

# Network Access Control Technologies

Virus Bulletin Conference , Ottawa , Canada 2008

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What is **NAC**?





# Network Resources



# Users



# Endpoints



# Control Endpoint Security Health State

# Common NAC Use-Cases





# Control Guest Users

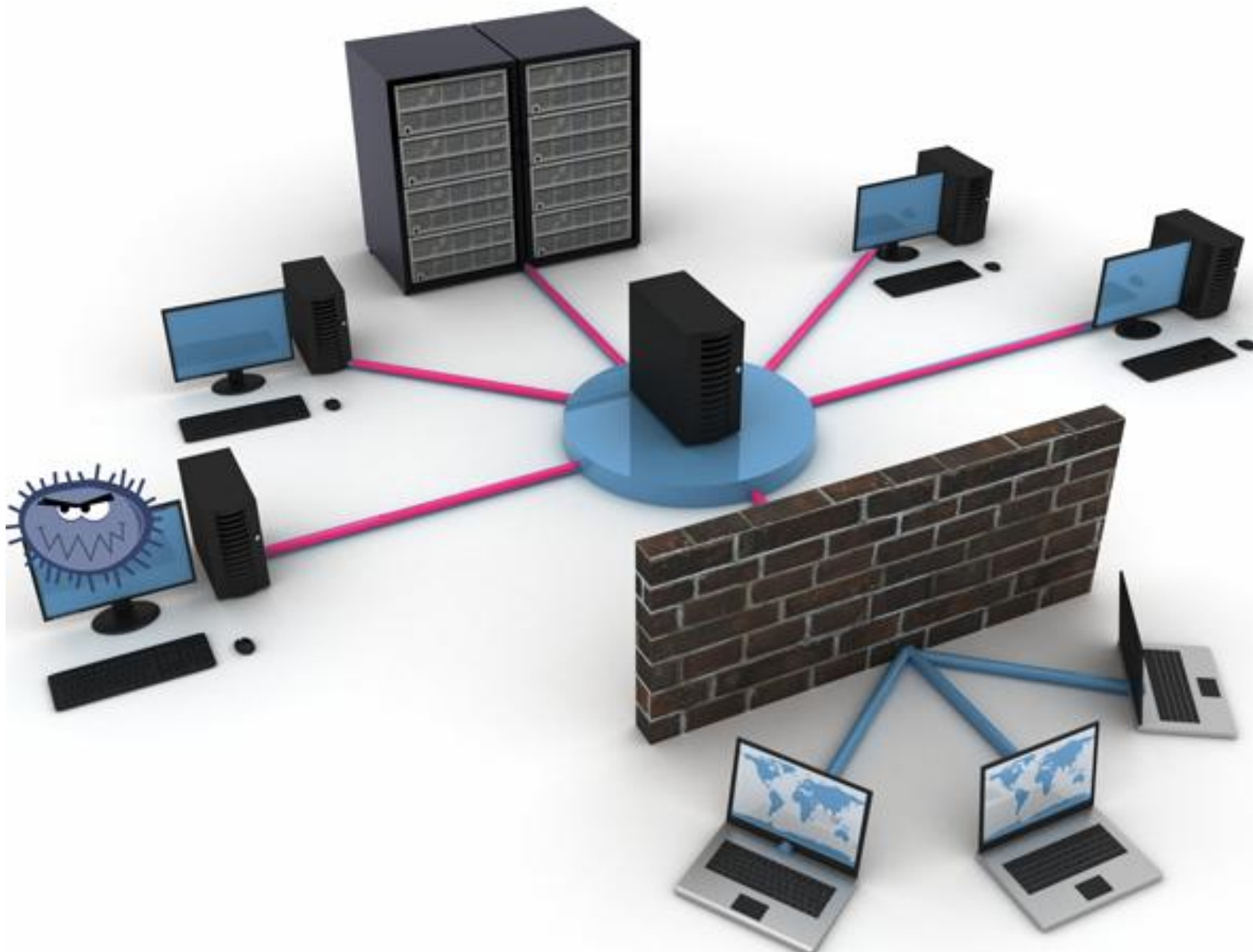


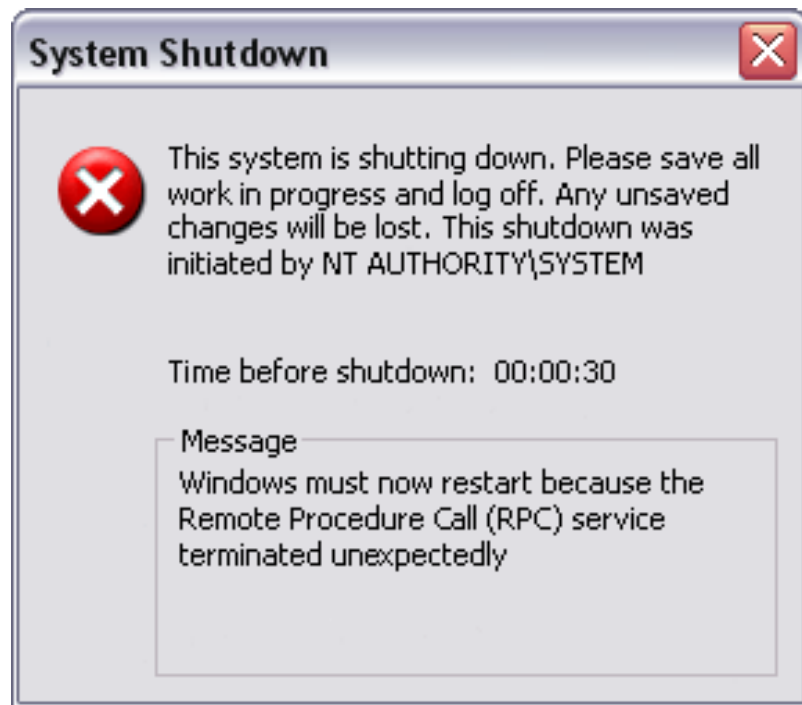
# Create Business **Segmentation**





# Prevent Network **Worms**





W32.Blaster.Worm WormExploits of DCOM RPC vulnerability, no user interaction was required to spread.  
DOS attack to Windowsupdate download site

# Control Remote Access Users



# FDA

# SOX

# FISMA



# Comply with Regulations



# Health Insurance Portability and Accountability Act (HIPAA)

The screenshot shows a Windows Internet Explorer browser window. The address bar contains the URL: <http://www.cms.hhs.gov/SecurityStandard/Downloads/SecurityGuidanceforRemoteUseFinal122806.pdf>. The browser's search bar is empty. The document content is displayed as a table with the following structure:

Risks	Possible Risk Management Strategies
infected external device used to gain remote access to systems that contain EPHI.	accessible; ➤ Install, use and regularly update virus-protection software on all portable or remote devices that access EPHI.

The status bar at the bottom of the browser window shows "Done" on the left and "Unknown Zone | Protected Mode: Off" on the right.



**Protect Management's Ass**

**Gartner estimates that this market grew 87% from 2006 to a total of \$225 million in 2007.**  
**Gartner anticipates approximately 100% growth in 2008 (3/08)**

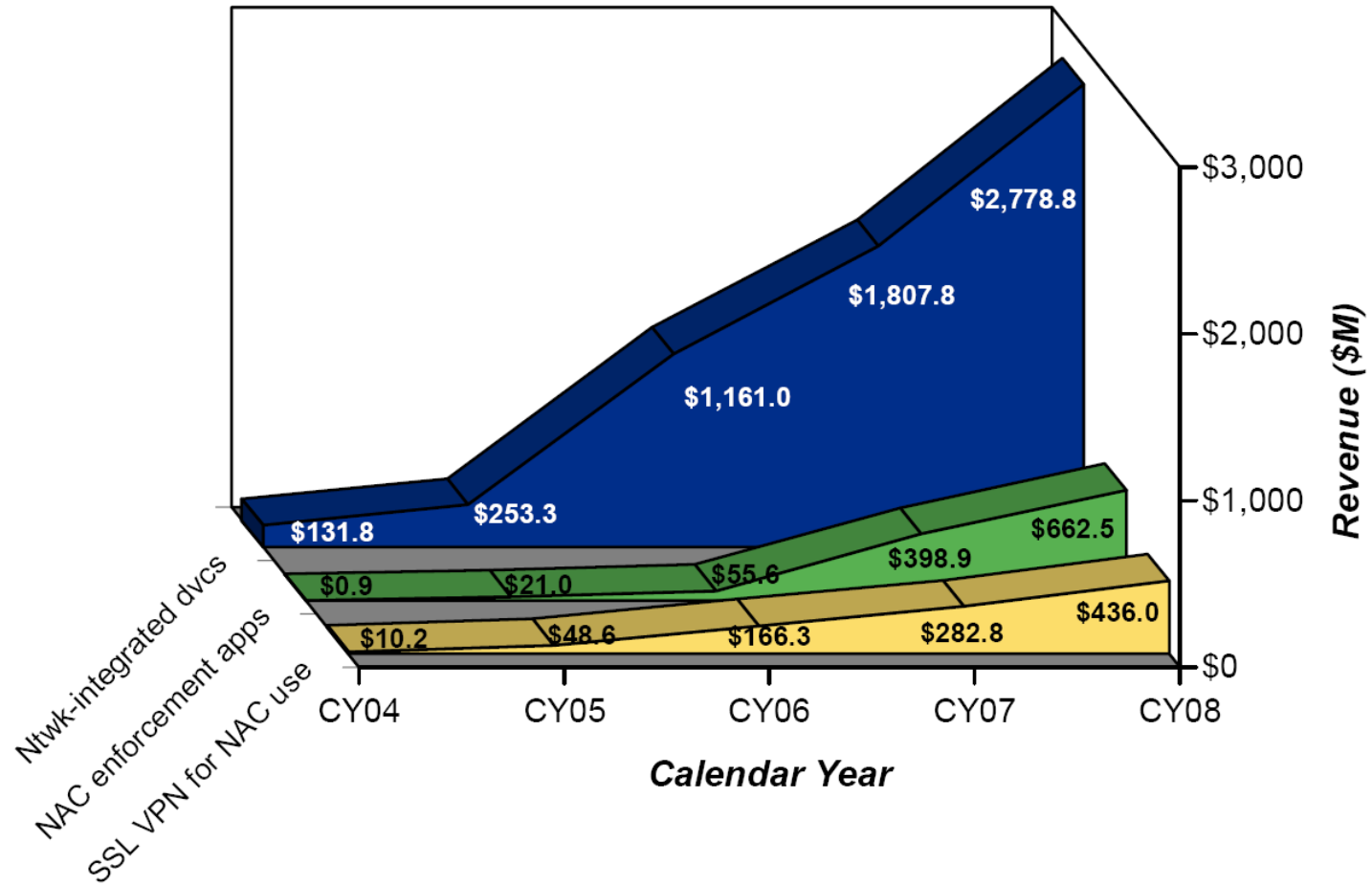


**\$3.2 billion in 2010, up  
from just \$526 million in  
2005**

**- IDC report (6/07)**



### Worldwide NAC Enforcement Device Revenue

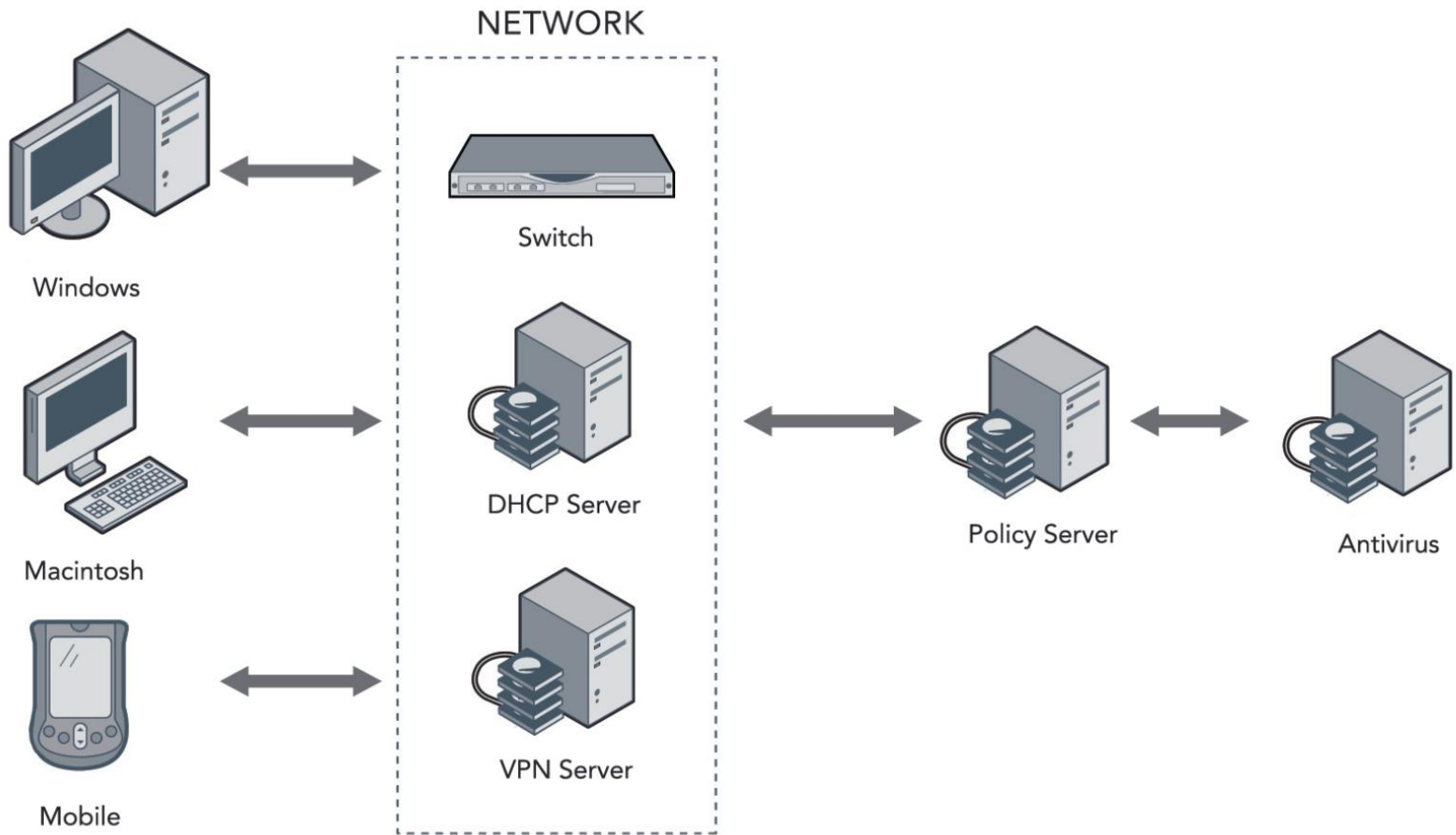


Source: 2006 Infonetics Research, Enforcing Network Access Control: Market Outlook and Worldwide Forecast



# NAC Vendors

# Common NAC Framework Architectures







Could be delivered as **Software**



or **Hardware**

# NAC Concepts



# Common Network Detection and Quarantine Technologies:

- ARP
- 802.X
- DHCP proxy
- Special Hardware
- SNMP
- Virtual Networks
- Frameworks (NAP, TNC)



**username:** \_\_\_\_\_

**password:** \_\_\_\_\_



Check Endpoint **Health**



Antivirus



Antispyware



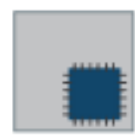
Personal Firewall



Antiphishing



Peripheral Protection



Patch Management



Health Agent



Hard Disk Encryption



VPN Client



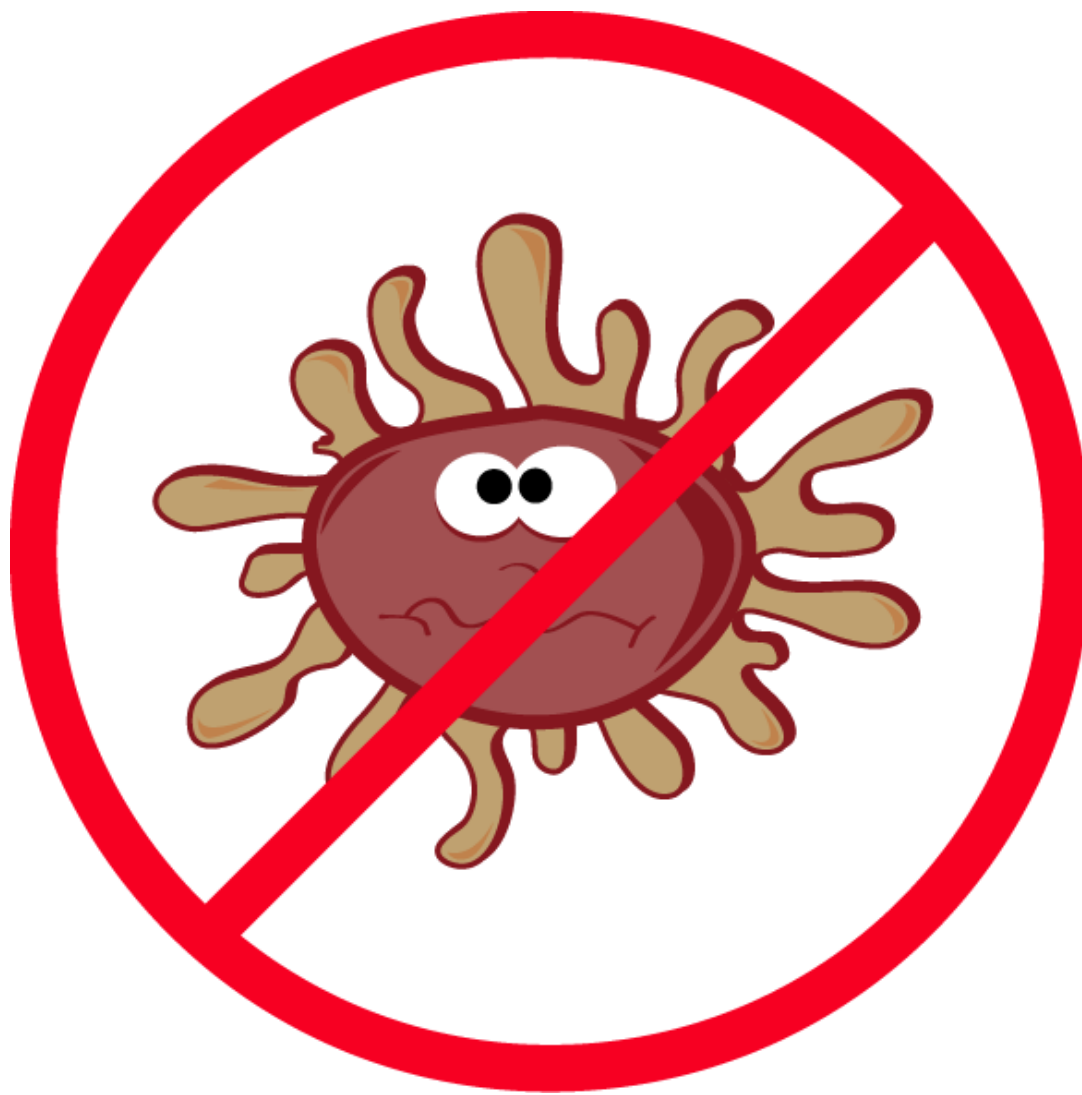
Backup Client

# Common Health Check Verticals



# Health Agent Technology Challenges

- Many security applications
- Several operating systems
- Security applications keep changing
- Security application keep evolving

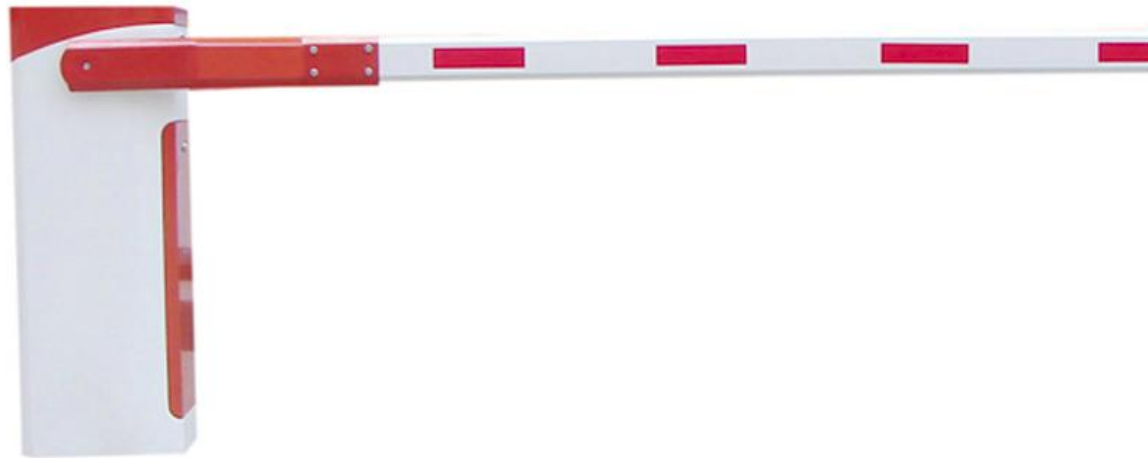


# Common **Anti-malware control**

- Features Activity
- Product and Signature Currency
- Threat history
- Authenticity checks







**Pre-Admission**



# Post-Admission



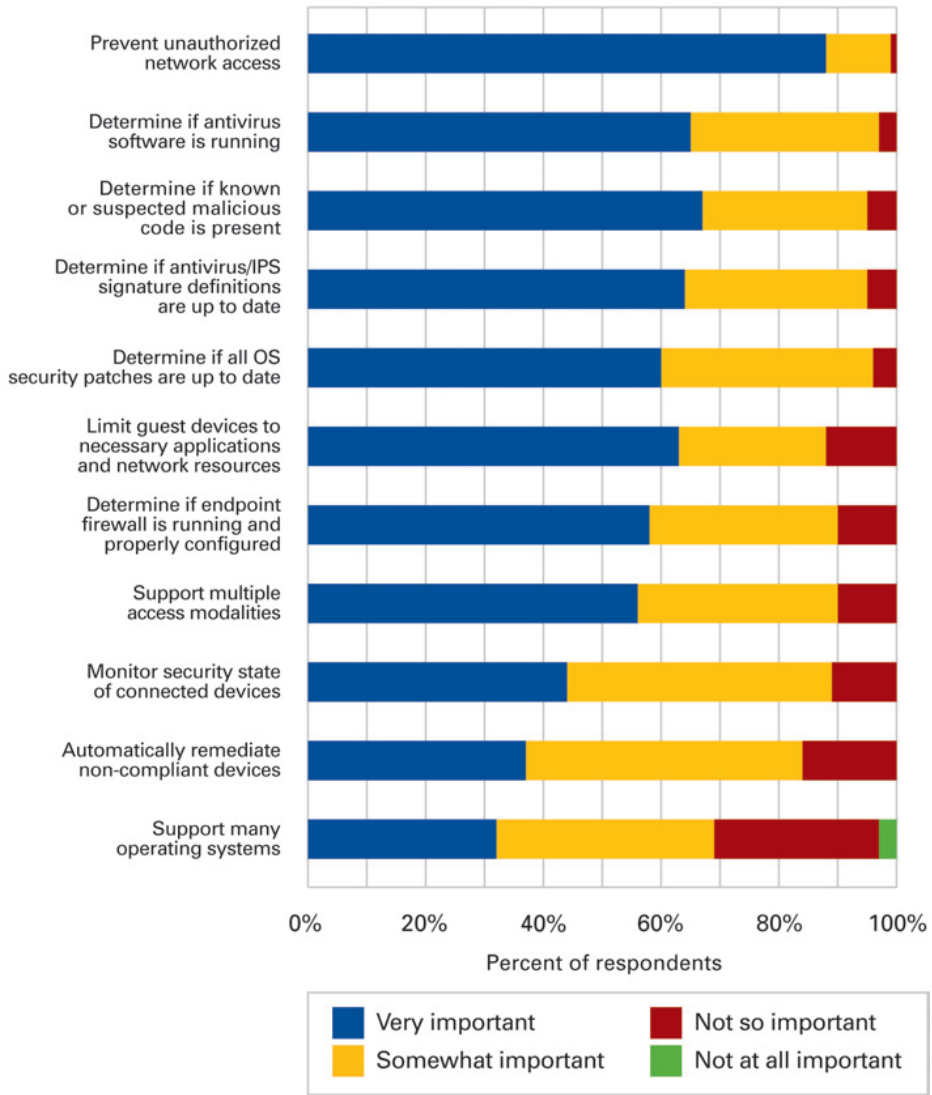
# Remediation



# Common Remediation Actions

- Trigger AV real time protection
- Update AV
- Perform full system scan
- Patch endpoint
- Turn on firewall
- Block firewall port

### Importance of Various Features When Considering NAC Solution



N = 74

Source: 2007 BT INS IT Industry Survey



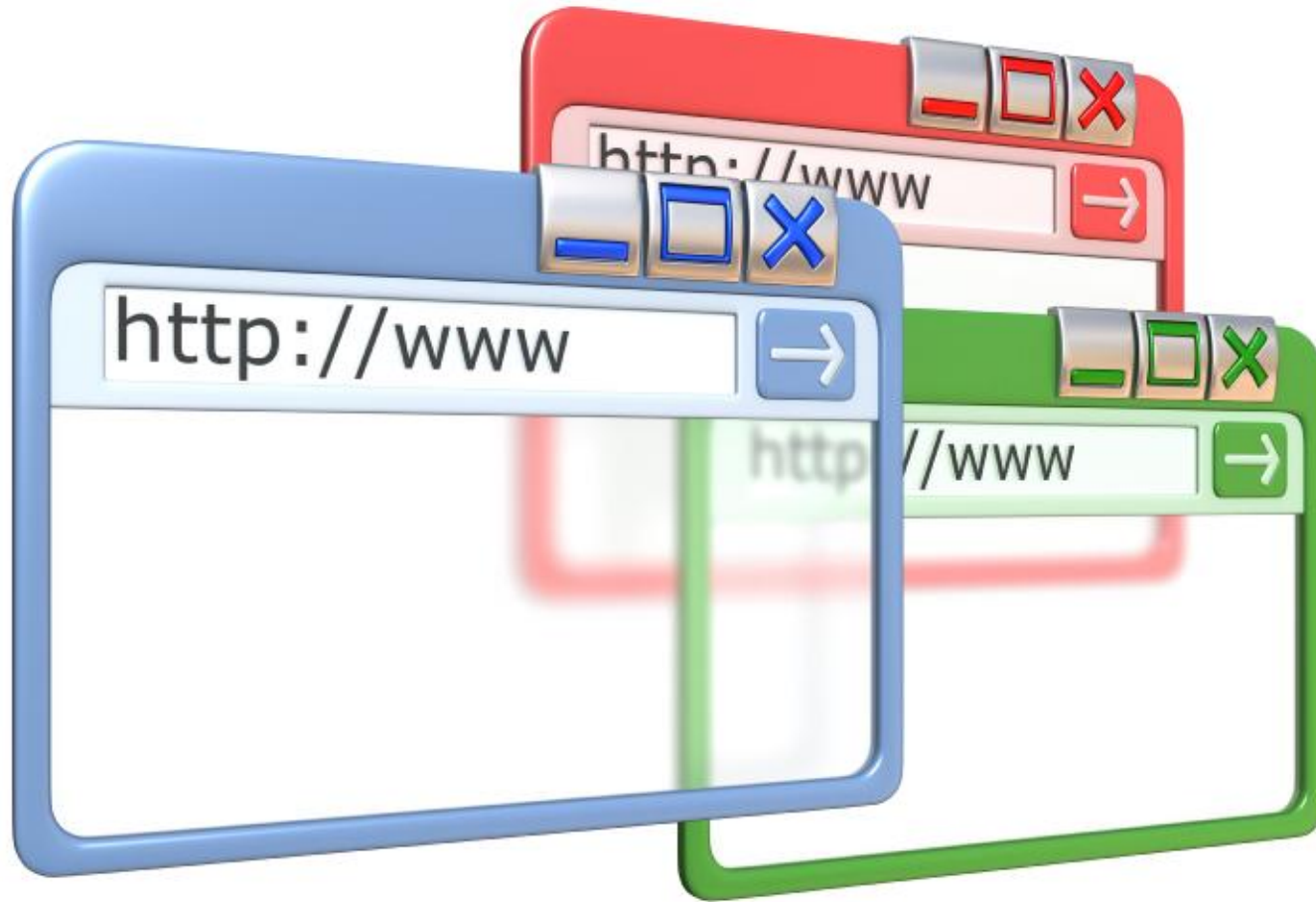
# Health Agent Technology



via **Network Monitoring**

```
<Server Name="etrustdownloads.ca.com" Port="80" Protocol="TCP">
<Http Secure="0">
<Request Type="GET">
<Path>/updates/eav/arclib/arclib.idx</Path>
<Path>/updates/eav/base/etrust_antivirus_base.idx</Path>
<Path>/updates/eav/drupdi/drupdi.idx</Path>
<Path>/updates/igateway/igateway.idx</Path>
<Path>/updates/eav/inoeng/ino_engine.idx</Path>
<Path>/updates/eav/eavlocgui/eavlocgui.idx</Path>
<Path>/updates/caupdate/caupdate.idx</Path>
<Path>/updates/eav/veteng/vet_engine.idx</Path>
<UserAgent Random="0">CAUpdate</UserAgent>
</Request>
</Http>
</Server>
</QueryInfo>
<UpdateProg>
<!-- updating -->
<Server Name="etrustdownloads.ca.com" Port="80" Protocol="TCP">
<Http Secure="0">
<Request Type="GET">
<Path>
/updates/eav/
<Format>STRING</Format>
.pkg
</Path>
<!--ie. GET /updates/eav/veteng/vet_incr_3492.pkg HTTP/1.0
-><UserAgent Random="0">CAUpdate</UserAgent>
</Request>
<Response Encrypted="1">
<HttpVersion>1.0</HttpVersion>
<StatusCode>200 OK</StatusCode>
<ContentType>text/plain</ContentType>
</Response>
</Http>
</Server>
</UpdateProg>
```

# Monitor Antimalware Update network signature



Via Code Running on Endpoint

# Common Health Agent Technologies

- Browser plug-in
- Executable (process)
- Application
- Windows Service/Linux demon
- RPC Calls

Health Agent	Pre Admission	Post Admission	Post Admission after reboot	Works as Guest	Update Process
Browser Plug-in	✓	✗	✗	✓	😊
Executable	✓	✓	✗	✓	😊
Application	✓	✓	✓	✗	😞
Daemon	✓	✓	✓	✗	😞
RPC	✓	✓	✓	✗	😊



Why should  
**Anti-malware companies**  
**Partner with NAC?**

Interoperability = **more BUSINESS**



Shop CDW My Account Print This Page

Search for... All Products Find it Browse All Categories

Products Services Solutions Center What CDW Offers


### Shopping Cart

Your Saved Carts Save This Cart Edit Saved Carts Send To An Associate

Quantity	Product	CDW	Availability	Price	Ext. Price
<input type="text" value="1"/>	 Cisco ASA 5550 SSL / IPsec VPN Edition - security appliance	1403312	Call	\$61,936.99	\$61,936.99
<input type="text" value="1"/>	 KASPERSKY AV ENGINE 600-2400 MB	1255946	Call	\$1,199.99	\$1,199.99
Click <input type="radio"/> to remove an item from your cart				Sub-Total	\$63,136.98

Update Cart Clear Cart Use Standard Checkout Use Express Checkout

#### Continue Shopping

Shipping Calc:  

Enter a postal code to quickly estimate shipping cost.

QuickCart:  

Enter a CDW part number to quickly add it to your cart.

Product ID  
 CDW Part: XXXXXXXX  
 Mfg. Part: XXXXXXXXXXXX  
 UNSPSC: XXXXXXXX



# Competitive Defense

Office of Information Technology: Remote Access - Juniper Supported Anti-Virus Software - Windows Internet Explorer

http://maine.gov/oit/remoted/juniper/antivirus.htm

Search web...

Office of Information Technology: Remote Acces...

Maine.gov Agencies | Online Services | Help Page Tools GO State Search: GO

DEPARTMENT OF ADMINISTRATIVE & FINANCIAL SERVICES

Office of Information Technology

STATE OF MAINE

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**OIT INFORMATION**

- Message From The CIO
- About Us
- What's New
- Annual Reports
- IT Strategic Plan
- IT Governance Plan
- IT Policies/Standards/Procedures
- Architecture
- Accessibility
- User Groups
- Technology Awards

Home > Remote Access > Juniper Supported Anti-Virus Software

### Juniper Supported Anti-Virus Software

This is a list of Anti virus softwares and versions that Juniper supports:

- Active Virus Shield (6.x)
- AhnLab Security Pack (2.x)
- AhnLab V3 Internet Security 2007 (7.x)
- AhnLab V3 Internet Security 2007 Platinum (7.x)
- AhnLab V3 Internet Security 2008 Platinum (7.x)
- AhnLab V3 Internet Security 7.0 Platinum Enterprise (7.x)
- Aluria Security Center AntiVirus (1.x)
- AntiVir PersonalEdition Classic Windows (7.x)
- AntiVir/XP (6.x)
- AntiVirusKit 2006 (2006.x)
- AntivirusSystem AVG 6.0 (6.x)
- AOL Safety and Security Center Virus Protection (1.x)
- AOL Safety and Security Center Virus Protection (102.x)
- AOL Safety and Security Center Virus Protection (2.x)
- AOL Safety and Security Center Virus Protection (210.x)
- avast! Antivirus (4.x)
- avast! Antivirus (managed) (4.x)
- avast! Antivirus Professional (4.x)
- AVG 6.0 Anti-Virus - FREE Edition (6.x)
- AVG 6.0 Anti-Virus System (6.x)
- AVG 7.5 (7.x)
- AVG Anti-Virus 7.0 (7.x)
- AVG Anti-Virus 7.1 (7.x)
- AVG Anti-Virus 7.0 (7.x)
- AVG Antivirensystem 7.0 (7.x)
- AVG Free Edition (7.x)
- Avira AntiVir PersonalEdition Classic (7.x)
- Avira AntiVir PersonalEdition Premium (7.x)
- Avira AntiVir Windows Workstation (7.x)
- Avira Premium Security Suite (7.x)
- BellSouth Internet Security Anti-Virus (5.5.x)
- BellSouth Internet Security Anti-Virus (5.x)
- BitDefender 8 Free Edition (8.x)
- RitDefender 8 Professional Plus (8.x)

Done Internet | Protected Mode: Off 100%





ResNet  
Guest Internet Access

Search ResNet

California Polytechnic State University

**Navigation**

- Welcome**
- Logging On
- Policies
- Requirements**
- Microsoft Windows
- Apple Mac OS X
- UNIX/GNU Linux
- Register Now!**
- Supported Security Clients**
- [AntiVirus Clients](#)
- [AntiSpyware Clients](#)

ResNet > Guest Internet Access > Requirements > Microsoft Windows > Supported AntiVirus Clients

## Supported AntiVirus Clients

The following table lists the supported antivirus clients for Microsoft Windows 2000, XP, and Vista. If your antivirus client does not appear on the list below, it will not be accepted during the requirement validation process. This list was last updated on 05/15/2008.

Product Name	Product Version
TrustPort Antivirus	2.x
AhnLab Security Pack	2.x
AhnLab V3 Internet Security 2007	7.x
AhnLab V3 Internet Security 2007 Platinum	7.x
AhnLab V3 Internet Security 2008 Platinum	7.x
AhnLab V3 Internet Security 7.0 Platinum Enterprise	7.x
V3Pro 2004	6.x

UC Santa Cruz Anti-Virus Info

**Guide:**  
Supported AntiVirus Programs

**Summary:**  
Valid AntiVirus Programs - Windows Vista/XP/2000

**Description:**  
Antivirus Software is required to be installed and running on all ResNet computers in order to gain internet access. If the Clean Access Agent fails to detect qualifying AntiVirus software you'll be prompted to install McAfee VirusScan Enterprise.

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**Q: I'm not running McAfee VirusScan Enterprise but I am running another antivirus package on the list, can I obtain support for this product from the ResNet Helpdesk?**

*A: ResNet can only provide support for McAfee. For other vendors the helpdesk cannot assist in resolving problems associated with network access. You will need to contact the vendor of your specific application to get support in updating or operating the software. The best option is to uninstall any other AntiVirus application and install McAfee. Click Start>Control Panel>Add or Remove Programs. Select your current AntiVirus program from the list, and follow the instructions to remove it. If you need assistance installing McAfee please contact us at 831-459-4357*

**Cisco Clean Access Antivirus Product Support Chart (Windows Vista/XP/2K)  
Version 61, Release 4.1.2 Agent**

Product Name	Product Version	AV Checks Supported		Live Update
		Installation	Virus Definition	
<b>AhnLab, Inc.</b>				
AhnLab Security Pack	2.x	yes	yes	yes
AhnLab V3 Internet Security 2007 Platinum	7.x	yes	yes	yes

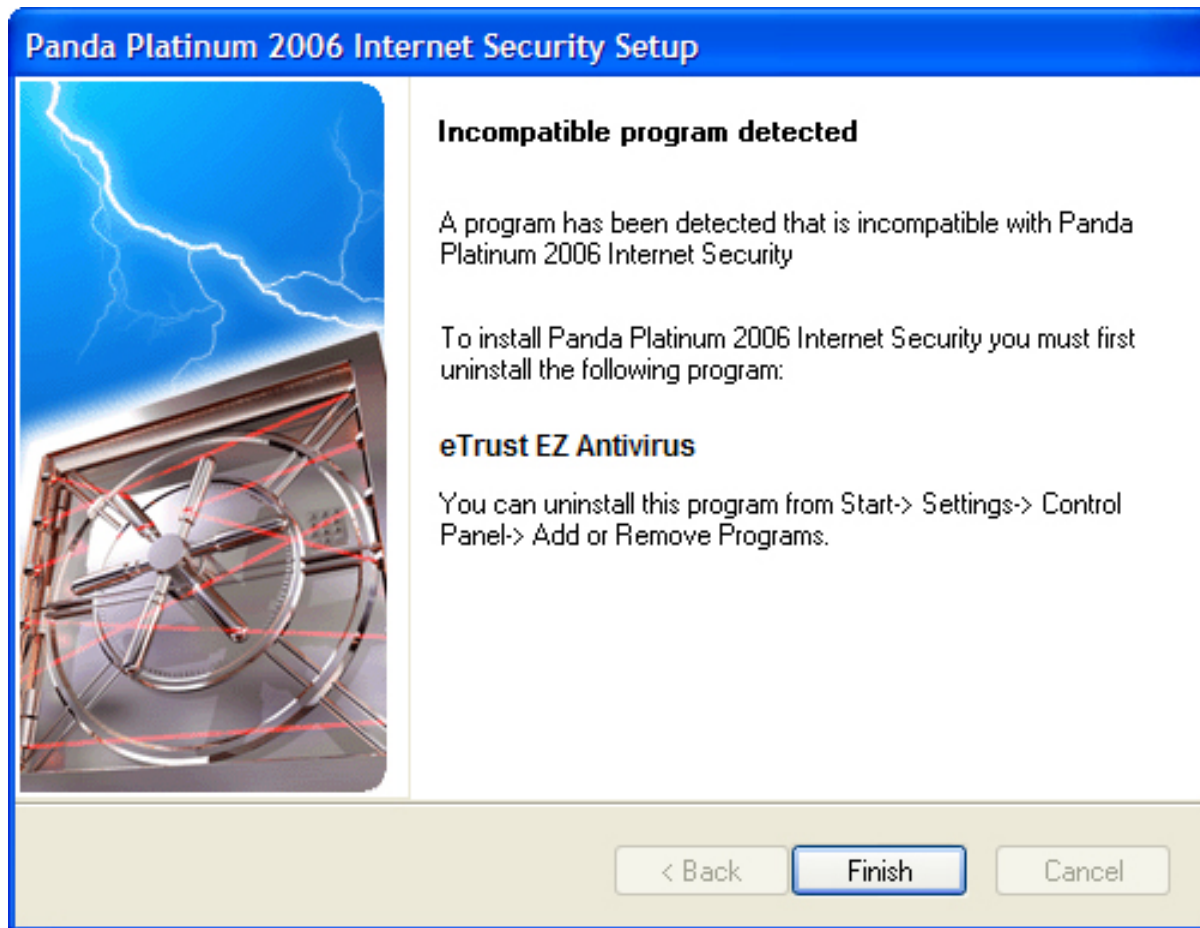


NAC Agent **does not detect**  
Antimalware application



The screenshot shows the FIU University Technology Service website. The header includes the FIU logo and 'University Technology Service'. A navigation bar contains links for 'STUDENTS', 'FACULTY & STAFF', 'ANNOUNCEMENTS', 'ABOUT US', and 'HOME'. The main content area is titled 'Free Antivirus for residents' and features a 'Student Residents' section with a 'No Virus' icon and a red 'IT'S FREE!' banner. The banner text reads: 'Attention: Housing Students IT'S FREE! Enter the Panther Housing Software Download Center to get your free copy of McAfee Anti-virus today!'. Below this, a text block states: 'FIU offers a free version of McAfee Antivirus for students currently living on campus. If you are a student resident, click [this link](#) to download your free version of McAfee.' A 'Free Antivirus Product' section follows, explaining that various vendors offer free antivirus products supported by the Clean Access Agent, but UTS does not provide support for these products.

User is directed to  
**Remediation Screen**



# Panda uninstalls CA

**SOPHOS**



**McAfee**<sup>®</sup>

## NAC Vendors

# Branding

## Device Management &gt; Clean Access

Certified Devices

General Setup

Network Scanner

Clean Access Agent

Distribution · Rules · Requirements · Role-Requirements · Reports · Updates

Requirement List | New Requirement | Requirement-Rules

Requirement Type  Do not enforce requirementPriority Antivirus Vendor Name Requirement Name Description Operating System  Windows All  Windows XP  Windows 2000 Windows ME  Windows 98

If user has one of the following products installed, he/she can use the Update button provided by CCA Agent to update the virus definition file if this requirement fails.

OS	Products
Windows XP/2000	Norton AntiVirus: 10.x;Norton AntiVirus 2002: 8.00.x;Norton AntiVirus 2002 Professional: 8.x;Norton AntiVirus 2002 Professional Edition: 8.x;Norton AntiVirus 2003: 9.x;Norton AntiVirus 2003 Professional: 9.x;Norton AntiVirus 2003 Professional Edition: 9.x;Norton AntiVirus 2004: 10.x;Norton AntiVirus 2004 (Symantec Corporation): 10.x;Norton AntiVirus 2004 Professional: 10.x;Norton AntiVirus 2004 Professional Edition: 10.x;Norton AntiVirus 2005: 11.0.x;Norton AntiVirus Corporate Edition: 7.x;Norton AntiVirus Corporate Edition 7.0 for Windows NT: 7.x;Norton Internet Security: 7.x; 8.0.x;Symantec

- Central Manager
  - System
    - Status
    - Configuration
    - Network
    - Clustering
    - Log/Monitoring
  - Authentication
    - Signing In
    - Endpoint Security
    - Auth. Servers
  - Administrators
    - Admin Realms
    - Admin Roles
  - Users
    - User Realms
    - User Roles
    - Resource Profiles
    - Resource Policies
  - Maintenance
    - System
    - Import/Export
    - Push Config
    - Archiving
    - Troubleshooting

Configuration > Host Checker Policy >

### Edit Predefined Rule : Antivirus

Rule Type: Antivirus  
Rule Name:

#### Criteria

##### Available Types:

- Sophos Anti-Virus (4.x)
- Sophos Anti-Virus (5.x)
- Sophos Anti-Virus (6.x)
- Sophos Anti-Virus (7.x)
- Sophos Anti-Virus version 3.80 (3.80)
- Symantec AntiVirus Server (8.x)**
- SystemSuite 7 Professional [AntiVirus] (7.x)
- Système anti-virus AVG 7.0 (7.x)
- Sécurité Internet d'affaires Antivirus (5.x)
- The River Home Network Security Suite (1.x)

Add ->

<- Remove

##### Selected Types:

- Norton 360 (Symantec Corporation) (1.x)
- Norton AntiVirus (10.x)
- Norton AntiVirus (14.x)
- Norton AntiVirus (15.x)**
- Norton AntiVirus 2002 (8.00.58.x)
- Norton AntiVirus 2002 (8.x)
- Norton AntiVirus 2002 Professional (8.x)
- Norton AntiVirus 2002 Professional Edition (8.x)
- Norton AntiVirus 2003 (9.x)
- Norton AntiVirus 2003 Professional (9.x)

- Specify age in days:  
Maximum age of definition files:  days. Enter 0 to disable age check.
- Virus signatures must be up to date. You must also import virus signatures list.

#### Save Changes?



- Dashboard
- Connections
- Alerts
- Authentication
- Security
- Enforcement
- Posture Health**

### Health Rules

Health Rule Groups

Health Policies

Administration

## Add Health Rules

### Value

Rule Family **AntiVirus**

Scan Rule

Name
Kaspersky Labs
Defender Pro LLC
EarthLink, Inc.
Eset Software
F-Secure Corp.
Frisk Software International
GData Software AG
Grisoft, Inc.
H+BEDV Datentechnik GmbH
HAURI, Inc.
Jiangmin, Inc.
Kaspersky Labs
Kingsoft Corp.
McAfee, Inc.
Microsoft Corp.
MicroWorld
Norman ASA
<b>Panda Software</b>
Radialpoint Inc.
SaID Ltd.
Sereniti, Inc.

User Repairable

Client Auto Repairable

Rule Setting Name

Jiangmin, Inc.

Enabled

Failure Text

Jiangmin antivirus is not in

Remediation Text

Remediation URL

>> NORTEL TUNNELGUARD ADMINISTRATION (CONNECTED TO: http://10.80.20.50:1000)

File Edit Predefined Software Definition Custom Software Definition Software Definition Entry TunnelGuard Rule Tool Help

Predefined Software Definitions Custom Software Definitions Rule Definitions

Software Definition	Selected Predefined Entries	Available Software Definitions
PRE_ANT_VIRUS	Symantec AntiVirus 10.x Symantec AntiVirus 9.x	Antivirus Definitions All Norton SystemWorks 2004 Prc Norton SystemWorks 2005 8.x Norton SystemWorks 2005 Prc Norton SystemWorks 2006 Prc Symantec AntiVirus 10.x Symantec AntiVirus 9.x Symantec AntiVirus Client 8.x Symantec AntiVirus Server 8.x Symantec Client Security 10.x Symantec Client Security 9.x Symantec unknown product x PC-cillin 2002 9.x PC-cillin 2003 10.x

Any  All must be present for compliance

AntiVirus/AntiSpyware Configuration Firewall Configuration

Verify Last Full System Scan is within 5 days  
 Verify Definitions Update is within days  
 Verify Real Time Protection is ON

SRS Display Message

Start FC3 - VMware ... C:\WINDOWS\... 2 Internet E... Flashing 4:26 PM



Endpoint Inspector Details

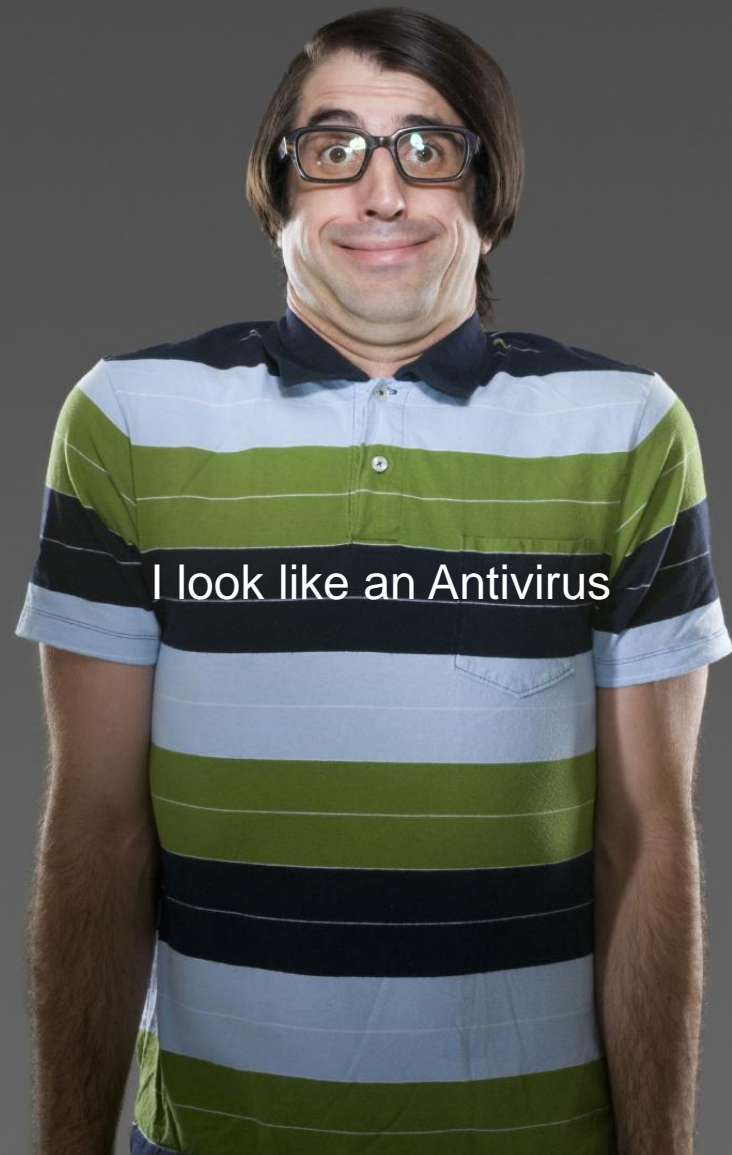
[Help»](#)

Scan active processes for viruses		
Perform processes scan	<input type="text" value="ask user"/>	
Scan type	<input type="text" value="Quick"/>	
Allow user to terminate virus scan	<input type="text" value="disabled"/>	
Antivirus # 1		
Antivirus software	<input type="text" value="Symantec (Norton AntiVirus)"/>	
Engine version	<input type="text"/>	
Database signature	<input type="text"/>	
Database is not older than	<input type="text" value="disabled"/>	
Force protection	<input type="text" value="disabled"/>	
Antivirus # 2		
Antivirus software	<input type="text" value="Network Associates(McAfee)"/>	
Engine version	<input type="text"/>	
Database signature	<input type="text"/>	
Database is not older than	<input type="text" value="disabled"/>	
Force protection	<input type="text" value="disabled"/>	

Be there or be



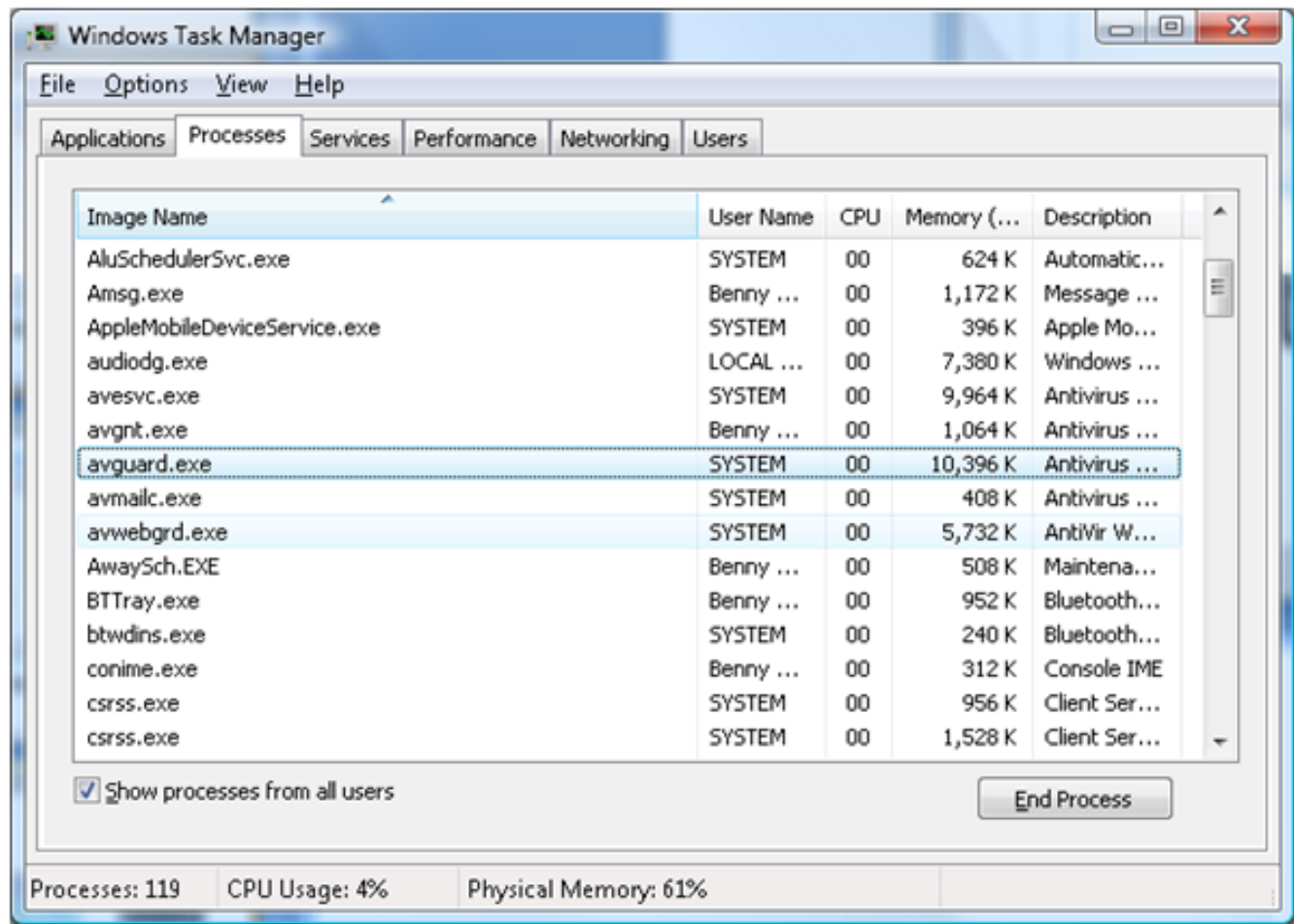
**Reputation**



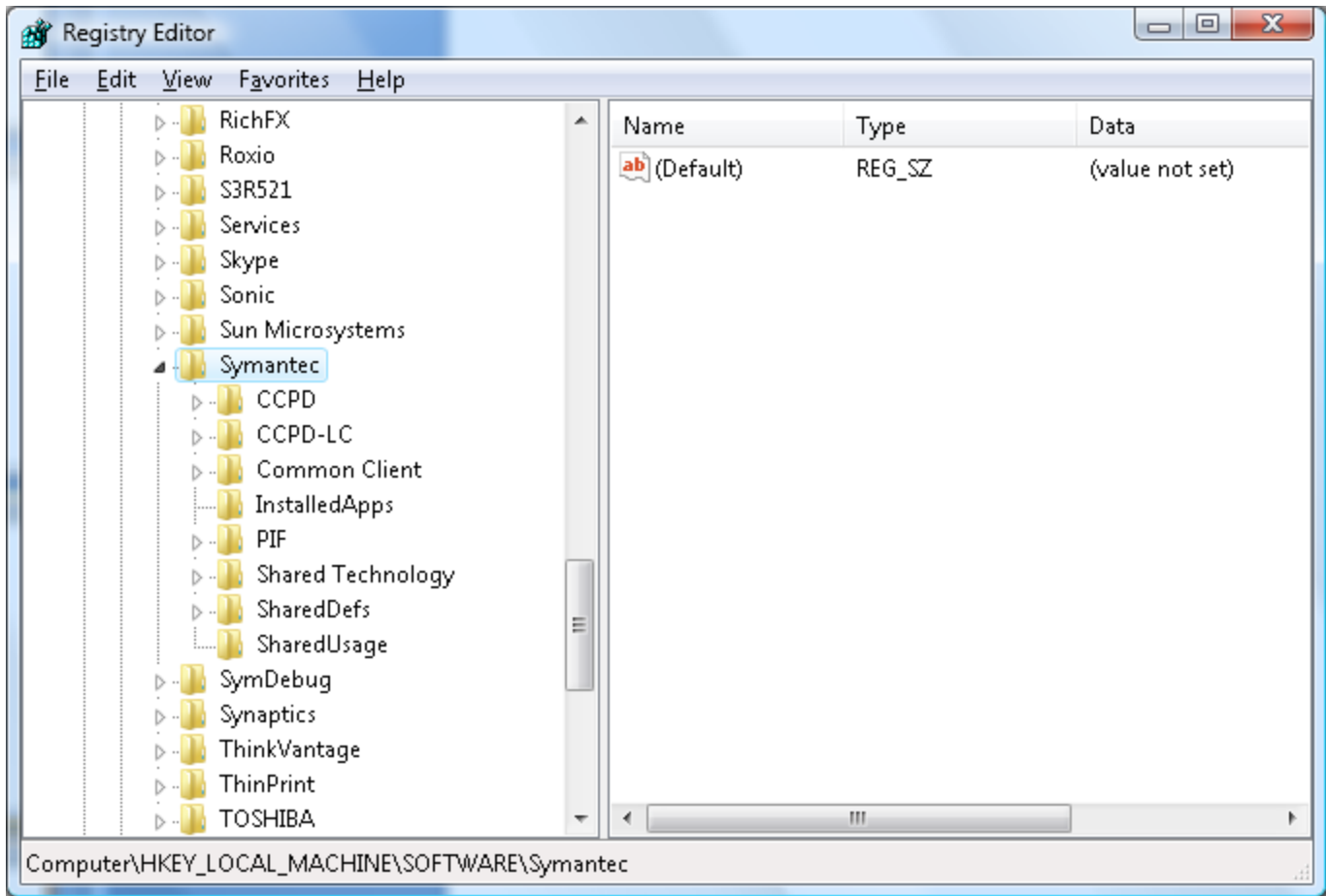


NAC Solution

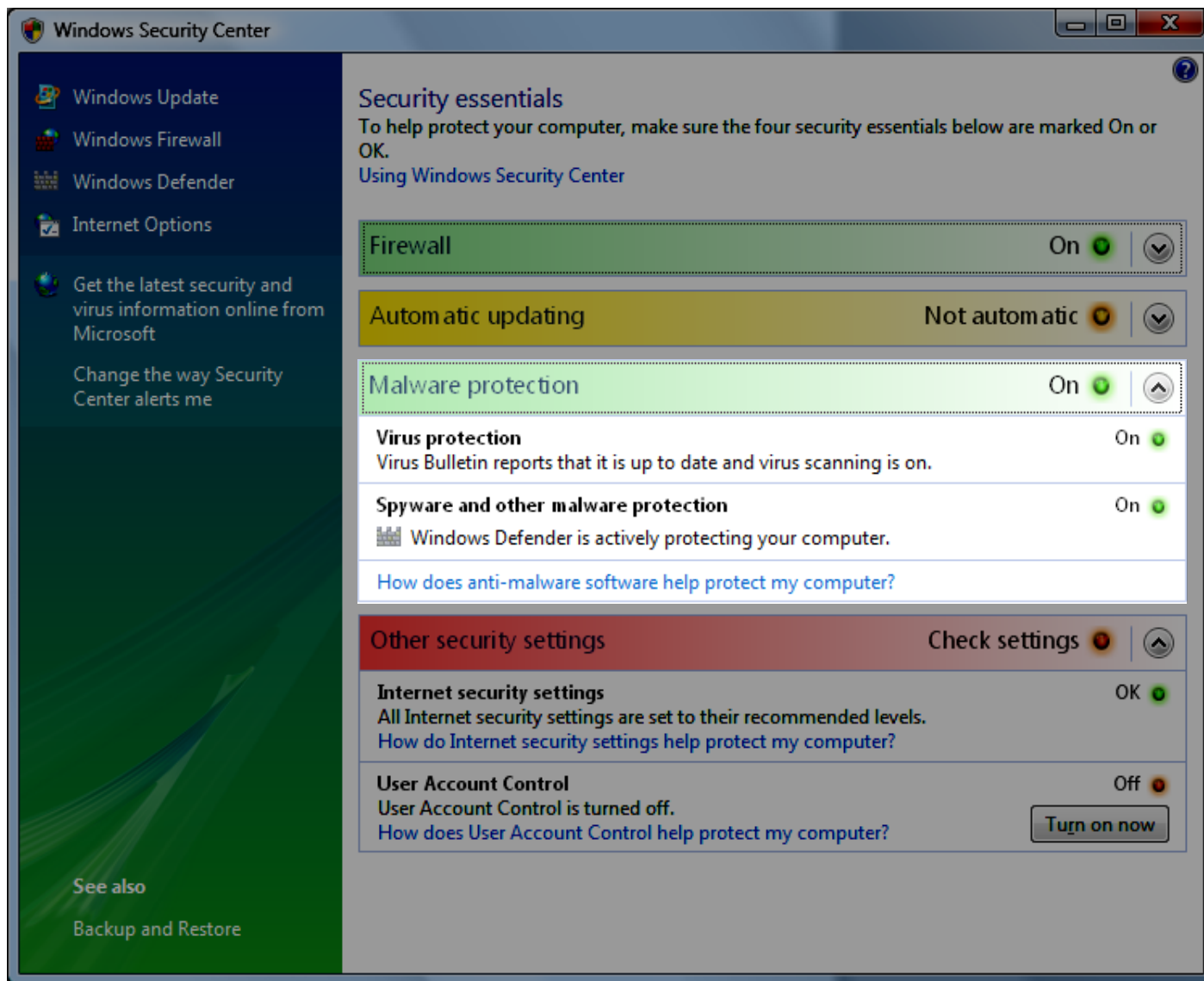
# Spooof Antimalware digital Identity



# SpooF Binary Identity



# SpooF Binary Identity



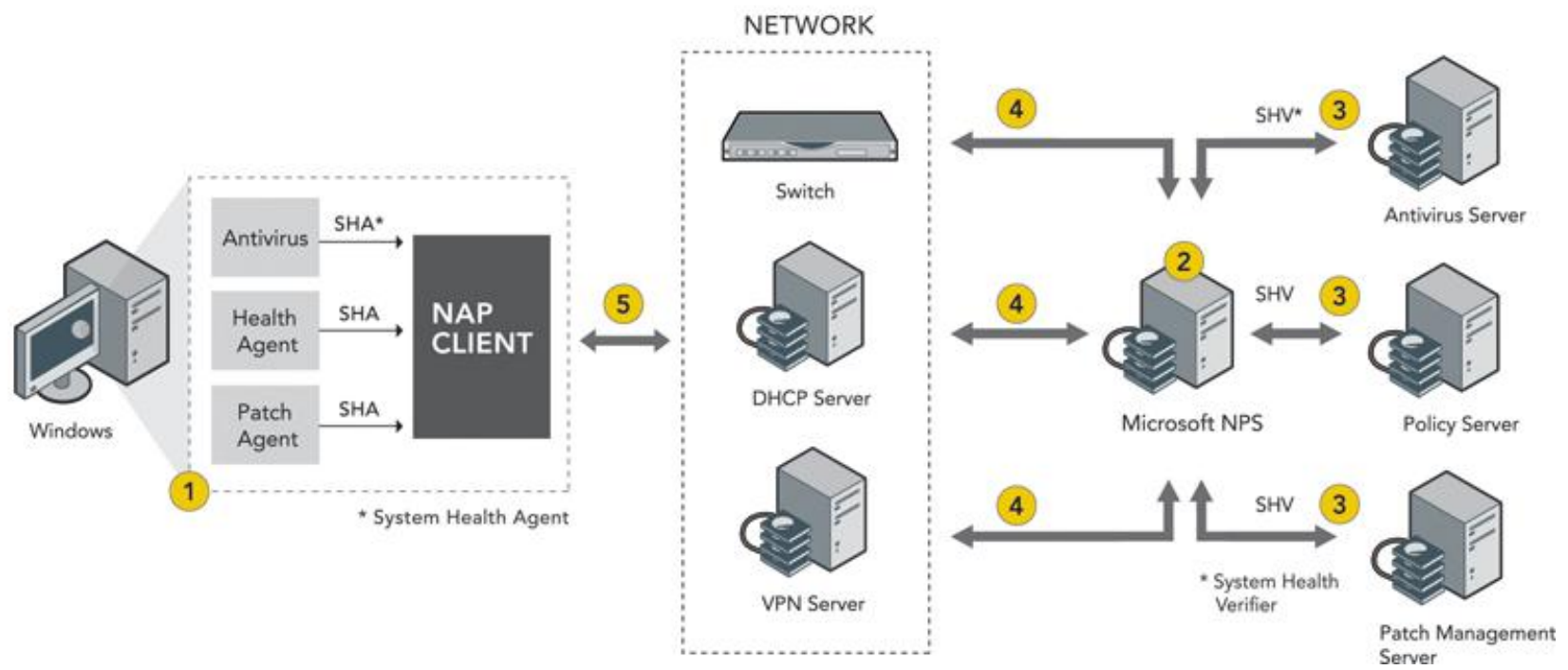
# SpooF Binary Identity





# How to Partner with NAC Vendors

# MICROSOFT NAP ARCHITECTURE



1. Endpoint connects to the network
2. NAP Client collects endpoint health state.
3. Endpoint health state is communicated to NPS
4. Security policy decision is passed to network infrastructure
5. Endpoint is grant/denied/quarantined access to the network



# Partner with Microsoft



# Microsoft NAP

- [-] Servers and Enterprise Development
- [-] Web Development
- [-] Win32 and COM Development
  - [-] Administration and Management
    - [-] Component Development
    - [-] Data Access and Storage
    - [-] Development Guides
    - [-] Diagnostics
    - [-] Graphics and Multimedia
    - [-] Messaging and Collaboration
    - [-] Mobile PC
  - [-] Networking
    - [-] Network Authentication
      - [-] Extensible Authentication Prot
      - [-] Extensible Authentication Prot
      - [-] MS-CHAP Password Managem
    - [-] Network Access Protection
      - [-] About NAP
      - [-] Using NAP
        - [-] **Setting Up a Simple S**
        - [-] Example SHV
        - [-] SHV Module
      - [-] NAP Reference
    - [-] Internet Authentication Servic
    - [-] Network Policy Server
  - [-] Network Communication
  - [-] Network Firewall and Routing
  - [-] Network Management
  - [-] Network Protocols
  - [-] Wireless Networking
- [-] Security
- [-] System Services
- [-] Tools
- [-] User Interface
- [-] Windows Search
- [-] Windows Driver Kit
- [-] Windows Logo Kit

MSDN > MSDN Library > Win32 and COM Development > Networking > Network Authentication > Network Access Protection

Using NAP > **Setting Up a Simple SHA**

Language Filter : All

## Setting Up a Simple SHA

The following example sets up a simple system health agent (SHA) and shows two optional actions: Statement of Health (SoH) change notification and flushing of the SoH cache. Note that error processing is not included in the main() function for simplicity of this example.

**Note** The NAP SDK also contains a full set of sample code, found in the ...\Samples\NetDS\NAP... directory of your SDK installation. This sample set includes an SHA, system health validator (SHV), and enforcement client (EC). It has full working NAP scenarios setting up communication between SHA-SHV and SHA-EC.

```
#include "Callback.h"
#include <NapTypes.h>
#include <NapClientManagement.h>
#include "Strsafe.h"

static const UINT32 NapSystemHealthId = 0x000137F0;

// Set GUID infoClsid equal to {08B8B292-7033-46f3-AB97-D62B6FDCODE}
static const GUID infoClsid = { 0x8b8b292, 0x7033, 0x46f3, { 0xab, 0x97, 0xd6, 0x2b, 0x6f, 0xcd, 0xc0, 0xde } };
static const wchar_t SHA_FRIENDLY_NAME[] = L"SHA SDK Sample";
static const wchar_t SHA_DESCRIPTION[] = L"Microsoft SHA SDK Sample";
static const wchar_t SHA_VERSION[] = L"1.0.0.1";
static const wchar_t SHA_VENDOR_NAME[] = L"Microsoft";

// Helper Function for FillShaComponentRegistrationInfo.
HRESULT ConstructCountedString(const WCHAR* src, UINT16 len,
    CountedString* dest)
{
    HRESULT hr = S_OK;
    DWORD retCode = ERROR_SUCCESS;
    hr = AllocateMemory(dest->string, ((len+1)*sizeof(WCHAR)));
    dest->length = len;
    retCode = StringCchCopy(dest->string, len+1, src);
    return hr;
}

HRESULT FillShaComponentRegistrationInfo(NapComponentRegistrationInfo *agentInfo)
{
    HRESULT hr = S_OK;
    agentInfo->id = NapSystemHealthId;
    agentInfo->infoClsid = infoClsid;
    hr = ConstructCountedString(SHA_FRIENDLY_NAME, sizeof(SHA_FRIENDLY_NAME), &(agentInfo->friendlyName));
    hr = ConstructCountedString(SHA_DESCRIPTION, sizeof(SHA_DESCRIPTION), &(agentInfo->description));
}
```

# Develop SHA



- Web Development
- Win32 and COM Development
  - Administration and Management
  - Component Development
  - Data Access and Storage
  - Development Guides
  - Diagnostics
  - Graphics and Multimedia
  - Messaging and Collaboration
  - Mobile PC
  - Networking
    - Network Authentication
      - Extensible Authentication Prot
      - Extensible Authentication Prot
      - MS-CHAP Password Managem
      - Network Access Protection
        - About NAP
        - Using NAP
          - Setting Up a Simple S
          - Example SHV**
          - SHV Module
        - NAP Reference
      - Internet Authentication Servic
      - Network Policy Server
    - Network Communication
    - Network Firewall and Routing
    - Network Management
    - Network Protocols
    - Wireless Networking
- Security
- System Services
- Tools
- User Interface
- Windows Search
- Windows Driver Kit
- Windows Logo Kit

MSDN &gt; MSDN Library &gt; Win32 and COM Development &gt; Networking &gt; Network Authentication &gt; Network Access Protection &gt;

Using NAP &gt; Example SHV

Language Filter : All

## Example SHV

The following example sets up a system health validator (SHV) on a NAP health policy server.

**Note** The NAP SDK also contains a full set of sample code that can be found in the ...\\Samples\\NetDS\\NAP... directory of your SDK installation. This sample set includes and system health agent (SHA), SHV, and enforcement client (EC). It has full working NAP scenarios setting up communication between SHA-SHV and SHA-EC.

```
#include "stdafx.h"
#include "NapUtil.h"
#include "NapTypes.h"
#include "NapProtocol.h"
#include "NapMicrosoftVendorIds.h"
#include "NapSystemHealthValidator.h"
#include "NapError.h"

STDMETHODIMP CSampleShv::Validate(
    /*[in]*/ INapSystemHealthValidationRequest* pShvRequest,
    /*[in]*/ UINT32 hintTimeOutInMsec,
    /*[in]*/ INapServerCallback* pCallback)
{
    HRESULT hr = S_OK;

    //
    // SDK Note:
    //
    // If a SoH validation code determines that it needs to contact an external
    // server to assist with validation, it must start a separate helper thread
    // to contact the server, and return E_PENDING in this thread. When that
    // occurs, this thread must exit to the SHV Host, returning the E_PENDING
    // result; the helper thread should independently determine the final
    // validation result, generate the response SoH, and call the SHV Host's
    // Callback interface.
    //
    // This SHV handles the Validate() call asynchronously. Validate() method
    // return with hr = E_PENDING and does the processing of SoH request and
    // generating SoHResponse in a separate thread.
    //
    // SDK Note:
```

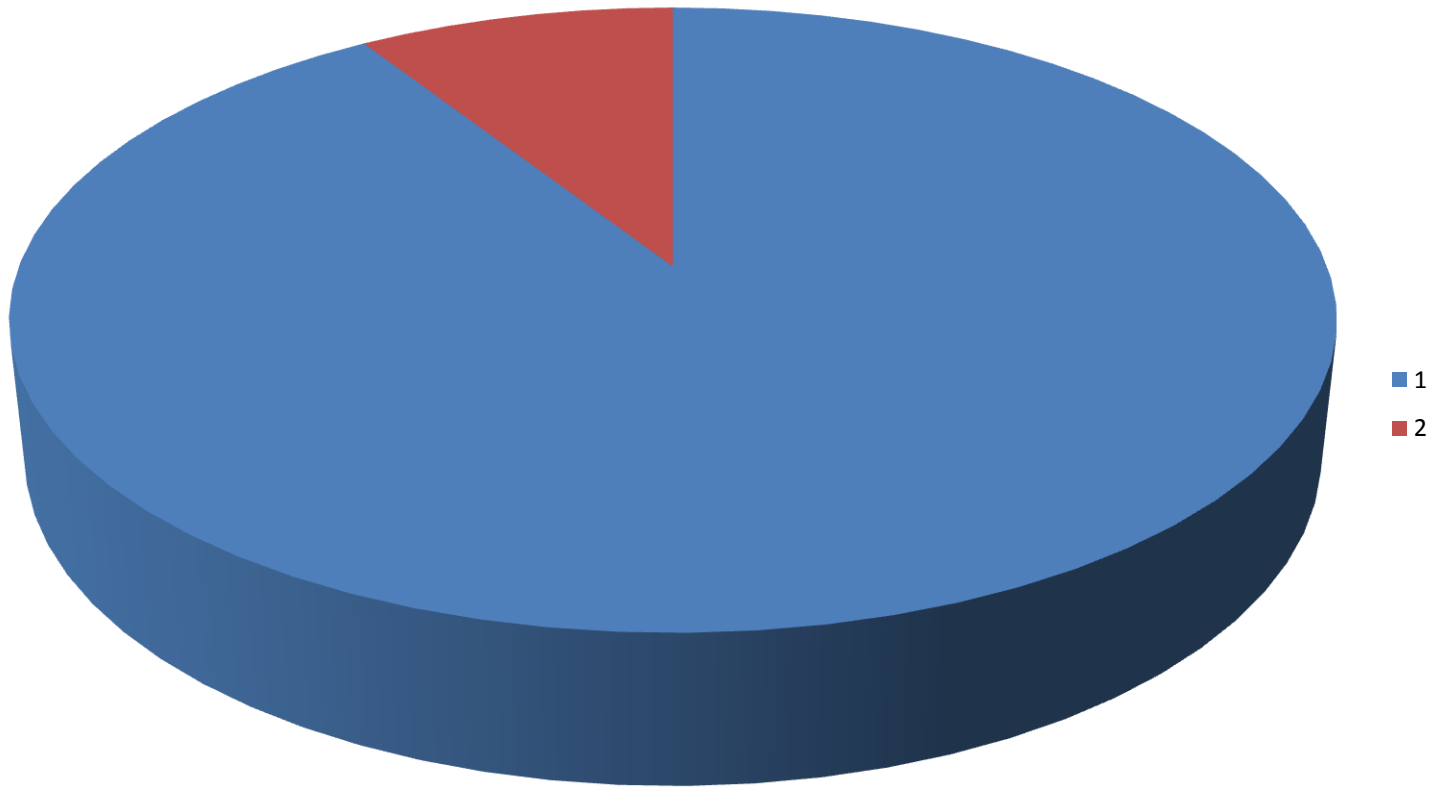
# Develop SHV

# Test

# Market





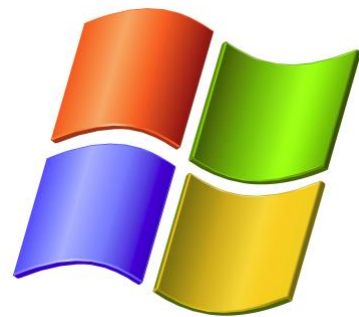


# OS Dominance



# Microsoft Partner Program

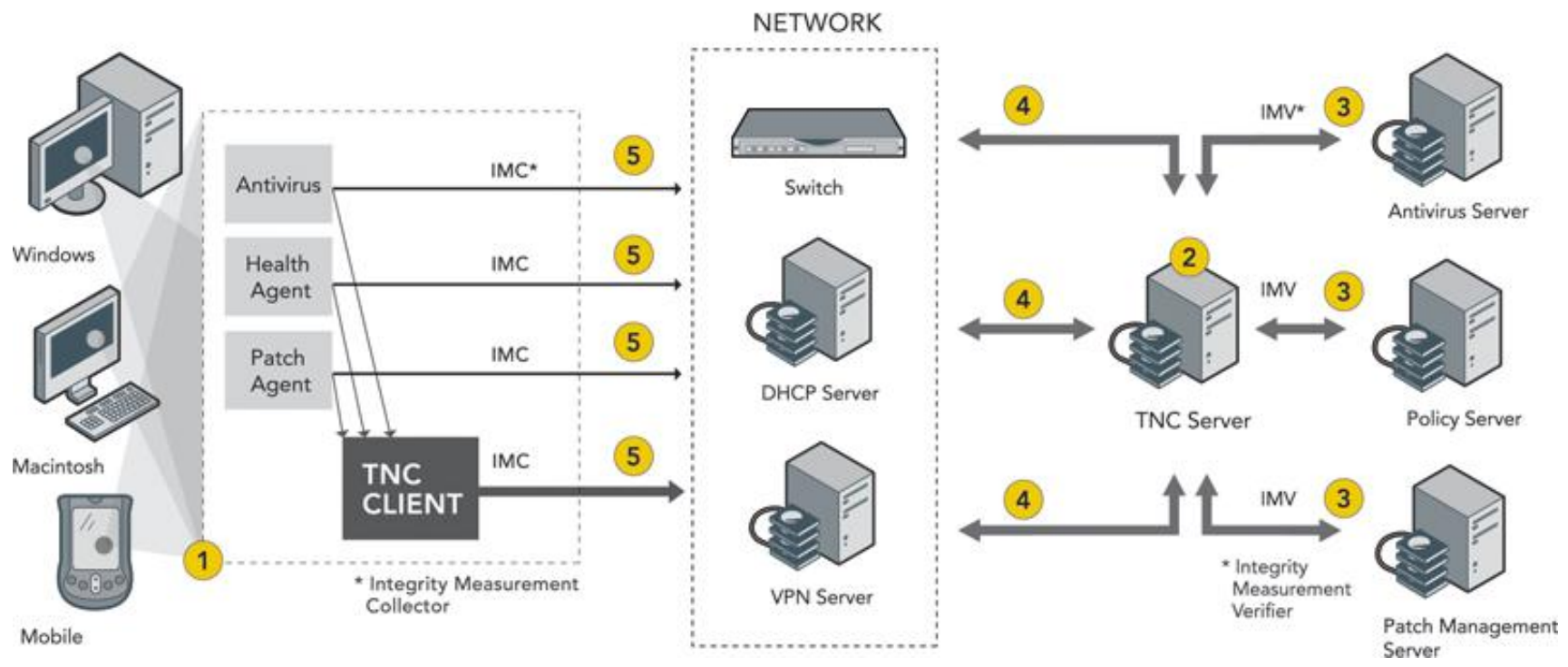




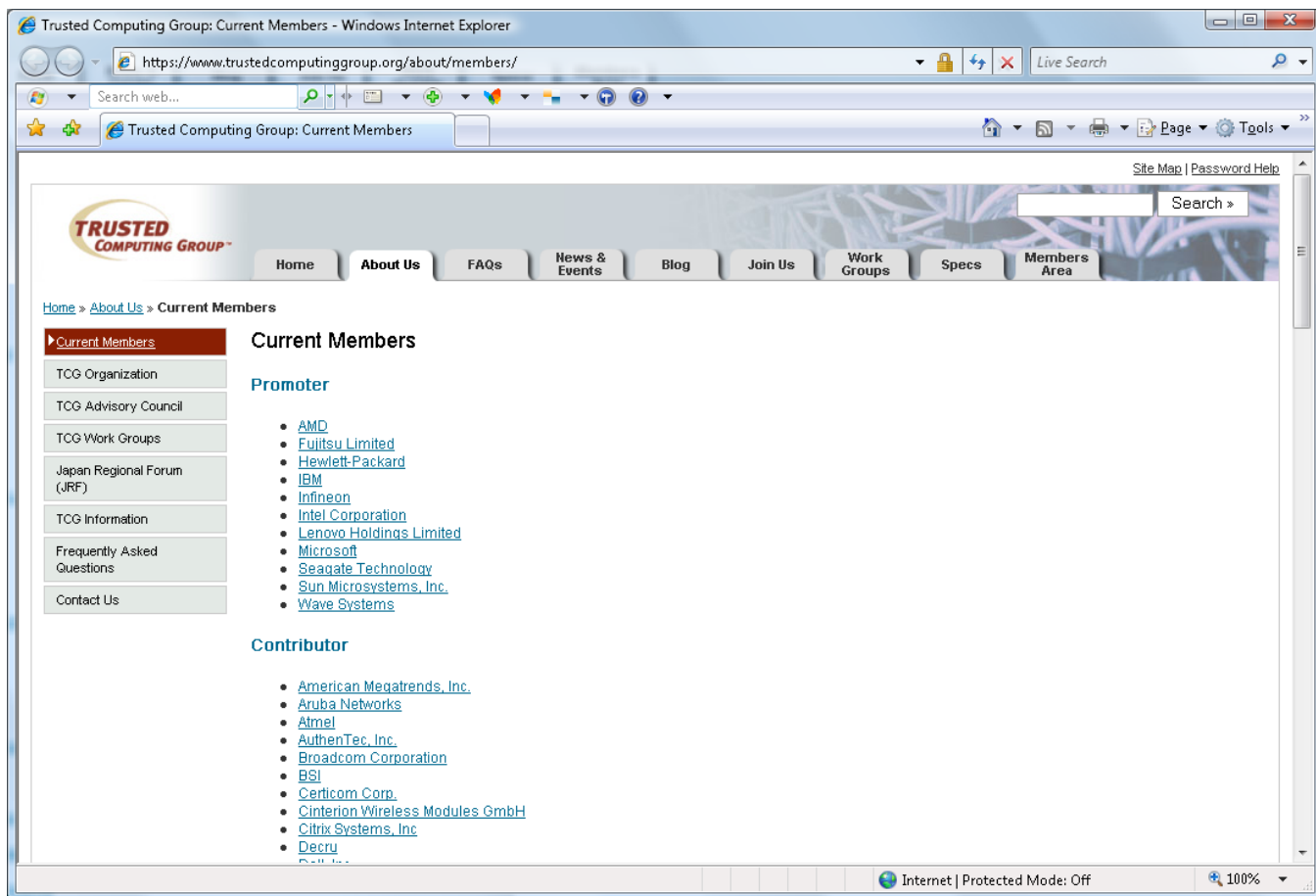
**only.**



# TNC ARCHITECTURE

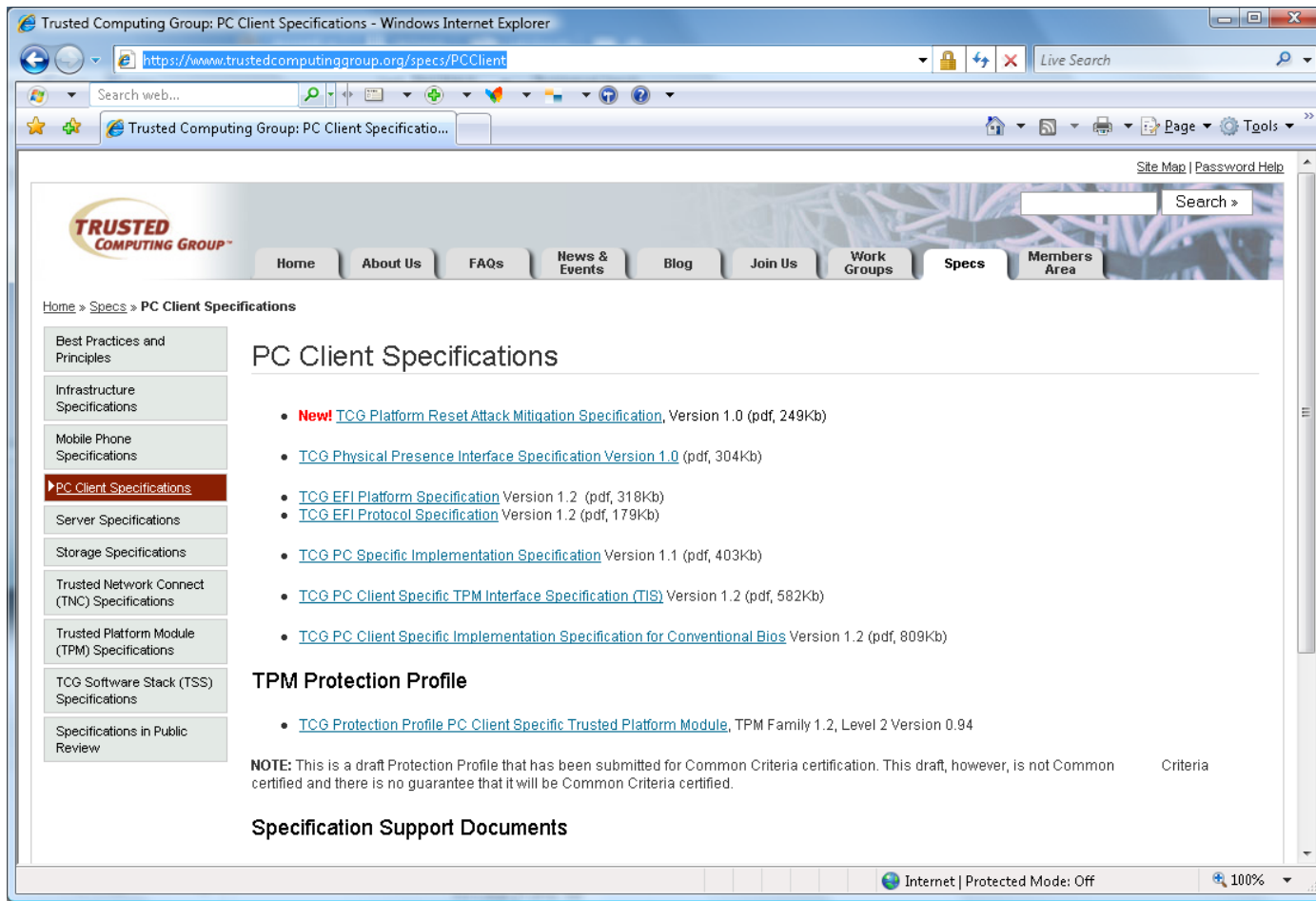


1. Endpoint connects to the network
2. TNC client collects endpoint health state.
3. Endpoint health state is communicated to TNC Server
4. Security policy decision is passed to network infrastructure
5. Endpoint is grant/denied/quarantined access to the network



TNC





# Develop IMC / IMV

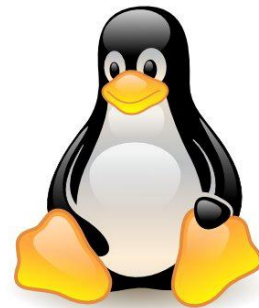
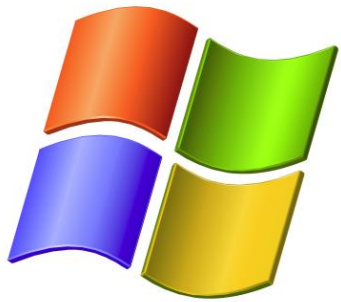


# Test

# Market











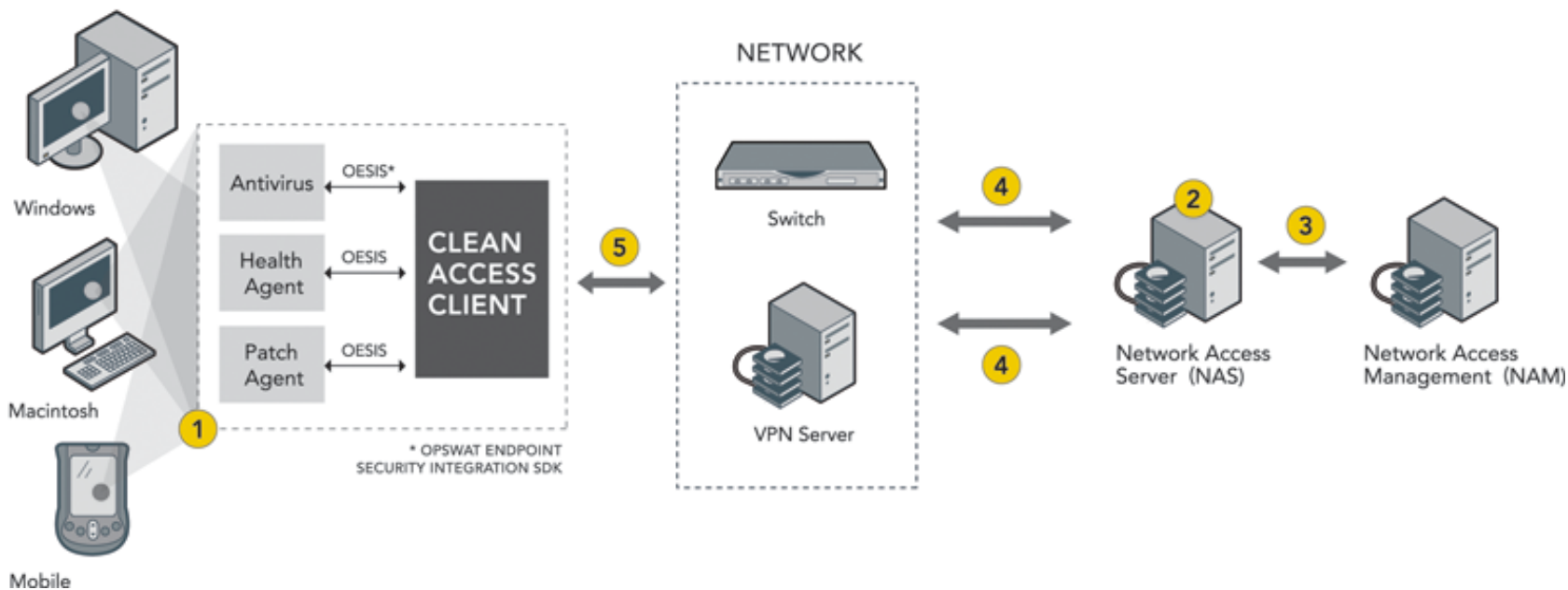
**Slow adoption.**



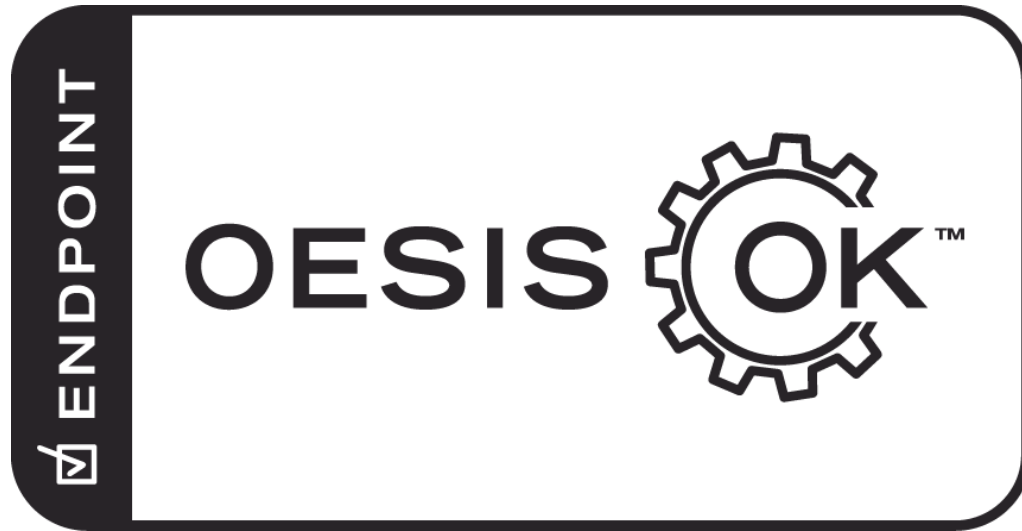
# Development Costs \$

# Cisco NAC and Other Frameworks

# CISCO NAC (CLEAN ACCESS) ARCHITECTURE



1. Host assessment via OESIS Framework
2. Host info sent to Policy Server
3. Policy Server validates policy against application management server settings
4. Results are communicated to the network device infrastructure
5. Endpoint is grant/denied/quarantined access to the network



Submit applications to  
**OESISOK™**

Home | My Account | My Packages | Upload New Package | Administrator Menu

### Create New Package

Package Info

Package Name *	Package Version *	Package Type *
<input type="text" value="Virus Bulletin"/>	<input type="text" value="2008"/>	<input checked="" type="checkbox"/> Antivirus (signature) <input checked="" type="checkbox"/> Antivirus (behavioral) <input type="checkbox"/> Antispyware (signature) <input type="checkbox"/> Antispyware (behavioral) <input checked="" type="checkbox"/> Firewall <input type="checkbox"/> Antiphishing <input type="checkbox"/> Hard Disk Encryption <input checked="" type="checkbox"/> Peripheral Protection <input checked="" type="checkbox"/> VPN <input type="checkbox"/> Health Agent <input type="checkbox"/> Patch Management <input type="checkbox"/> Backup Client

Marketing Names

License Type *	Licensed Info
<input type="text" value="Select a license type..."/>	<input type="text"/>

Operating Systems *	Supported Languages *
<input type="text" value="Select a Base Platform..."/> Select an Operating System	<input checked="" type="checkbox"/> U.S. English <input type="checkbox"/> Danish <input type="checkbox"/> Finnish <input type="checkbox"/> German <input type="checkbox"/> Hebrew <input type="checkbox"/> Italian <input type="checkbox"/> Korean <input type="checkbox"/> Polish <input type="checkbox"/> Portuguese (Portugal) <input type="checkbox"/> Simplified Chinese <input type="checkbox"/> Traditional Chinese
	<input checked="" type="checkbox"/> Czech <input checked="" type="checkbox"/> Dutch <input type="checkbox"/> French <input checked="" type="checkbox"/> Greek <input type="checkbox"/> Hungarian <input type="checkbox"/> Japanese <input type="checkbox"/> Norwegian <input type="checkbox"/> Portuguese (Brazilian) <input type="checkbox"/> Russian <input checked="" type="checkbox"/> Spanish

# Upload Anti-malware Packages



Current Participants - Network Admission Control - Cisco Systems - Windows Internet Explorer

http://www.cisco.com/web/partners/pr46/nac/partners.html

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**Current Participants**






### Network Admission Control Current Participants

Find out more about Participants with NAC certified, shipping solutions by clicking the "NAC Certified/Shipping" tab below.  
Find out more about Participants who are developing solutions by clicking the "Developing NAC Solutions" tab below.  
For more information about the NAC Partner program, please contact [nac\\_program@cisco.com](mailto:nac_program@cisco.com).

**NAC Certified Shipping Product** **Developing NAC Solutions**

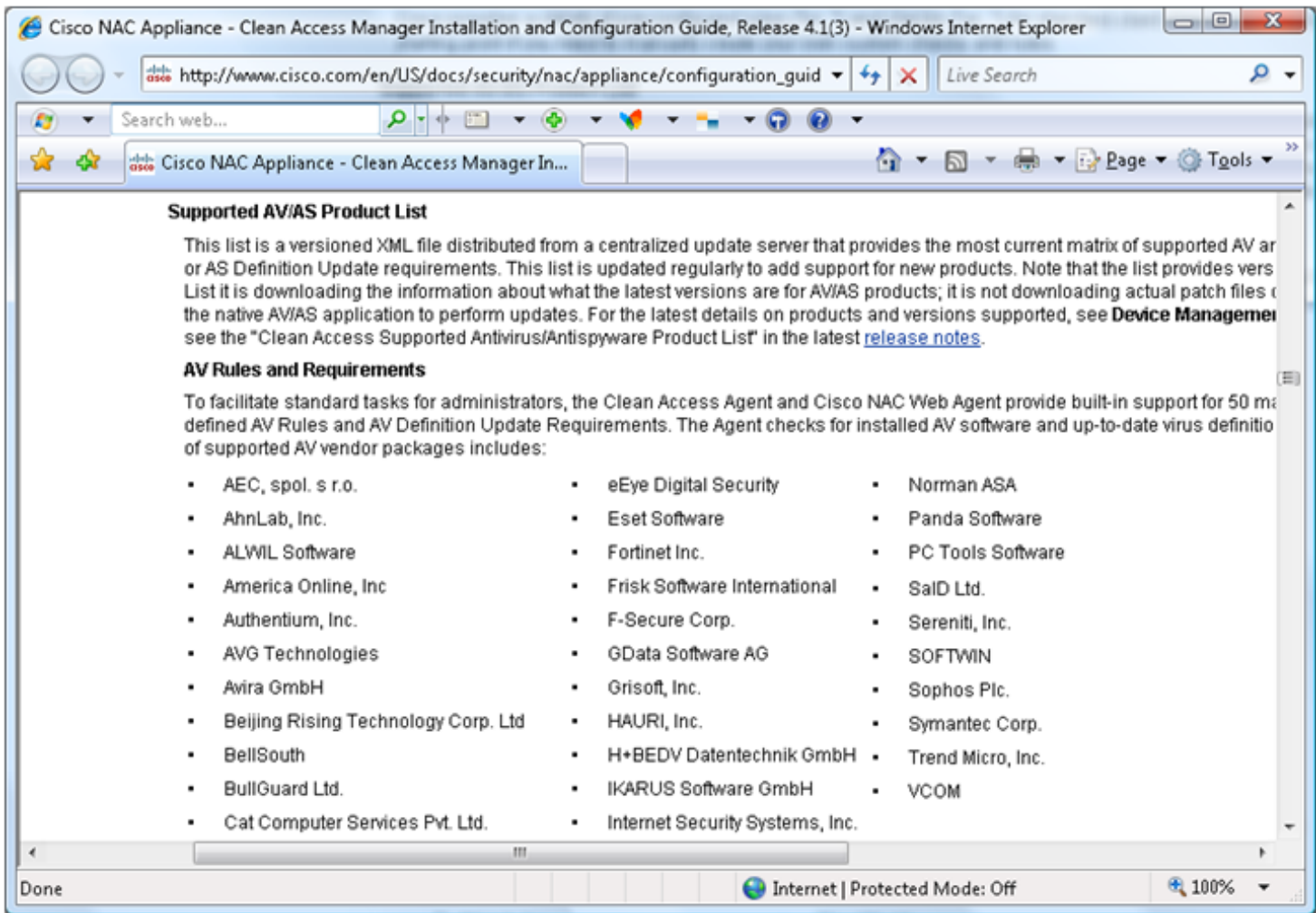
#### Shipping Product



Company	Product Information
 AhnLab <a href="#">AhnLab</a>	V3Pro2004 for NAC
 Belarc <a href="#">Belarc</a>	BelManage 2005, BelSecure 2005
 BigFix <a href="#">BigFix</a>	BigFix Enterprise Suite v5
 Cambia <a href="#">Cambia</a>	Cambia CM
 eTrust	eTrust Antivirus 6.0, 7.0, 7.1; eTrust PestPatrol Anti-Spyware Corporate Edition 5.0

Done Internet | Protected Mode: Off 100%





# Get listed in the support charts

## Device Management &gt; Clean Access

Certified Devices

General Setup

Network Scanner

Clean Access Agent

Distribution · Rules · Requirements · Role-Requirements · Reports · Updates

Requirement List | New Requirement | Requirement-Rules

Requirement Type  Do not enforce requirementPriority Antivirus Vendor Name Requirement Name Description Operating System  Windows All  Windows XP  Windows 2000 Windows ME  Windows 98

If user has one of the following products installed, he/she can use the Update button provided by CCA Agent to update the virus definition file if this requirement fails.

OS	Products
Windows XP/2000	Norton AntiVirus: 10.x;Norton AntiVirus 2002: 8.00.x;Norton AntiVirus 2002 Professional: 8.x;Norton AntiVirus 2002 Professional Edition: 8.x;Norton AntiVirus 2003: 9.x;Norton AntiVirus 2003 Professional: 9.x;Norton AntiVirus 2003 Professional Edition: 9.x;Norton AntiVirus 2004: 10.x;Norton AntiVirus 2004 (Symantec Corporation): 10.x;Norton AntiVirus 2004 Professional: 10.x;Norton AntiVirus 2004 Professional Edition: 10.x;Norton AntiVirus 2005: 11.0.x;Norton AntiVirus Corporate Edition: 7.x;Norton AntiVirus Corporate Edition 7.0 for Windows NT: 7.x;Norton Internet Security: 7.x; 8.0.x;Symantec





ResNet  
Guest Internet Access

Search ResNet

GO

California Polytechnic State University

Navigation

Welcome

Logging On

Policies

Requirements

Microsoft Windows

Apple Mac OS X

UNIX/GNU Linux

Register Now!

Supported Security Clients

- ▶ [AntiVirus Clients](#)
- ▶ [AntiSpyware Clients](#)

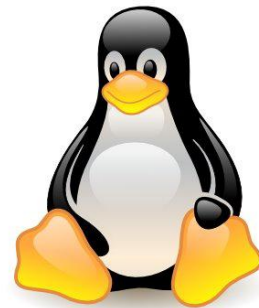
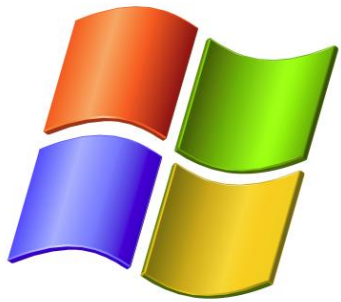
ResNet > Guest Internet Access > Requirements > Microsoft Windows > Supported AntiVirus Clients

### Supported AntiVirus Clients

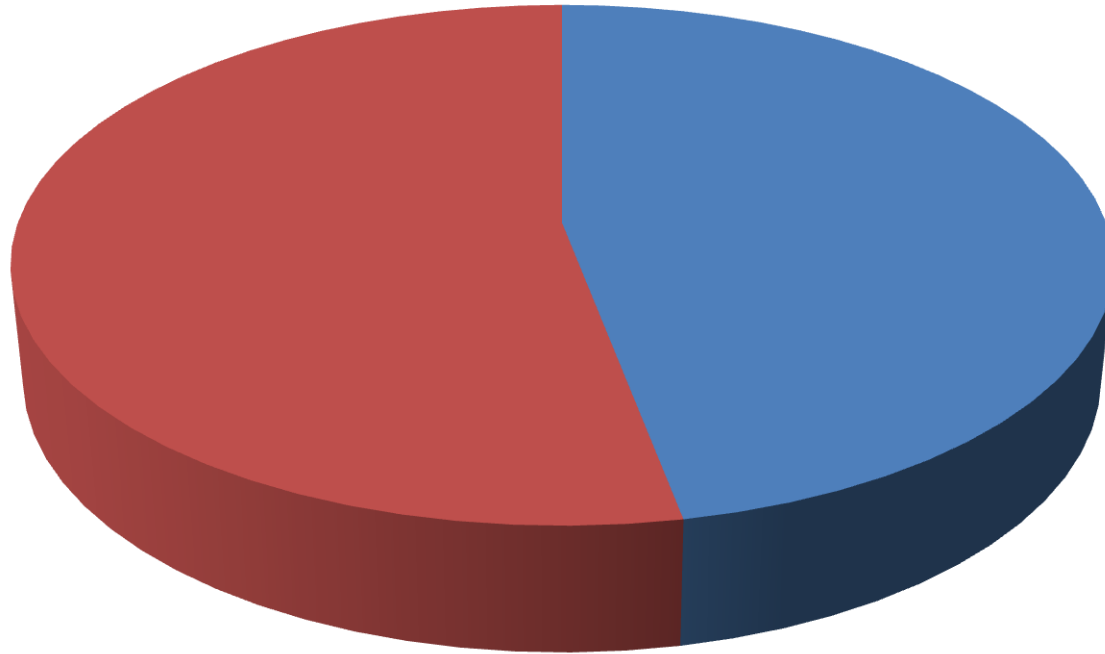
The following table lists the supported antivirus clients for Microsoft Windows 2000, XP, and Vista. If your antivirus client does not appear on the list below, it will not be accepted during the requirement validation process. This list was last updated on 05/15/2008.

Product Name	Product Version
TrustPort Antivirus	2.x
AhnLab Security Pack	2.x
AhnLab V3 Internet Security 2007	7.x
AhnLab V3 Internet Security 2007 Platinum	7.x
AhnLab V3 Internet Security 2008 Platinum	7.x
AhnLab V3 Internet Security 7.0 Platinum Enterprise	7.x
V3Pro 2004	6.x





**\$0** Development Cost



“Cisco’s NAC Appliance holds a commanding 47% market share in the cluttered NAC”  
- **Network world**



  
**CISCO**™ **only.**





# Other **OESISOK™** based NAC Frameworks



# Other Options



# Partner Independently

# Future Development

**Juniper NETWORKS**

Central Manager

Configuration > Host Checker Policy > **Edit Predefined Rule : Antivirus**

Rule Type: Antivirus  
Rule Name: SymantecAV

Criteria

Available Types:

- Sophos Anti-Virus (4.x)
- Sophos Anti-Virus (5.x)
- Sophos Anti-Virus (6.x)
- Sophos Anti-Virus (7.x)
- Sophos Anti-Virus version 3.80 (3.80)
- Symantec AntiVirus Server (8.x)**
- SystemSuite 7 Professional [AntiVirus] (7.x)
- Système anti-virus AVG 7.0 (7.x)
- Sécurité Internet d'affaires Antivirus (5.x)
- The River Home Network Security Suite (1.x)

Selected Types:

- Norton 360 (Symantec Corporation) (1.x)
- Norton AntiVirus (10.x)
- Norton AntiVirus (14.x)
- Norton AntiVirus (15.x)**
- Norton AntiVirus 2002 (8.00.58.x)
- Norton AntiVirus 2002 (8.x)
- Norton AntiVirus 2002 Professional (8.x)
- Norton AntiVirus 2002 Professional Edition (8.x)
- Norton AntiVirus 2003 (9.x)
- Norton AntiVirus 2003 Professional (9.x)

Specify age in days:  
Maximum age of definition files: 0 days. Enter 0 to disable age check.

Virus signatures must be up to date. You must also import virus signatures list.

Licensed to 0132MKV2N0FET0WM  
Host Id: localhost2  
Copyright © 2001-2007 Juniper Networks, Inc. All rights reserved.

Juniper your Net.

# Enforcing Network Access by Quality of Anti-malware applications







# Questions ?

Benny Czarny  
CEO and Founder OPSWAT, Inc.