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Web Security School
Lesson 1

An insider's guide to Web server security

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Web Security School overview

- **Lesson 1**

Webcast: An insider's guide to Web server security
*** Includes: Windows IIS Server hardening checklist**
Network configuration: IIS SMTP Mail Relay Service
Essential vs. nonessential services

Article: Know your enemy: Why your Web site is at risk
*** Includes: Checklist of known IIS vulnerabilities**

Quiz: Test your knowledge of the materials covered in Lesson 1

- **Lesson 2:** How to secure the network perimeter and defeat Web attacks
- **Lesson 3:** How to lock down Web apps and tools for testing online security

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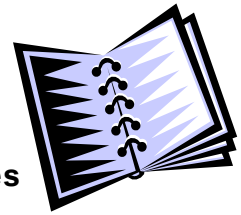
Today's agenda



- Secure installation prerequisites
- Component installation
- Hardening procedures
- Access control and security policies
- Securing other network services
- Secure remote management
- Recovery plans

Laying the foundations for a secure server

- Plan ahead
- Identify and assemble required installation prerequisites
- Install and configure components
- Harden the system
- Enable audit and recovery capabilities

Secure installation requirements

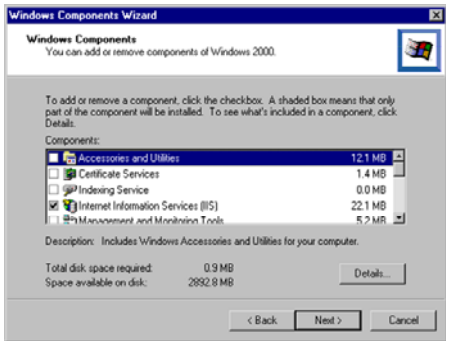
- Provide a physically secure location for your Web server
- Make the Web server a single function server
- Do not make a Web server a Windows network domain controller
- Use two network interface cards

Secure installation prerequisites

- If your Web server will be on the Internet, isolate it from your intranet
- Install multiple drives or drive partitions
- Use NTFS on all hard drives
- Do not install application software or development tools
- Do not install a printer
- Create a list of people granted system-level access

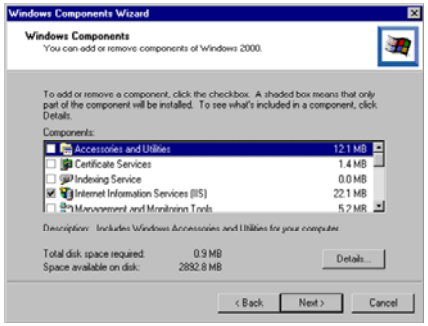
OS component installation

- X ***Accessories and Utilities***
- X ***Certificate Services***
- X ***Indexing Service***
- X ***Management and Monitoring Tools***
- X ***Message Queuing Services***
- X ***Networking Services***



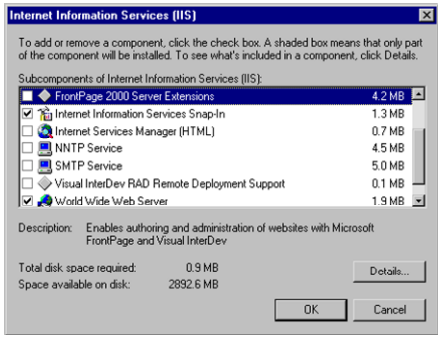
OS component installation

- X ***Other Network File and Print Services***
- X ***Remote Installation Services***
- X ***Remote Storage***
- X ***Script Debugger***
- ? **Terminal Services**
- X ***Windows Media Services***
- ✓ **Internet Information Services**



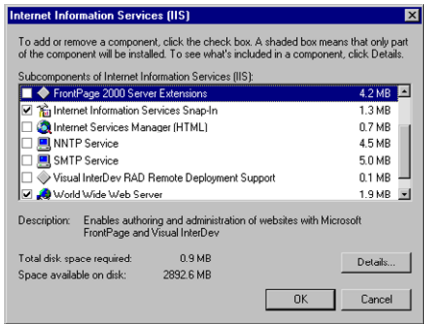
IIS component installation

- ✓ Common Files
- X IIS documentation and help topics
- X FrontPage 2000 Server Extensions
- ✓ Internet Information Services Snap-in
- ✓ World Wide Web Server



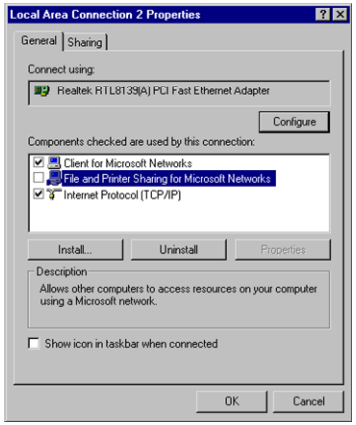
IIS component installation

- X Internet Services Manager HTML
- X File Transfer Protocol (FTP) Server
- X NNTP Service Internet News server
- X SMTP Service Simple Mail Transfer Protocol
- X Visual InterDev RAD Remote Deployment



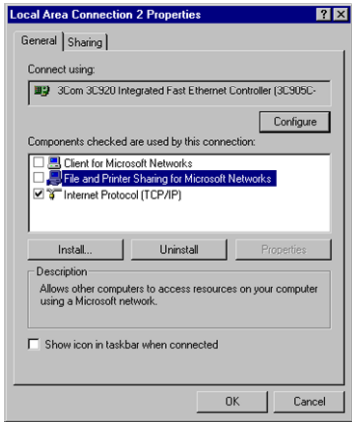
Network component installation

- ✓ **Internal-facing network card**
  - ✓ **Client for Microsoft Networks**
  - X **File and Printer Sharing**
  - ✓ **Internet Protocol (TCP/IP)**
- ✓ **Fixed IP address**



Network component installation

- ✓ **Internet-facing network card**
  - X **Client for Microsoft Networks**
  - X **File and Printer Sharing**
  - ✓ **Internet Protocol (TCP/IP)**
- ✓ **Fixed IP address**
- X **NetBIOS protocol**



Service packs and security patches

- Service packs
- Security patches
- Microsoft Security Notification Service
- Microsoft Baseline Security Analyzer
- Microsoft TechNet Web site

www.microsoft.com/technet/security/

Hardening your Web server

- Hardening tools and guidelines
  - NSA Guide to the Secure Configuration of IIS
    - http://nsa2.www.conxion.com/win2k/download.htm
  - IIS 5.0 Baseline Security Checklist
    - www.microsoft.com/technet/security/
  - IIS Lockdown Tool
    - http://www.microsoft.com/technet/security/tools/locktool.mspx
  - Hisecweb Security Template
    - http://www.securitymap.net/sdm/docs/windows/iis5chk.html

Hardening your Web server

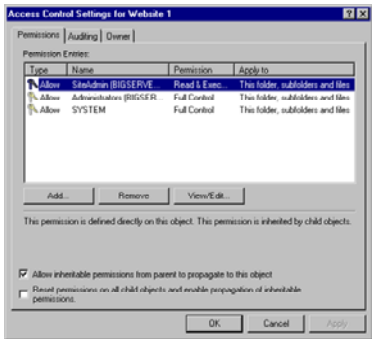
- **Hardening procedures**
  - Run the IIS Lockdown Tool
  - Manually harden the server
    - Disable Nonessential Services
    - Modify the default IIS Server environment
      - Create a new site and root directory for Web content
      - Disable parent paths
      - Remove unnecessary application mappings
      - Remove IIS Internet printing folder
      - Delete all sample directories, help files and scripts
      - Disable IP Address in content-location header
      - Reconfigure how system data is handled

Hardening your Web server

- **Miscellaneous procedures**
  - Remove the SAM File from the WINNT/REPAIR Directory
  - Disable the MS DOS Subsystems
  - Move the IIS Metabase and change the Registry Key
    - http://support.microsoft.com/default.aspx?scid=kb;en-us;Q321142
  - Secure Physical, Boot and Media settings

Access control lists - Administration

- Remove unused accounts from the server
- Remove storage administration rights for the Everyone group
- Create a delegated Administration group for Web content
- Rename Administrator account and set a strong password



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Access control lists – Anonymous access

- Rename default Internet Guest account
- Remove default Internet Guest account rights from Local Security Policy
- Create a custom least-privileged Internet Guest account for anonymous access
- Set renamed Internet Guest account to Read Only access permissions

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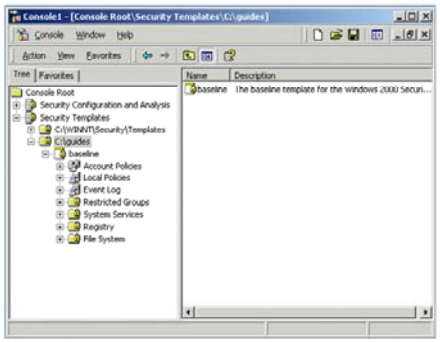
Security policies

- Enforce strong password policies
- Restrict remote logons
- Require Administrators to log on locally OR have a secure remote administration solution
- Ensure accounts are not shared among administrators



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The Hisecweb Security Policy template

The Hisecweb Security Policy template includes settings for the following:

- Account Policies Security for passwords, account lockouts and Kerberos
- Authentication
- Local Policies Logging for security events and user/group rights assignment
- Restricted Groups Local group membership administration
- Registry Security for local Registry keys
- System Services Security and start-up mode for local services
- Security Options Rules for numerous and miscellaneous security settings

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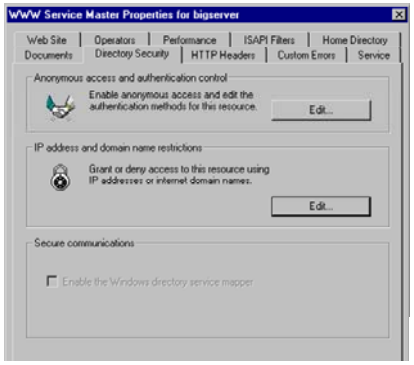
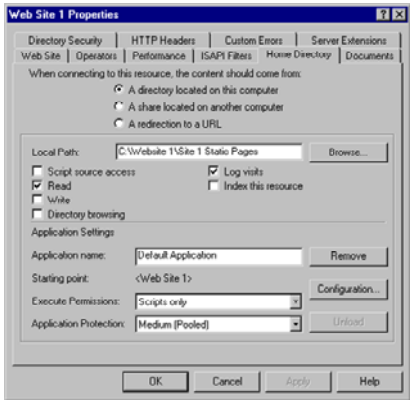
Configuring IIS site properties

- Configure site to allow only Anonymous access
- IP address and domain filters
- IIS Access Permissions



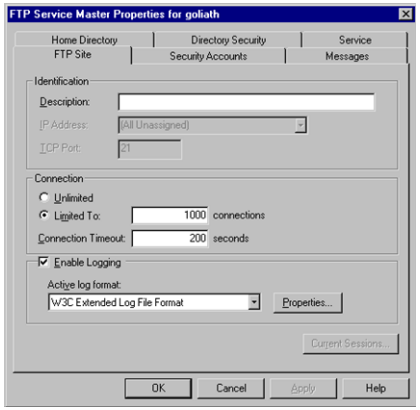
Configuring IIS site properties

- Set IIS Access Control to Read Only in content directories and Read and Execute for scripts
- Disable directory browsing



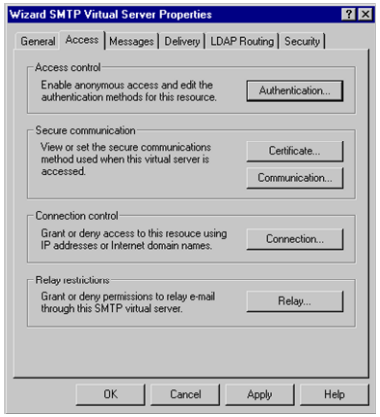
Securing other network services - FTP

- Limit connections
- Log FTP activity
- Configure account access
- Set logon message
- Configure directory location
- Configure folder and file permissions
- Configure access restrictions



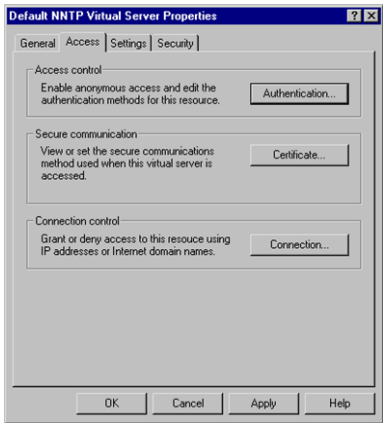
Securing other network services - SMTP

- Limit connections
- Configure access control
- Configure connection control
- Configure secure communications
- Configure relay restrictions
  - www.mail-abuse.com/
  - www.unicom.com/sw/rlytest/



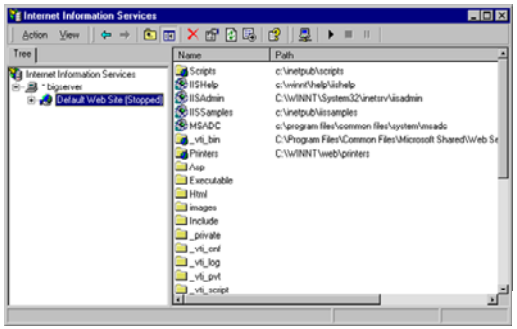
Securing other network services - NNTP

- Configure directory location
- Enable logging
- Limit connections
- Configure access control
- Configure access restrictions
- Disallow control messages



Secure remote management

- Internet Services Manager
  - ✓ VPN
  - ✓ Windows Terminal Services
- X HTML Administration



Recovery plans

- Server content and configuration backup
- Emergency repair disks
- Disaster recovery plan
- Backup security issues
  - Backup privileges
  - Separate logon accounts
  - Media check-in and check-out

Homework

- Visit Microsoft TechNet Security
- Run Microsoft Baseline Security Analyzer
- Update Security Policies
- Sign up for Microsoft Security Notification Service
- Review my checklists to see if you're complying with my recommendations at searchsecurity.com / WebSecuritySchool

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Quiz: Test your knowledge of the materials covered in Lesson 1

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Next in Lesson 2

Webcast: Web attacks and how to defeat them

Article: Life at the edge: Securing the network perimeter

Quiz: Test your knowledge of the materials covered in Lesson 2

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