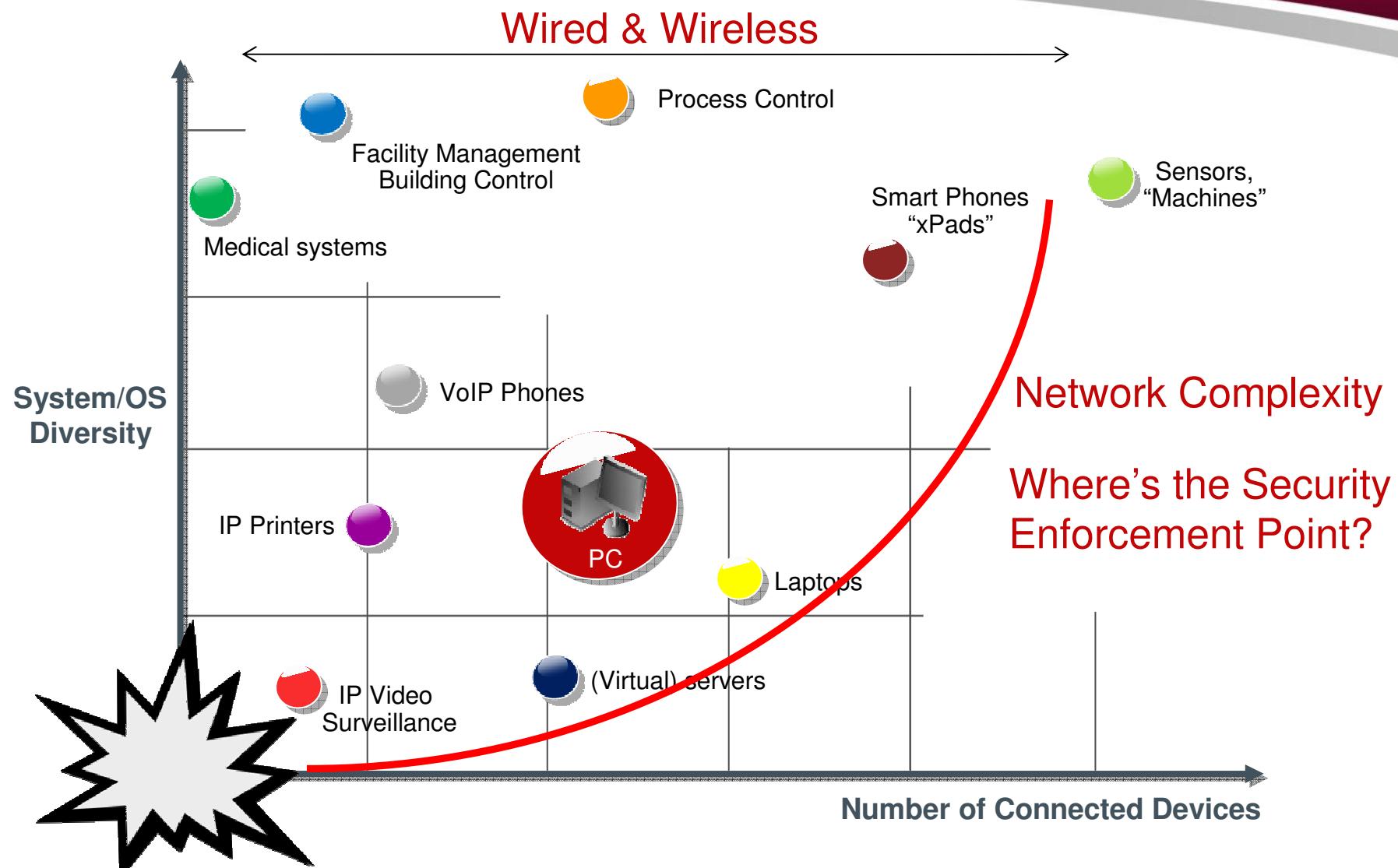


Testing Online

Let us demonstrate to you how online testing can make your testing program more secure, accessible, and efficient.



Managing the Endsystem Explosion



Concerns facing IT departments in a 1-1 / BYOD world...

- Management
- Cost
- Compliance
- Security
- Sustainability

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The Instructional Fear Factor

- BYOD enshrines inequity
- BYOD increases teacher anxiety
- BYOD contributes to the growing narrative that education is not worthy of investment
- BYOD simplistically creates false equivalencies between any object that happens to use electricity
- BYOD creates an uncontrollable and unsecure environment

You provide the Internet – No One Else Should



**Free Wi-Fi
for everyone.**

Now at Starbucks.



Traditional Deployments of Wireless are No Longer Acceptable for Education



Traditional Wireless Deployments where 1 AP covers 4 Classrooms

Capacity Planning vs Coverage Planning

Load Balancing, Fail-Over, etc...

Providing Multiple SSIDs

Faculty, Student, Guest, Admin, VoIP, etc...

Traditional Guest Access Services

Hardware Based Controllers and Solutions

One SSID – Multiple Topologies – Multiple Solutions – No VLANS...



- ***Student – District Device – Classroom*** = Access to district network and Internet at line rate speeds
- ***Student – Personally Owned Device – Classroom*** = Access to Internet at line rate speeds but not the production network, after registering the device to their username for tracking purposes
- ***Wireless VoIP Handset*** = Correct QOS and COS for high priority voice services
- ***Guest – Common Area*** = Internet Access after being sponsored by a district employee and being rate limited to 128k.
- ***Student with Play Station Portable*** = No Access
- ***Guest – Classroom*** = No Access
- ***Admin – District Device*** = Full Access

Registration/Web Authentication Process



There's nothing more important than our customers.

Welcome to the Enterprise Registration Center



You have been denied network access because your device is not currently registered to the network.

Please use the following button below to register your device and obtain network access. Note that you **must** have valid login credentials to register on the network.

Network Login

If you have been issued credentials for this network, please login below.

*User Name:
*Password:

Register as a Guest

If you have not been issued credentials for this network, please register your device.

Powered by



Sample City, Example State xxxxxx | xxx.xxx.xxxx | ©2008 Example Enterprise [About Us](#) | [Contact Us](#)



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Guest Authentication/Registration



Welcome to the network.
7-Day Forecast for Latitude 42.95°N and Longitude 71.26°W

Enterprise Registration Center

Welcome to the Enterprise Registration Center

You have been **denied** network access because this device is not registered to the network.

To obtain network access, you **must** complete registration using the form below.

By registering to the network, you are **agreeing** to the terms and conditions explained in the [Enterprise Network and Computer Acceptable-Use Policy](#).

First Name*
Middle Name
Last Name*
E-Mail Address*

Complete Registration

Please press the Complete Registration button only once.

Access Denied!

There's nothing more important than our customers.

Welcome to the Enterprise Registration Center

You have been **denied** network access because this device is not registered to the network.

To obtain network access, you **must** complete registration using the form below.

By registering to the network, you are **agreeing** to the terms and conditions explained in the [Enterprise Network and Computer Acceptable-Use Policy](#).

A sponsor with valid credentials is **required** for you to register to the network.

Introduction

This Acceptable Use Policy (AUP) sets forth the principles that govern the use by customers of the Web-based products and services provided by Company. This AUP is designed to help protect our customers, and the Internet community, from irresponsible, abusive or illegal activities.

General Violations

This AUP identifies the actions that Company considers to be Prohibited Actions (meaning those actions which create denial of access or impediment of service).

Prohibited Actions: General Terms and Conditions of Use

*Sponsor E-Mail:
*First Name:
Middle Name:
*Last Name:
*E-Mail Address:
 *I agree to the Acceptable Use Policy

Complete Registration

xxxx Example Street, Example City, Example State xxxxxx | xxx.xxxx.xxxx | ©2008 Example Enterprise [About Us](#) | [Contact Us](#)

Powered by **Enterasys**
Secure Networks®

Sponsor Notification



Sponsorship Request - Message (Plain Text)

This might be a phishing message and is potentially unsafe. Links and other functionality have been disabled. Click here to enable functionality (not recommended).

From: NAC - Automated Email [Enterasys.NAC@cse-ets.com] Sent: Mon 4/20/2009 8:59 AM
To: Stinson, Eric; Marcotte, Tyler
Cc:
Subject: Sponsorship Request

User: Joe Smith (Guest-00-40-05-0A-A6-31)
Email: jsmth@enterasys.com
Has requested sponsorship to obtain network access.

Go to <http://192.168.200.36/sponsor.php> to Approve/Deny this request.

Authenticated Registration & Web Authentication



- **Users with username and password can register their devices or perform session-based authentication**
- **Self registration allows users to register devices without web browsers**
- **Authenticated registration provides**
 - Accountability
 - User responsible for all activity from their end system
 - Tracking
 - Bind end system to user even without 802.1X
 - Control
 - Assign the appropriate role based on user role, end system type, etc.

The image displays two screenshots of the Enterasys Enterprise Registration Center. The top screenshot shows the 'Access Denied!' page, which informs the user that they have been denied network access because their device is not registered. It includes a 'Network Login' form and a 'Register as a Guest' option. The bottom screenshot shows the 'Devices' page under 'Registration System Administration', where a new device can be added with fields for User Name, MAC Address, and Description, along with a 'Submit' button.

Stolen Devices?



Add End-System Group

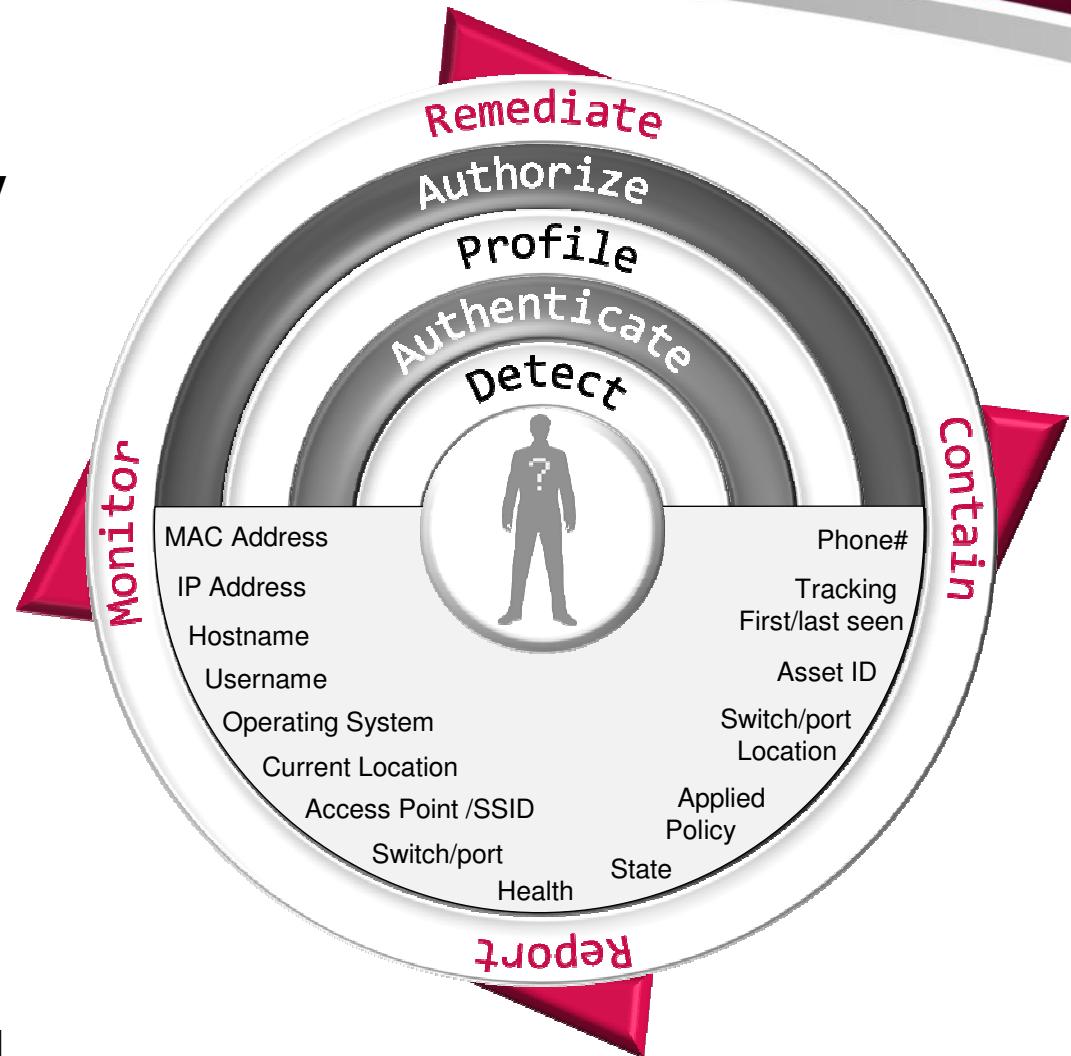
End-System Group							
Name:	Stolen Laptops						
Description:	Stolen devices						
Type:	MAC						
<input type="checkbox"/> Automatic	MAC IP Hostname						
<table border="1"><thead><tr><th>MAC Based Values</th><th>Description</th><th>Possible MACs Matching Mask</th></tr></thead><tbody><tr><td colspan="3"> </td></tr></tbody></table>		MAC Based Values	Description	Possible MACs Matching Mask			
MAC Based Values	Description	Possible MACs Matching Mask					
<p>OK Cancel</p>							

- **Expanding on the detection capabilities of Enterasys' NAC solution – Authentication Gateway**

- Available since 2005
- Successfully deployed in 1000's of networks

- **Authorization, policy enforcement based on**

- End-System information
- User information
- Location (and tracking history)
- Time
- Status & Health
- Authentication, Identification method



Visibility and Control

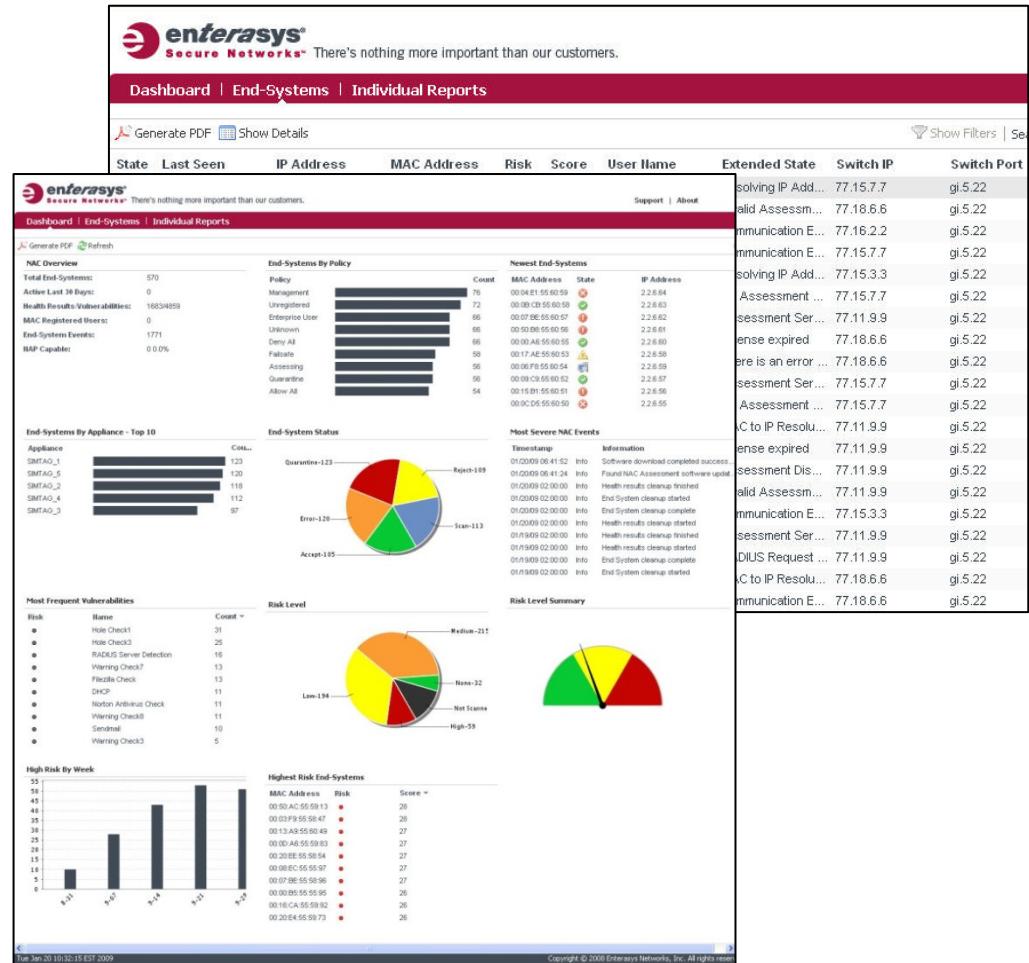


■ Automatic end system inventory and control

- Connected port
- Assigned role
- User identity
- Last assessment
- Security status
- Overall 45 attributes per end system

■ NAC Reporting

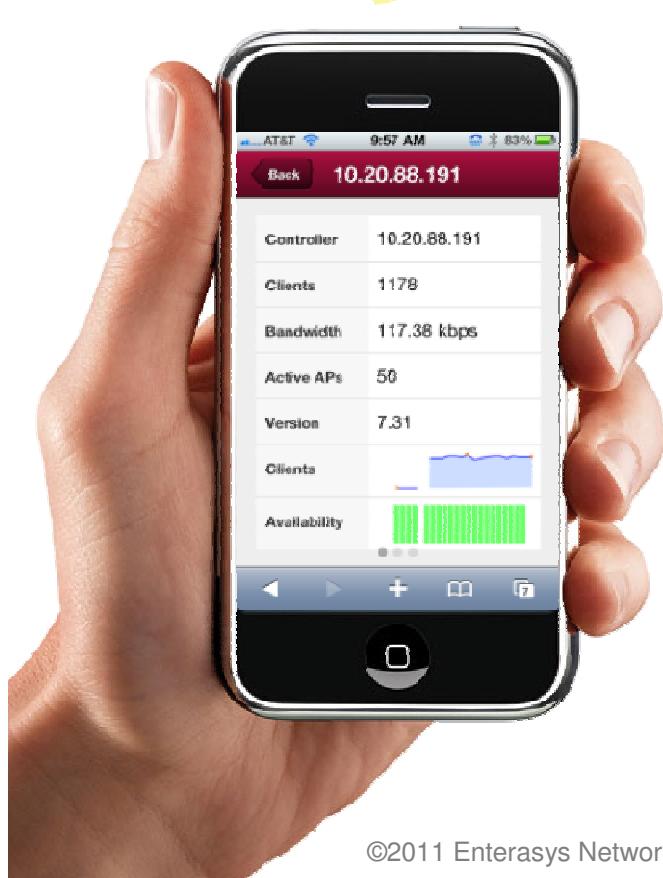
- Risk Level
- Highest Risk End Systems
- Newest End Systems
- Most Frequent Vulnerabilities
- End Systems by Vulnerability



Mobile Management



enterasys
nms Mobile



The screenshots show the following views:

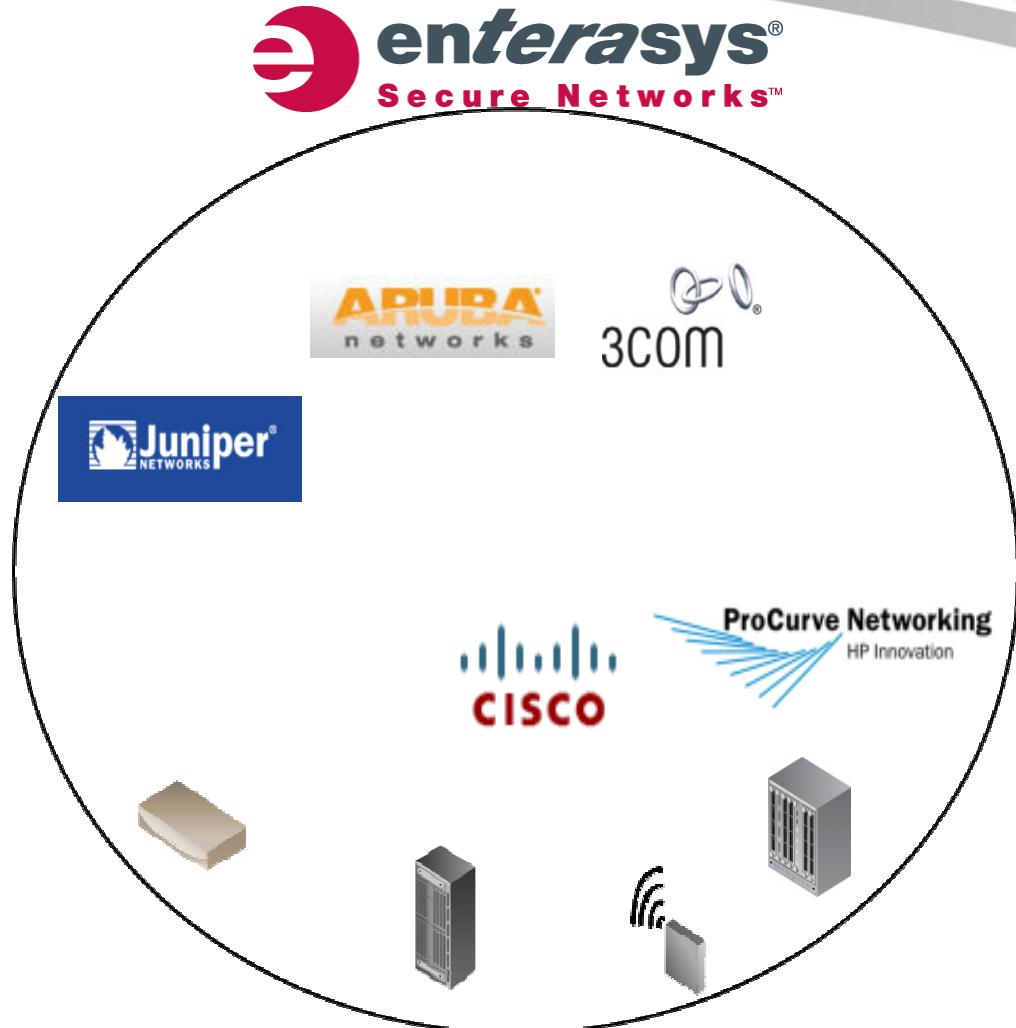
- NMS Mobile:** A menu with icons for Compass, NAC, Wireless, and General.
- Back End-System Search:** A search bar with "Wilson" entered, showing results for 192.168.12.113, 192.168.16.122, 192.168.18.101, and 192.168.19.166. Buttons include SEARCH, LOCATE, ANALYZE, and REPORT.
- Clients:** A list of clients with their IP addresses, last seen times, names, and device types. A line graph shows client count over time.
- AP:** A detailed view for AP3610-C20-03 showing current, max, and average values for clients, wired, and wireless traffic.

- Any time, anywhere wired, wireless and NAC visibility and control
- Optimized for personal mobile devices including iPad®, iPhone® & Android®
- Centralized NMS views are easily available just like all your favorite smart phone or tablet apps
 - Network Access Control end-system view and system location and tracking
 - Wireless dashboards and detailed views of Controllers & APs
 - NMS Compass
 - Event logs

Interoperability and Deployment



- **Implementation for any network without network upgrades**
 - Out of band appliance or VM
 - Inline appliance (HW accelerated)
 - Centralized NMS
- **Standards-based – Integrates with network equipment supporting RFC3580 – VLAN ID or VLAN names, custom RADIUS attributes, RFC3576, IEEE 802.1x and/or MAC based authentication**
- **Network-based appliance allows integration with any network edge regardless of standards support**



Enterasys' Secure Networks™ are more than the hardware and software capabilities on any given day



Dave Marcum, Enterprise Systems Manager
for Grant Joint Union High School District

"We were immediately impressed. Enterasys policy management by user and application makes it easy for us to proactively define and automatically enforce compliance with our Acceptable Use Policy guidelines. If you can whiteboard what's needed – it's easy to configure a policy to enforce it. As I talk with users of other vendors' networking equipment, they are amazed to see how quickly and easily Enterasys enables us to deploy a new security protection district-wide in a couple of clicks."

This is a partnership



- You have invested in a long-term relationship with Enterasys
- We will continue to listen and innovate to make our solutions more focused toward the needs of education

You Can Expect ---

- Thought leadership through collaboration with customers and partners
- An Educational focus on every solution that Enterasys delivers
- New innovative solutions to enhance technology use in education
- Execution & financial performance
- Quality of support and training



“There is nothing more important than our customers”



Thank You

A Siemens Enterprise Communications Company