

Guide to Securing Netscape 7.02

The Network Applications Team
of the
Systems and Network Attack Center (SNAC)

Author:
Curt Doernberg



Updated: April 2003
Version 1.1

SNAC.Guides@nsa.gov

UNCLASSIFIED

This page intentionally left blank.

UNCLASSIFIED

Warnings

- **Do not attempt to implement any of the settings in this guide without first testing in a non-operational environment.**
- Many of the security related issues associated with Netscape are interrelated. The reader is encouraged to gain familiarity with the entire document before implementing the recommendations in this guide.
- This document is only a guide containing recommended security settings. It is not meant to replace well-structured policy or sound judgment. Furthermore, this guide does not address site-specific configuration issues. Care must be taken when implementing this guide to address local operational and policy concerns.
- SOFTWARE IS PROVIDED "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED. IN NO EVENT SHALL THE CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
- This document is current as of the date listed on the cover page. Please keep track of the latest security patches and advisories on the Netscape Security Center at <http://wp.netscape.com/security/index.html>. Also, please read the release notes that come with Netscape.

Trademark Information

Netscape, Netscape Navigator, Netscape Messenger, and other terms are either registered trademarks or trademarks of Netscape Communication Corporation.

Sun, Java, and other terms are either registered trademarks or trademarks of Sun Microsystems.

All other names are registered trademarks or trademarks of their respective companies.

Change Control

Version	Date	Details
1.0	December, 2002	Initial Published Version
1.1	April, 2003	<p>Significant rewrite, including the following changes:</p> <ul style="list-style-type: none"> • Added this change control section. • Reformatted Chapter 2 into tabular form. • Added undocumented method for installing Mail/News without AIM/ICQ in Chapter 2 Note 1. • Added recommendations for several Mail/News security settings throughout Chapters 3 through 5. • Numbered security settings throughout Chapters 3 through 5 for ease of reference. • Significant expansion of Appendix A to properly address Java's default settings. • Cosmetic changes to the script in Appendix C to aid in cross-reference with security settings in Chapters 3 through 5. • Added functionality to the script in Appendix C to support distribution of files discussed in Appendix A.

Table of Contents

Warnings.....	i
Trademark Information.....	ii
Change Control.....	iii
Table of Contents.....	iv
Table of Figures.....	v
Chapter 1: Introduction.....	1
Intended Audience.....	1
Notation.....	1
Implementation.....	2
Chapter 2: Installation Options.....	3
Note 1 – Mail and Instant Messaging.....	4
Note 2 – Sun Java 2.....	4
Note 3 – Net2Phone.....	4
Chapter 3: Secure Server Connections.....	5
3.1 Privacy & Security:Certificates:Manage Certificates.....	5
3.2 Privacy & Security:Certificates:Manage Security Devices.....	7
3.3 Privacy & Security:Validation.....	8
3.3.1 Privacy & Security:Validation:OCSP.....	8
3.3.2 Privacy & Security:Validation:CRL.....	8
3.4 Privacy & Security:Certificates:Client Certificate Selection.....	9
3.5 Advanced:Proxies.....	9
3.6.1 Mail & Newsgroups Account Settings:<account name>:Server Settings.....	10
3.6.2 Mail & Newsgroups Account Settings:Outgoing Mail.....	10
3.7 Mail & Newsgroups Account Settings:<account name>:Security.....	10
3.8 Privacy & Security:SSL.....	10
Chapter 4: Executable Content.....	13
4.1 Navigator:Helper Applications:Plug-in Finder Service.....	13
4.2 Navigator:Downloads.....	13
4.3 Advanced:Enable Features That Help Interpret Web Pages.....	13
4.4 Advanced:Scripts & Plugins.....	14
4.5 Advanced:Scripts & Plugins:Allow Webpages To:.....	15
4.6 Advanced:Software Installation:Manage Software Installations and Updates.....	15
4.7 Advanced:Software Installations:Update Notifications.....	16
Chapter 5: Preventing Information Disclosure.....	17
5.1 Mail & Newsgroups:Return Receipts.....	18
5.2 Privacy & Security:Cookies.....	19
5.3 Privacy & Security:Images.....	20
5.4 Privacy & Security:Forms:Form Manager.....	21
5.5 Privacy & Security:Passwords:Password Manager.....	21
5.6 Privacy & Security:Passwords:Encrypting versus Obscuring.....	22
5.7 Privacy & Security:Master Passwords.....	22
5.8 Privacy & Security:Master Passwords:Master Password Timeout.....	22
Appendix A: Java Runtime Environment.....	23
Java's Certificate Authority Store - cacerts.....	26
Creating the pubcerts keystore.....	28
Setting the keystore.....	29
Adding permissions for specific applets.....	30
File Replication.....	30
Appendix B: Netscape Security References.....	31
Appendix C: Automation Summary and Sample Logon Script.....	32
Automation Summary.....	32
Sample Logon Script.....	33

Table of Figures

Figure 1 - Privacy & Security:Master Passwords	1
Figure 2 - Certificate Manager	5
Figure 3 - Downloading Certificate	6
Figure 4 - Certificate Manager	7
Figure 5 - Privacy & Security:Certificates:Manage Security Devices	8
Figure 6 - CRL Import Part 1.....	9
Figure 7 - CRL Import Part 2.....	9
Figure 8 - Edit Ciphers	11
Figure 9 - Advanced.....	14
Figure 10 - Mail & Newsgroups:Return Receipts	18
Figure 11 - Privacy & Security:Cookies.....	19
Figure 12 - Privacy Settings.....	20
Figure 13 - java.policy initial settings	24
Figure 14 - The usePolicy Policy Entry	25
Figure 15 - Listing Certificates	26
Figure 16 - Deleting A CA Certificate.....	27
Figure 17 - Importing A CA Certificate	27
Figure 18 - Importing A Publisher Certificate.....	28
Figure 19 - Keystore Modification.....	29
Figure 20 - Policy Tool with Keystore Entry	29

Chapter 1: Introduction

Intended Audience

This document is intended for an Administrator of a Windows network supporting users running Netscape 7.02. This document can also be used for a standalone machine running Netscape 7.02 on Windows, although the owner of this machine would be responsible for both administrative and user responsibilities mentioned in this document. This document may provide insight for both users of Netscape 7.02 on non-Windows platforms and users of similar versions of Mozilla on any platform; however, this guide was not developed with these environments in mind.

Notation

The term Netscape has at times referred both to Netscape Communications Corporation and its products including a web browser, a web server, and other products. In this document, the unadorned term Netscape is used exclusively to refer to Netscape Navigator 7.02, the current web browser product distributed by Netscape Communications Corporation, as well as the component Netscape Messenger.

Most of Netscape preferences can be found by selecting the Preferences item from the Edit menu. In this document's notation, the first colon-delimited field is the primary entry in the category section, and successive fields (if any) either refer to secondary entries in the category section or sections of the right side panel for that setting. An example of this notation is:

Privacy & Security:Master Passwords:Master Password Timeout (shown in Figure 1)

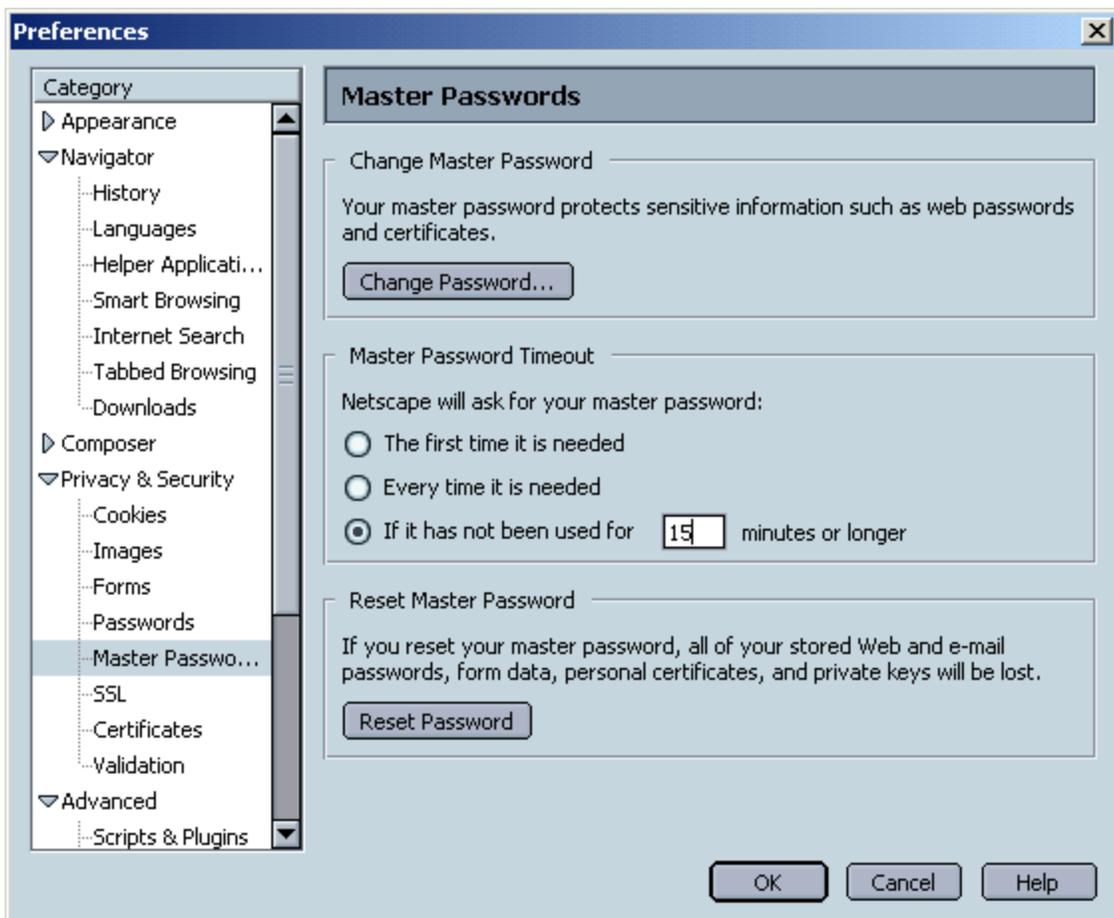


Figure 1 - Privacy & Security:Master Passwords

In addition, a few settings are specific to each mail account. These will be referenced with this notation:

Mail & Newsgroups Account Settings:<account name>:Security

These settings are found only in Netscape Messenger (the Mail/News component), and are found in the Mail & Newsgroups Account Settings item under the Edit menu. When dealing with these settings, it is important to consider proper application of these settings for each account in the Mail/News Account Settings.

Implementation

The simplest way to implement this configuration guidance is to install and configure Netscape as per this document on all the machines and templates that will include Netscape. For cases where Netscape is preinstalled and implementing this guidance is desired without touching every machine or template, and for cases where configuration is to be reapplied periodically, a sample VBS script to modify the user's preferences file is provided in Appendix C. The script implements many but not all of the recommendations in Chapters 3 through 5 as well as Appendix A, and can be customized. Those settings that cannot be automatically set via script will be so noted throughout the document. The sample script can be used as a logon script through Windows 2000 Group Policy. While it is possible to use this script as part of a Windows NT logon script, such a task requires a knowledgeable NT administrator and is beyond the scope of this document.

Chapter 2: Installation Options

The following options are recommended for installation of Netscape. For those options where “no opinion” is stated, they were not used in the base configuration for creating this guide; the decision to install these options should be based on local policy. It should be noted that some of these options relate to separate products that require their own security maintenance. Refer to the vendors’ web sites for the latest information.

These settings are not controllable by logon script; therefore, Netscape must be installed with these options set correctly on each computer or computer template.

Table 1 - Recommended Installation Options by Screen

Setup Type Screen	
Setup Type	Custom Installation
Select Typical Components Screen	
Navigator	Checked
Mail & Instant Messaging	Unchecked (see Note 1)
Spell Checker	No Opinion
Select Additional Components Screen	
Sun Java 2	No Opinion (see Note 2)
Quality Feedback Agent	Unchecked (Crash information has the potential of including the information in the web browser at the time of the crash.)
AOL ART Extensions	No Opinion
Net2Phone	Unchecked (see Note 3)
Macromedia Flash Player	No Opinion
RealPlayer 8	No Opinion
Viewpoint Media Player	No Opinion
Winamp	No Opinion
HP Printer Identifier Plugin	No Opinion
Classic Skin	No Opinion
Canadian region pack	No Opinion
Select Program Folder Screen	
Program Folder	Netscape 7.0
Quick Launch Screen	
Quick Launch	Checked
Additional Options Screen	
Make Netscape.com my home page	No Opinion

Note 1 – Mail and Instant Messaging

One peculiar aspect of the Netscape 7 distribution is that the installation of Mail & News support has been linked to the installation of two Instant Messaging systems: AIM (AOL Instant Messenger) and ICQ. Mail & News support is seen as a feature appropriate for use on enterprise networks, while Instant Messaging is seen as inappropriate in many organizations. Because of the combination of an appropriate feature and an inappropriate feature in this installation option, enabling this installation option is not recommended.

Note that it is possible to install Mail/News without installing AIM/ICQ using an undocumented technique. To do this, perform the following three steps:

1. Download the Mail/News XPI file (called mail.xpi) from Netscape's public FTP server. The XPI file version must perfectly match the version of the Netscape installer used. One such XPI URL for Netscape 7.02 is here:

<ftp://ftp.netscape.com/pub/netscape7/english/7.02/windows/win32/eehxkt/>

2. In the installation GUI, do a custom installation with the Mail/News/AIM/ICQ checkbox off (disabled).
3. Open this XPI file with Netscape, and choose to install it.

Use of this undocumented technique changes the recommendation to:
Mail/News – unchecked, but installed later
AIM/ICQ – unchecked

Note 2 – Sun Java 2

Sun Java 2 provides a fine-grained security model to control privileges available to Java code based on source URL as well as code signing. Unfortunately, the default settings distinguish between privileged and unprivileged Java code only by the user's response to a single prompt. This provides no administrative control over what Java code will run with elevated privileges, nor does it limit the extent of these privileges. In order to provide this control, a considerable amount of administrative work must be performed, as described in Appendix A: Java Runtime Environment. If these administrative measures will not be implemented, consider not installing Java.

Note 3 – Net2Phone

This guide makes no recommendation on the subject of Internet Telephony such as Net2Phone. However, the decision to use such software warrants a separate policy decision. For this reason, the Net2Phone option, as a part of the recommended Netscape installation, is unchecked.

Chapter 3: Secure Server Connections

Netscape offers the ability to create a secure connection to a web server. This secure connection is supposed to provide two guarantees to the user – the web server is the authentic web server for this address (traditionally termed authentication), and there is no possibility of communications being viewed or modified in transit (traditionally termed confidentiality and integrity). Secure connections can also be made to mail servers. The theme of settings in this section is to help bolster Netscape's support of these guarantees.

It is also important to understand two things that Netscape will not do for you. First, when Netscape is not providing a secure connection (as noted by the unlocked lock icon ) , these two guarantees of a secure connection do not apply. It is the user's responsibility to ensure that a secure connection exists before either transmitting or receiving information for which these guarantees are required. Second, a secure connection protects the data in transit, not at rest. It is up to the owners of the web site to protect and properly use the data once it comes into their possession, and it is up to the user to communicate sensitive data only to web sites that they trust with their data.

3.1 Privacy & Security:Certificates:Manage Certificates

By clicking on Manage Certificates, you see the Certificate Manager window, shown in Figure 2, where stored user certificates and trusted root certificates are shown. Make sure that certificates in the trusted root store match relevant policy as to which certificates should be trusted. For example, if an organization has in its policy to support the DoD PKI, the DoD PKI root certificate(s) should be installed.

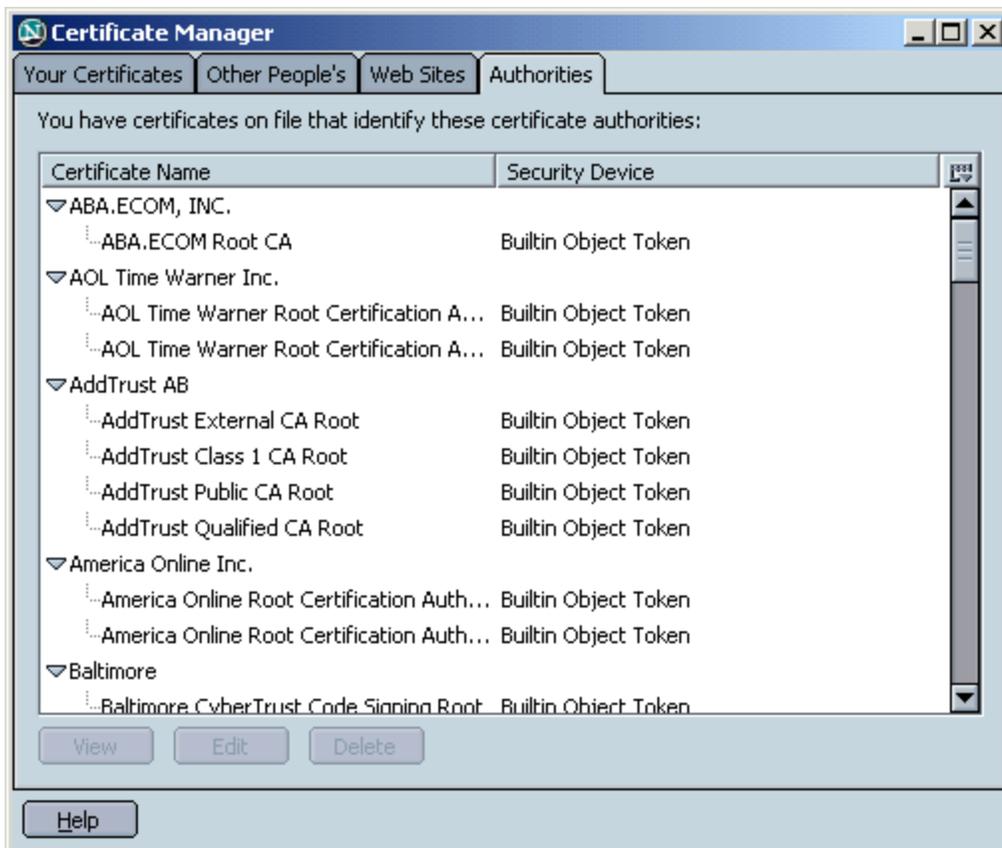


Figure 2 - Certificate Manager

Certificates can be installed by opening the .cer file with Netscape. When doing this, you receive the following dialog (Figure 3):



Figure 3 - Downloading Certificate

In the "Downloading Certificate" dialog you should approve those certificate use purposes for which you trust the certificate. You should click the view button to pull up the Certificate Viewer (Figure 4) and confirm that the SHA1 and/or MD5 fingerprints match those of the certificate as derived from another source (most often a publication for a widely used certificate, or a phone call for a sparsely used certificate).



Figure 4 - Certificate Manager

Script Note: Since the preferences files do not control certificate settings, and because of the way that Netscape stores keys, changes from this section (3.1) must be made manually.

3.2 Privacy & Security:Certificates:Manage Security Devices

This setting allows you to add additional security modules. This would most likely be used with a smart card or other security hardware device. If you are not using special hardware and do not have special need for custom security modules, then no changes need to be made here. For reference, the default state of this window is found in Figure 5.

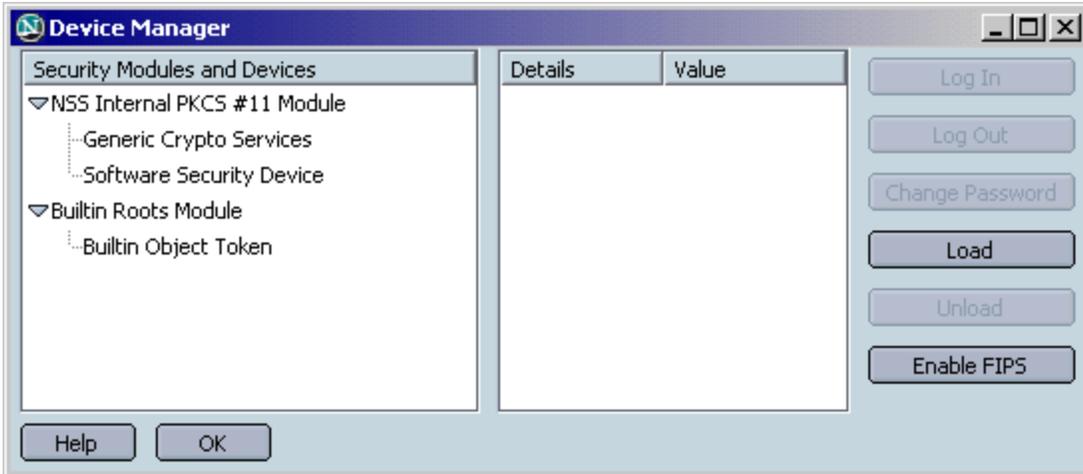


Figure 5 - Privacy & Security:Certificates:Manage Security Devices

3.3 Privacy & Security:Validation

One fundamental component of certificate-based trust is that the Certification Authority (CA) must have a method for revoking that certificate. The two methods supported by Netscape are Certification Revocation Lists (CRLs) and Online Certificate Status Protocol (OCSP). For each CA trusted in the certificate store, Netscape should be configured with at least one method of verifying that a certificate issued by that CA has not been revoked.

Failure of web browsers and CAs to coordinate on automated methods for checking revocation continues to be a security weakness at the time of this writing. Therefore, it may not be possible to specify a validation source for each CA preinstalled with Netscape. This should factor into the policy decision as to which CAs are kept in Netscape's "Authorities" certificate store.

3.3.1 Privacy & Security:Validation:OCSP

The OCSP setting should be set to "Use OCSP to validate only certificates that specify an OCSP service URL".

OCSP is a method that a client can use to verify that a certificate has not been revoked. Certificate Authorities that provide OCSP service will include a URL inside these certificates.

It is possible that an internal or external service could be used to track all invalid certificates by combining information from several CRLs and/or OCSP servers. If such a service is available and appropriate for your network, then the option "Use OCSP to validate all certificates using this URL and signer" should be selected and its information should be filled out as appropriate for this service.

The option "Do not use OCSP for certificate validation" should never be enabled. OCSP validation requires the same network connectivity to access the OCSP server as it does for the certificate that requires it. Therefore, if you can reach the web server that has the certificate, you should also be able to reach the OCSP server to check that certificate's validity. Exceptions to this are most likely a result of limitations imposed by the local firewall or proxy server. Because this feature adds security by checking certificate validity, and because there are typically no connectivity issues preventing it from functioning, OCSP should never be disabled by using this setting.

Script Note: The only setting supported in the configuration script provided is the initial recommendation.

3.3.2 Privacy & Security:Validation:CRL

For those CAs that do not support OCSP, CRLs should be installed into Netscape. The procedure for doing this is to browse in Netscape to the CRL location (such as <http://crl.verisign.com>) and click on the CRL to be installed. You should see a prompt like Figure 6.

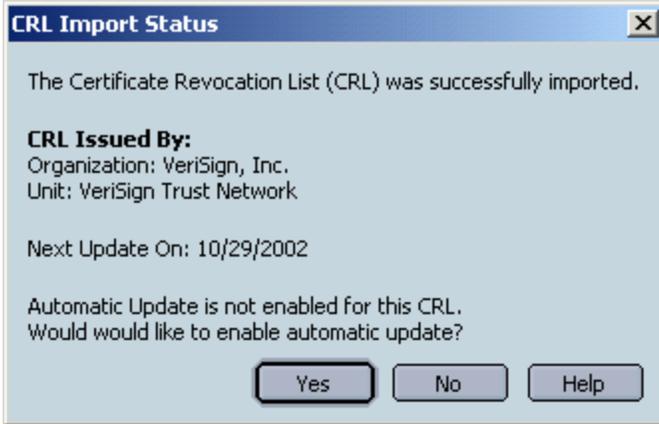


Figure 6 - CRL Import Part 1

Select yes to enable automatic update. Unless you are operating under a policy that specifies these values, the default options to “Enable Automatic Update for this CRL” and “Update 1 Day(s) before Next Update date” (as shown in Figure 7) will get CRL information at a reasonable rate.

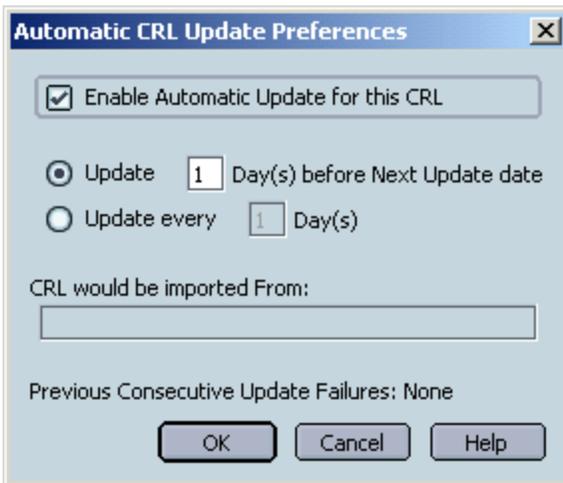


Figure 7 - CRL Import Part 2

Repeat this procedure (starting from browsing to a CRL location) as needed for each CA and all of a CA's CRLs, keeping in mind that a given company might have several CAs and/or CRLs.

This procedure is not performed in the configuration script.

3.4 Privacy & Security:Certificates:Client Certificate Selection

In most cases, this should be set at “Ask Every Time”. Use of a client certificate is usually uncommon enough that the user should be aware of each use.

3.5 Advanced:Proxies

Use of secure connections for important web pages should prevent exploits that rely on a malicious proxy. However, to protect against malicious proxy exploits for ordinary http requests, it is important to ensure that Netscape's proxy settings are set correctly for your network (the correct settings will depend on how your proxy server is set up).

WARNING: Mistakes in the proxy settings will cause web browsers to fail until the settings are corrected. For this reason, implementation in the provided script must be uncommented before it will be active.

3.6.1 Mail & Newsgroups Account Settings:<account name>:Server Settings

3.6.2 Mail & Newsgroups Account Settings:Outgoing Mail

The setting entitled “Use SSL” in the locations named in 3.6.1 and 3.6.2 determines whether SSL is used in communicating with a mail server. The advantage of using SSL is that communication with the mail server, particularly the user's password, is encrypted. This protects against its discovery through network sniffing. The disadvantage is that there is a performance cost for mail servers, and therefore some mail servers do not provide encryption. If your mail server supports encryption, these should be enabled.

Script Note: These setting are not automated since they should be performed at the time that individual e-mail accounts are configured (although you can always change them later).

3.7 Mail & Newsgroups Account Settings:<account name>:Security

The “Certificate Settings” button is the location where certificates for encrypting and signing e-mail can be found. To use Netscape's PKI features for a given e-mail account, that e-mail account must have associated user certificates installed, and the corresponding certificates for this account must be selected in this menu. More information about obtaining PKI certificates will be available either from a local PKI administrator or from a public CA such as Verisign or Thawte.

Script Note: This setting is not automated since installation of certificates must be done on an individual basis.

3.8 Privacy & Security:SSL

The SSL Protocol Versions should be set as follows:

- Enable SSL version 2 – unchecked
- Enable SSL version 3 – checked
- Enable TLS – checked

SSL Warnings should be set as follows:

- Loading a page that supports encryption – unchecked

This warning is generated to alert the user that an SSL session is about to begin. The threat is lack of SSL when it is needed, and the precaution for this threat is for the user to actively check the lock icon (looking for secure  as opposed to the typical insecure ) at the time of information submission. This is generally considered preferable to the user receiving a plethora of alert boxes that will quickly become ignored.

- Loading a page that supports low-grade encryption – checked

If the guidance in this chapter is followed to disable weak encryption protocols and cipher suites, this warning should never appear. If low-grade encryption is allowed, then this will warn the user when it is in use.

- Leaving a page that supports encryption – checked

This will remind the user when a secure session is ending, as well as alert the user if Netscape is alternating between secure communications and insecure communications.

- Sending form data from an unencrypted page to an unencrypted page – checked

This warning is useful because it allows the user an opportunity to reconsider if form data contains information of sufficient sensitivity to require a secure connection. If the user feels that submitting data in the clear is appropriate even after a warning, then Netscape will allow it.

- Viewing a page with an encrypted/unencrypted mix – checked

The information contained in this warning also shows up in the lock icon as follows (🔒). This means that only part of the page is encrypted, and part of the page is not. The reason that this warning should be enabled is because the situation is sufficiently unusual that users do not necessarily recognize the broken lock icon.

Furthermore, as found by clicking Edit Ciphers, the Ciphersuites should be set as follows (Figure 8):

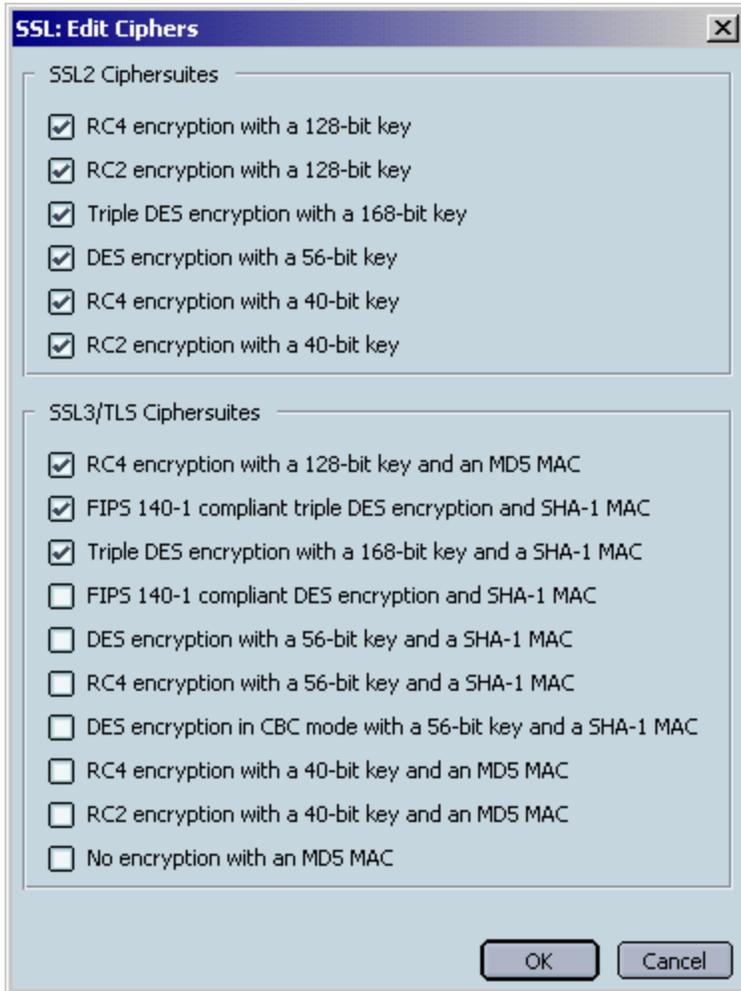


Figure 8 - Edit Ciphers

For the SSL2 Ciphersuites

- All Ciphersuites – checked (If disabling SSL2, these are irrelevant. If SSL2 is enabled because of the warning below, then all SSL2 Ciphersuites should be available for compatibility.)

For the SSL3/TLS Ciphersuites:

- RC4 encryption with a 128-bit key and an MD5 MAC – checked
- FIPS 140-1 compliant triple DES encryption and a SHA-1 MAC – checked
- Triple DES encryption with a 168-bit key and a SHA-1 MAC – checked
- All other SSL3/TLS Ciphersuites – unchecked

WARNING: There are some web servers that do not support encryption that previously required a US export license, and will thus be unable to negotiate a secure link with a web browser that follows these recommendations. If compatibility with these web servers is more important than using good cryptography for all secure connections, then consider the following two changes.

1. Modify SSL3/TLS Ciphersuites to enable those Ciphersuites based on DES. While this only provides 56 bits of encryption, this is sufficient for some purposes. This will add some increased compatibility at the expense of some reduced security.

2. Allow the SSL2 protocol to be used, along with all Ciphersuites that it supports. This will add more increased compatibility at the expense of more reduced security since SSL2 has known security problems.

Chapter 4: Executable Content

Netscape interprets much more than HTML. It is common to see web pages that include images, scripting, embedded objects, and many other features. The possibility exists that some object or code that is part of a web page could cause malicious code from that website to run on the local machine. The theme of settings in this section is limiting the types of objects and code that Netscape can view to those that do not provide such an automated entry for malicious code.

It is important to understand what Netscape will not do in terms of preventing Executable Content threats. The best-configured Netscape will not stop you from going to a website, downloading an executable containing a virus, and running that executable (other security measures, such as virus protection software and least privilege user accounts will reduce exposure to this threat, but might not eliminate it). While Netscape should prevent automatic execution of malicious code, it is the user's responsibility to only manually run those mobile code types allowed by policy.

4.1 Navigator:Helper Applications:Plug-in Finder Service

The option "Always use the Netscape Plug-in Finder Service (PFS) to get plug-ins" should be checked.

Plug-ins are additional applications that allow Netscape to display data of formats it cannot display itself, such as Acrobat, Flash, RealPlayer, and various others. This option only matters when Netscape is presented with a page including a type of file it does not already possess a plug-in for.

If this option is checked, Netscape will query a CGI script at netscape.com for a URL to an installer for a plug-in that will handle the new type. If this option is unchecked, then the plug-in can be downloaded with user confirmation from a URL specified by the owner of the web page (although the netscape.com CGI script will be used if this field is not specified).

Neither of these options is a desirable state of affairs; automatic installation is something that was mentioned in the introduction to this section as something to avoid. It is preferable that acceptable plug-in applications be selected and installed by the Administrator in advance, and that users not have the ability to install additional applications. However, if forced to select someone to provide automatic plug-in installation over the Internet, Netscape Communication Corporation should be trusted as the authority on which applications are safe for use with their browser.

4.2 Navigator:Downloads

The option "When starting a download" should be set to "Open a progress dialog" or "Open the download manager". Do not set this option to "Don't open anything".

This setting determines what should appear to the user when a file download is begun. While this setting seems to have marginal security significance, the possibility of files silently being downloaded is sufficiently undesirable that the "Don't open anything" option should not be selected.

4.3 Advanced:Enable Features That Help Interpret Web Pages

The "Enable Java" option (shown in Figure 9) can be checked. Java has a good security model for which actions are appropriate for mobile code. It is implemented in a way that unsafe actions are dependent on a Java policy. For this reason, Java is considered safe enough to run code with no additional privileges. Unfortunately, the default Java policy gives the decision of granting additional privileges to the user. For more information on this and other Java plugin information, consult Appendix A.

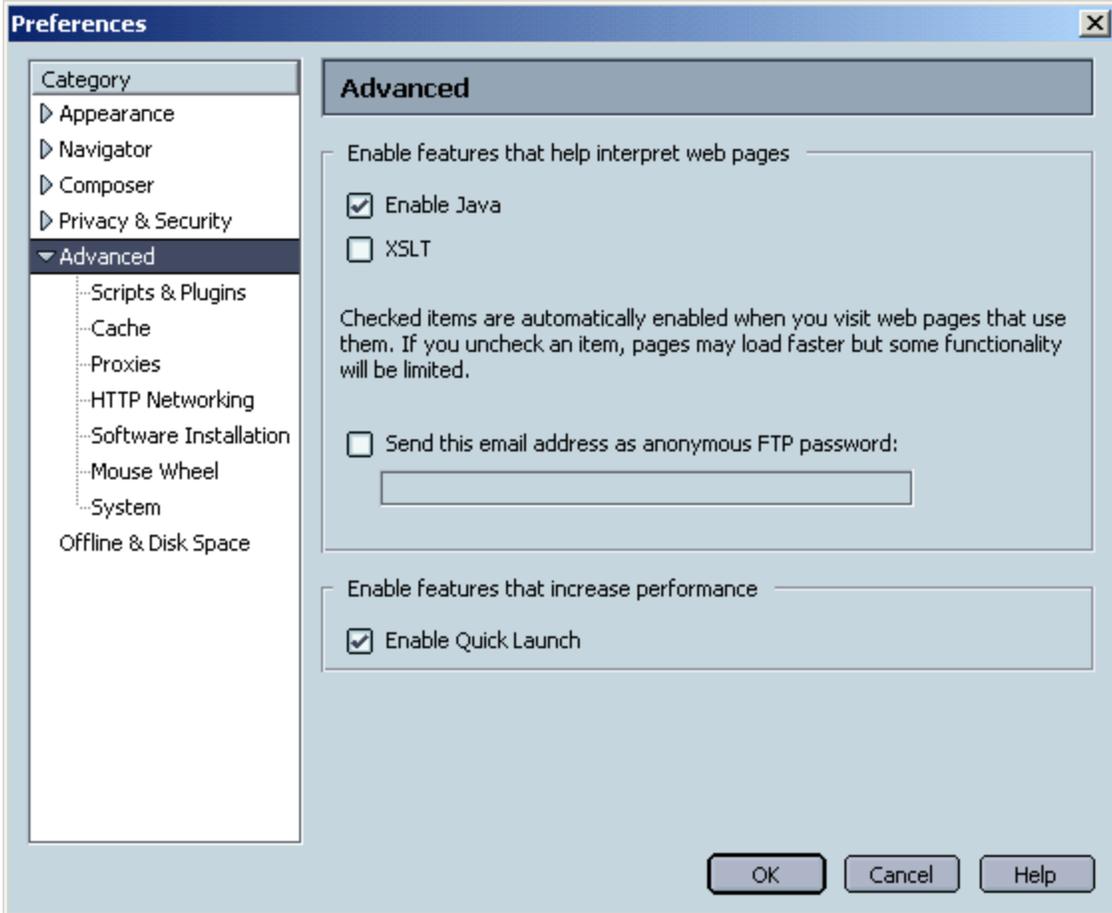


Figure 9 - Advanced

The XSLT option (also shown in Figure 9) should be unchecked. XSLT is a standard language used for transforming XML documents into other formats including HTML and alternate XML. Because it is a new language, it is likely that the security models for both the language and Netscape's implementation of the language have not yet been thoroughly tested; therefore, it should be turned off. Note that server-side XSLT will be unaffected by this option.

WARNING: When presented with a page that expects to use XSLT, and XSLT is disabled, Netscape may either display a blank page or display the raw XML. XSLT is only used sparsely at the time of this writing, so this does not appear to be a significant problem. If inability to display XSLT is a problem for your users, consider either recommending that they enable XSLT on a per page basis or changing the XSLT setting to checked.

4.4 Advanced:Scripts & Plugins

The "Enable JavaScript for Navigator" option should be checked. Netscape's implementation of JavaScript is designed to limit functionality to that appropriate for use by a web page. Many web pages use JavaScript in ways that enhance the user's web browsing without posing any additional security risks. While there have occasionally been flaws in JavaScript implementations, and while web sites continue to have XSS (Cross-Site-Scripting) vulnerabilities, overall JavaScript provides more benefit than it adds risk for most environments.

The "Enable JavaScript for Mail & News" option determines whether JavaScript embedded in Mail & News messages will be allowed to execute. While Netscape's ability to run mobile code is safe enough for web pages that you choose to visit, Netscape should not run mobile code that is sent to you in e-mail.

In addition, there are few ways in which these features add value to typical mail and news messages. For these reasons, this feature should be disabled.

Note: Netscape displays HTML attachments in-line. These are covered by the "Enable JavaScript for Mail & News" preference. If you open the attachment in the web browser, it then becomes covered in the "Enable JavaScript for Navigator" preference. Users should therefore avoid opening untrusted HTML attachments using the browser when possible.

The "Enable Plugins for Mail & News" option allows control of whether plug-ins can run in HTML e-mail messages. As with JavaScript, this feature has too high a risk for messages that other people send to you. For this reason, this feature should be disabled.

4.5 Advanced:Scripts & Plugins:Allow Webpages To:

This group of settings allows you to disable the features of JavaScript considered most easily abused. These features, along with recommendations, are summarized in Table 2:

Table 2 - JavaScript Features

Feature Name	Feature Recommendation
Open a link in a new window	Enabled
Move or resize existing windows	Enabled
Raise or lower windows	Enabled
Hide the status bar	Disabled
Change the status bar text	Disabled
Change images	Enabled
Create or change cookies	Disabled or Enabled
Read cookies	Disabled or Enabled

The "Hide the status bar" and "Change the status bar text" options allow scripts to override Netscape's use of the status bar with their own. Netscape typically uses the status bar to display the URL associated with a link that the user has positioned their mouse over. This can be used to display accurate human-readable text, such as displaying "The United States Navy" for a link to www.navy.mil. However, it could also be used to obscure a malicious URL, where such a malicious URL could point to the wrong server (PayPa1 instead of PayPal) or contain an attack (such as Unicode or XSS). These two options should, therefore, be disabled.

The "Read cookies" and "Create or change cookies" options deal with the ability to read and write cookies from a script. These options allow restrictions above and beyond those in the section Privacy & Security:Cookies. One reason to consider using these options is for protection from XSS attacks. Although it is the web server's responsibility to prevent XSS attacks from reaching Netscape, some web servers still have vulnerabilities of this type. On the other hand, setting cookies from a script can be a completely legitimate behavior, and thus disabling these options will break websites that rely on this behavior. The "Read cookies" and "Create or change cookies" options should be disabled if preventing XSS attacks is more important than allowing this type of legitimate cookie use; otherwise it should be enabled.

The options not explained do not appear to have security implications, though some may be disabled to reduce JavaScript's use in displaying extraneous content. This may also prevent some legitimate content from displaying as well.

4.6 Advanced:Software Installation:Manage Software Installations and Updates

The "Enable software installation" option should be unchecked for everyone on an enterprise network, although for different reasons.

For typical users, they should not have permission to install the updates, so enabling software installation only allows the user to see a later and more confusing error message.

For Administrators, allowing them to install updates automatically may remove some of the impetus to go through proper procedure to download, verify, and install new software and software updates throughout their network rather than just on their own machines.

On a self-administered system, the "Enable software installation" option can be checked if the update mechanism specified in the relevant policy is automatic updates.

4.7 Advanced:Software Installations:Update Notifications

For typical users, "Check for updates:" should be unchecked. As mentioned above, a typical user should not have the ability to install an update, and therefore giving them notice that an update is available is not useful.

Administrators should have the "Check for updates:" option enabled and set to weekly. This will remind them when it is time to update Netscape, and hopefully cause them to update Netscape throughout the rest of the network.

On a self-administered system, the "Check for updates:" option should be enabled and set to weekly.

Script Note: By default the provided script disables automatic update checking for all users.

Chapter 5: Preventing Information Disclosure

This section deals with security settings that affect ways Netscape stores information about its users, about its users' behaviors, and about the web pages that its users have seen. The most prominent of these methods is the use of cookies, which can be used to track a user's activity on the web. A more recent addition to this section is limiting information automatically provided to those who send unsolicited e-mail. There are two main themes to these settings. The first theme is to limit information available to Netscape because it cannot accidentally disclose information that it does not know. The second theme is to limit ways in which this information can be used, typically by requiring a form of user approval.

These settings only limit the information that Netscape automatically provides. No setting can prevent a user from manually providing more information than appropriate to a website. Websites can and do record user activity even without the help of Netscape supported features, such as cookies, so it is important to only send sensitive information to a website you trust will use that information properly.

5.1 Mail & Newsgroups:Return Receipts

Netscape, if requested by the e-mail's originator, can automatically send return receipts for e-mail. This is not a security concern, but can be a privacy concern. The most significant privacy concern is the use of return receipts to discover who is on an anonymous e-mail list. There is a lesser concern about confirming e-mail address validity (which also can be done using better techniques).

To mitigate information disclosure using return receipts, they can either be disabled altogether or can have preferences depending on properties of the message. The category "If I'm not in the To or Cc of the message" often refers to the anonymous mailing list situation, and therefore should be set to "Never send". The category "If the sender is outside my domain" refers to e-mail from a different DNS domain (aol.com vs. hotmail.com), and will therefore apply to most e-mails. This category should be set to "Ask Me". The category "In all other cases", therefore, refers to an e-mail coming from the same DNS domain and that listed your e-mail address in the To or Cc fields. If e-mail addresses within your DNS domain belong exclusively to your organization, then this can be set to "Always Send"; otherwise it should be set to "Ask Me".

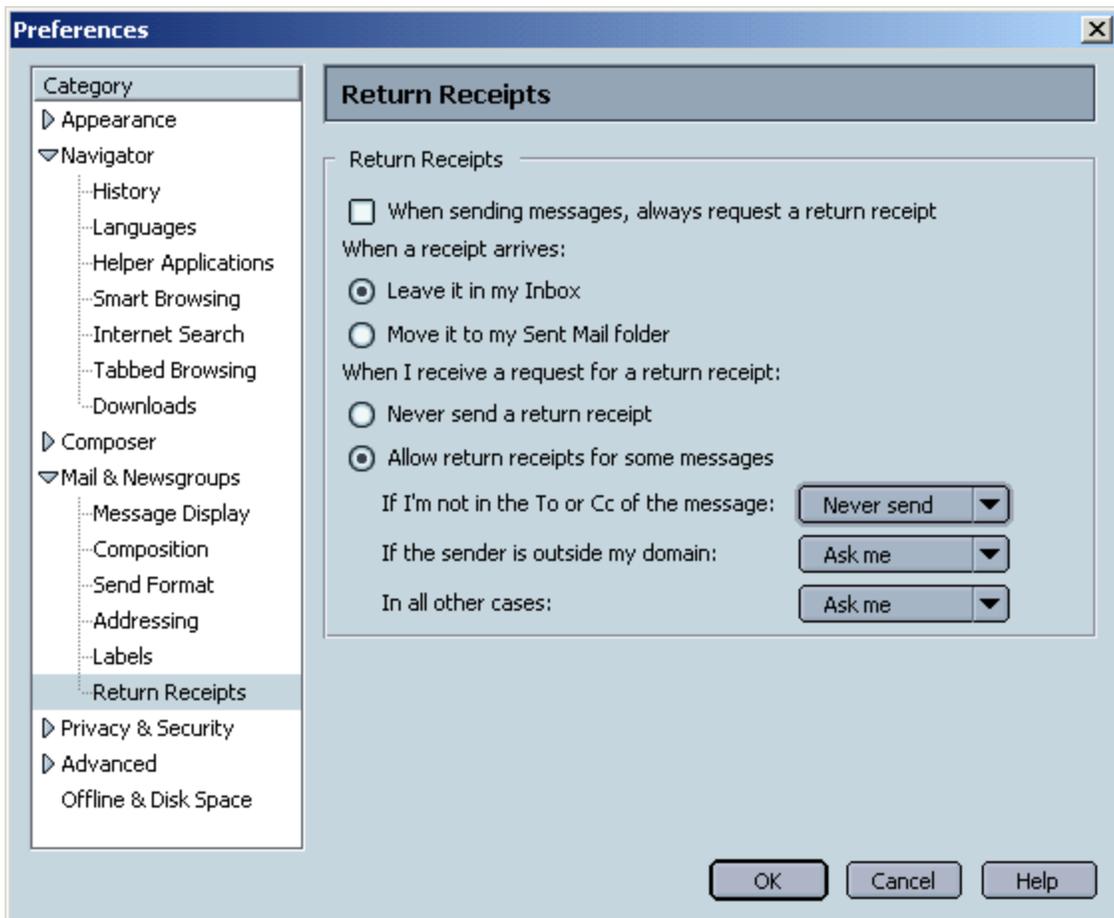


Figure 10 - Mail & Newsgroups:Return Receipts

5.2 Privacy & Security:Cookies

This page controls how Netscape deals with cookies. As shown in Figure 11, this setting should be set at "Enable cookies based on privacy settings". Both the "Ask me before storing a cookie" and the "Limit maximum lifetime of cookies to:" options can remain unchecked.

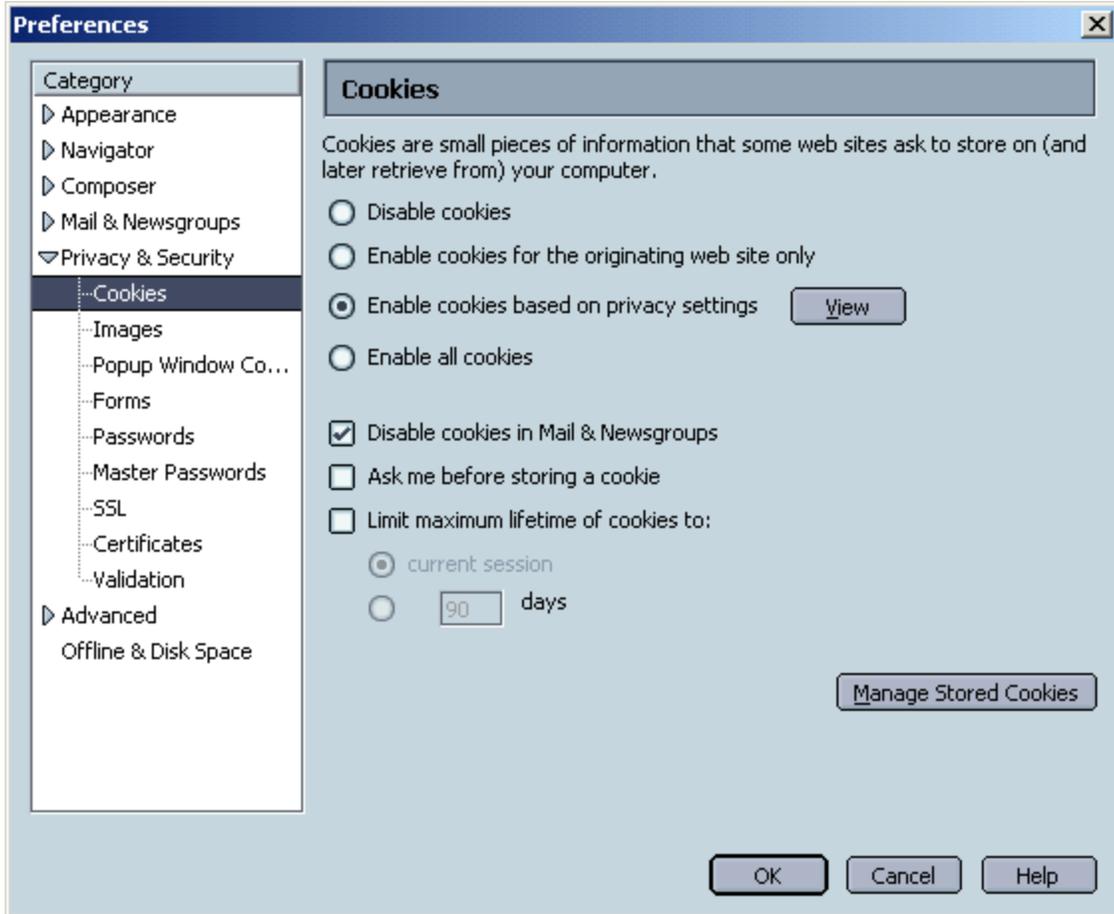


Figure 11 - Privacy & Security:Cookies

The "Ask me before storing a cookie" option should be unchecked because normal web browsing will encounter too many cookies for the user to want to see a prompt for each cookie.

The "Limit maximum lifetime of cookies to" option should be unchecked because there is no added security risk associated with cookies persisting on the hard drive, and there is a positive convenience factor for not having to recreate website-specific preferences.

When a URL is followed, Netscape will send any cookies associated with that URL to the web server. A message could include a URL (such as with the frame tag), causing the browser cookies to be sent during display of the message. This could be used to associate an e-mail address with a web browser. The "Disable cookies in Mail & Newsgroups" feature should be enabled to prevent this behavior.

Furthermore, select “View” and select the predefined Level of Privacy called high, as shown in Figure 12.

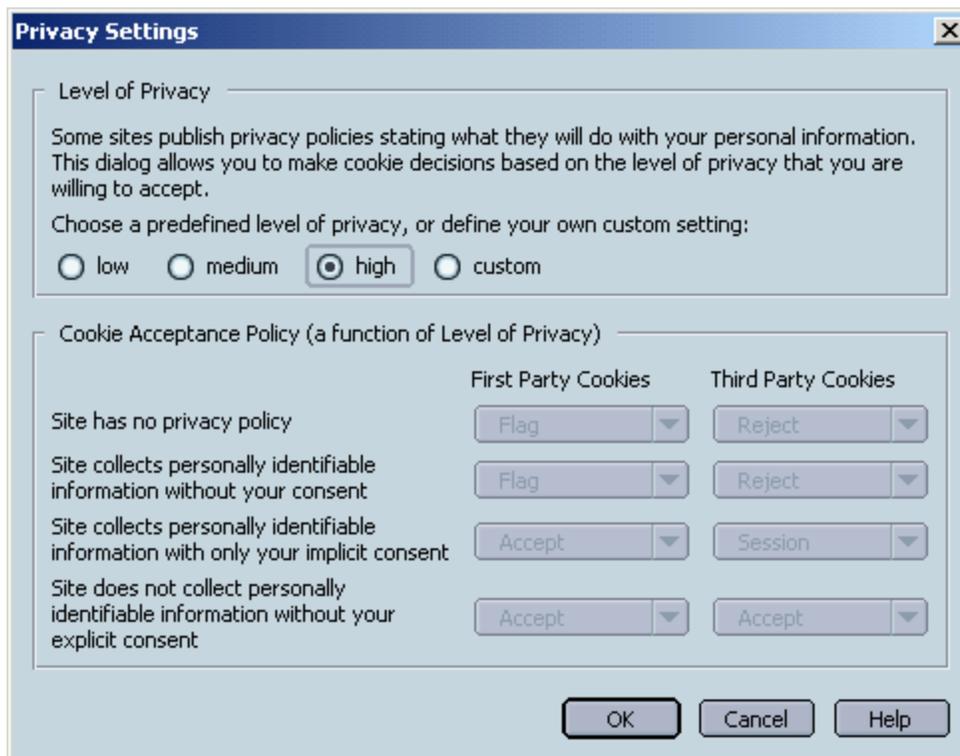


Figure 12 - Privacy Settings

The Platform for Privacy Preferences (P3P) standard for privacy settings specifies that a summary of how the cookie will be used should be sent with each cookie in order to allow web browsers to automatically accept or reject cookies based on a policy. Although many web sites do not yet support P3P, this feature degrades gracefully by having good settings for the category “Site has no privacy policy”. The High privacy level will cause a little eye (👁️) to appear in the bottom right corner to warn you about a first party cookie with either no P3P policy or an unacceptable P3P policy. This privacy level will also block third party cookies with either no P3P policy or an unacceptable P3P policy.

If local policy specifies handling of cookies, or if you have interest in customizing these settings, the recommended mechanism is through the use of a custom value for the Cookie Acceptance Policy. One reason to customize these settings is to make a different tradeoff between functionality and privacy/anonymity. The help button in Figure 12 will provide some useful information, as will the P3P website cited in Appendix B: Netscape Security References. Note that extreme policies that do not rely on P3P, such as treating all cookies as session cookies or rejecting all cookies, could also be implemented using this mechanism.

Script Note: The script currently sets cookie behavior to P3P with the predefined high privacy level. An example of a custom P3P Cookie Acceptance Policy, along with additional information, is available within the sample script. The easiest way to implement your own custom policy via script is to set the desired Cookie Acceptance Policy on one machine, read the resulting value for “network.cookie.p3p” from your prefs.js file, and insert that value into the script as a custom privacy level.

5.3 Privacy & Security:Images

Images stored on web servers can be included in Mail & News messages with image tags including the URL where the image is located. This means that each time that Netscape wants to view the message, it must download the image from the web server (or use a cached copy). In addition to

bandwidth/performance concerns, this behavior can be used to help determine who is on the other end of an e-mail address. The "Don't load remote images in Mail & News" feature should be enabled to prevent this behavior.

This setting has no effect on images included as attachments because image attachments do not pose this privacy concern.

5.4 Privacy & Security:Forms:Form Manager

The option "Save form data from web pages when completing forms" should be unchecked. When checked, and the user fills out a form, Netscape will prompt the user to store the form's data for use in automatically filling out other forms. When unchecked, the user must actively go to the "save form info" or "edit form info" menu items under the form manager submenu of the tools menu.

Netscape can store information along a spectrum of sensitivity from information that could be found in a phone book, to credit card information, to information often used as authentication (including social security number and mother's maiden name). It is preferable that users wishing to take advantage of this feature be forced to actively store information that they feel appropriate in Netscape rather than reactively click OK to a prompt. While theft of stored data does not appear to be a current threat, it is possible that a flaw would allow a malicious website to automatically extract data stored here.

5.5 Privacy & Security:Passwords:Password Manager

The "Remember passwords" option can be checked or unchecked according to policy. In formulating a policy about storing passwords, the following conflicting ideas should be considered:

- If users have too many passwords to remember, then they are more likely to write them down, pick bad passwords, or reuse the same passwords in different places.
- If Netscape knows a password, a possibility (though hopefully a very small one) exists that Netscape could be exploited in such a way that it would use this password without the user's authorization. This risk seems to be partially mitigated through use of Master Password features (see the next three settings).

A good balance between these considerations is that users should allow Netscape to remember passwords only for lower sensitivity websites, and that users remember unique passwords for web sites of higher sensitivity. Determining which level of sensitivity deserves which treatment can be a matter of policy or can be left to the discretion of users.

Script Note: By default, this script leaves use of this feature to the user. Code under the "Remember Passwords Using the Password Manager" section can be uncommented in order to force this feature to be disabled.

WARNING: There is an important dependency between the settings on this page. In order for Netscape to require the user to enter the Master Password as a control factor on Netscape's access to stored data (the Master Password Timeout setting), the "Use encryption when storing sensitive data" option must be checked AND a non-blank Master Password must be set.

5.6 Privacy & Security: Passwords: Encrypting versus Obscuring

The "Use encryption when storing sensitive data" option should be checked.

Although human beings cannot necessarily read passwords out of Netscape's data files, a program designed for this purpose can. By checking this option, it is no longer possible for such a program to automatically translate data files into usernames and passwords. This option provides protection for passwords at rest, and has no effect on Netscape's ability to use passwords in the current user's profile.

5.7 Privacy & Security: Master Passwords

Each user should set their Master Password to a non-blank password according to relevant guidance on selecting good passwords. Good passwords meet length recommendations (minimum 8 characters, but 12 or more is preferable) and contain letters (upper and lower case), numbers, and other characters such as punctuation.

Selecting a Master Password will cause Netscape to request the Master Password before using any protected information. As per documentation, this information includes the following items:

- Web passwords
- e-mail passwords
- stored form data
- personal certificates
- private keys

Script Note: Master Passwords cannot be set by script; users must manually create their own passwords.

5.8 Privacy & Security: Master Passwords: Master Password Timeout

This should be set at "If it has not been used for X minutes or longer", where X is a relatively short time interval such as 15 minutes.

As noted above, once a Master Password is chosen, its input is required before Netscape will retrieve certain types of stored personal information. This setting determines how frequently the Master Password must be input. The setting "The first time it is needed" is not often enough, because a user that allowed the use of protected information shortly after starting Netscape does not necessarily want protected information available to a cross-site-scripting attack later in the day. The setting "Every time it is needed" has the potential to become too cumbersome.

Appendix A: Java Runtime Environment

Netscape includes the 1.4.0_01 J2SE (Java 2 Standard Edition) JRE (Java Runtime Environment) from Sun Microsystems. The JRE is responsible for the security of Java Applets, including Security Monitor verification that behavior is appropriate to policy, as well as verifying digital signatures. This software can be updated from <http://java.sun.com> by getting the latest JRE for your platform. Updated JREs typically include bugfixes, some of which address security concerns.

As of Java 1.3 and later, the security model has changed. This Java 2 security model is intended to grant or deny privileges to signed code based on URL of origin and properties of the signature. Unfortunately, the default configuration has a much simpler model: applets with a signature that the user trusts gets the privilege `java.security.AllPermission` – a blank check to use the full functionality of the Java programming language. In order to administratively prevent the user from allowing applications with untrusted signatures from running with full permissions, the following actions must be performed:

- The `java.policy` file must be modified to change the default prompt behavior to actually abiding by policy.
- If granting any applets extra privileges, the following steps must be performed:
 - The cacerts CA store must be modified to include only those CAs who should be allowed to vouch for the right to use possibly dangerous Java permissions.
 - If giving permissions based on specific code-signing certificates, a pubcerts keystore must be created to include these certificates.
 - The `java.policy` file should be modified to add privileges for each applet executing with extra privileges.
- Finally, the key store(s) and `java.policy` file must be replicated to all computers.

Adding the usePolicy permission

To force signed applets to abide by policy, the policy file for the Java plugin must grant the usePolicy privilege to all applets. This can be accomplished with the following steps:

- Open the application c:\Program Files\Java\j2re.1.4.0_03\bin\policytool.exe. (The policy tool may give an error message about inability to find a different policy file. If so, ignore the message.)
- In the File menu, select Open.
- Select the file c:\Program Files\Java\j2re.1.4.0_03\lib\security\java.policy. Your application should now look like Figure 13.

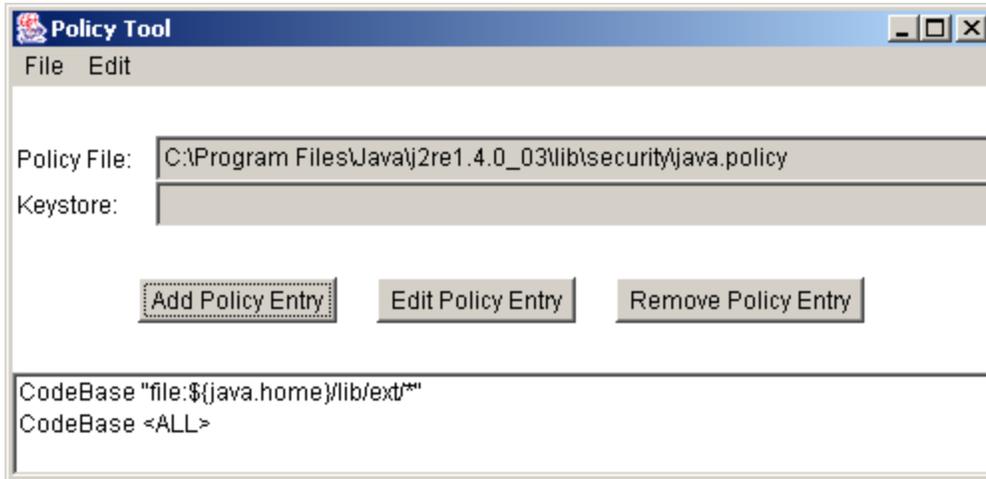


Figure 13 - java.policy initial settings

- Click Add Policy Entry.
- Click Add Permission.
- Pull down Permission: to select RuntimePermission.
- Pull down Target Name: to select usePolicy.

- Click OK. Your permission to be added should now look like Figure 14.

Figure 14 - The usePolicy Policy Entry

- Click Done.
- In the File menu, select Save. (The policy tool will report that it has saved the file.)
- In the File menu, click Exit.

This will generate an entry in the java.policy file that looks like this:

```
grant {
    permission java.lang.RuntimePermission "usePolicy";
};
```

Note: If you do not wish to grant extra privileges to any applets, you can skip ahead to the section entitled File Replication.

Java's Certificate Authority Store - cacerts

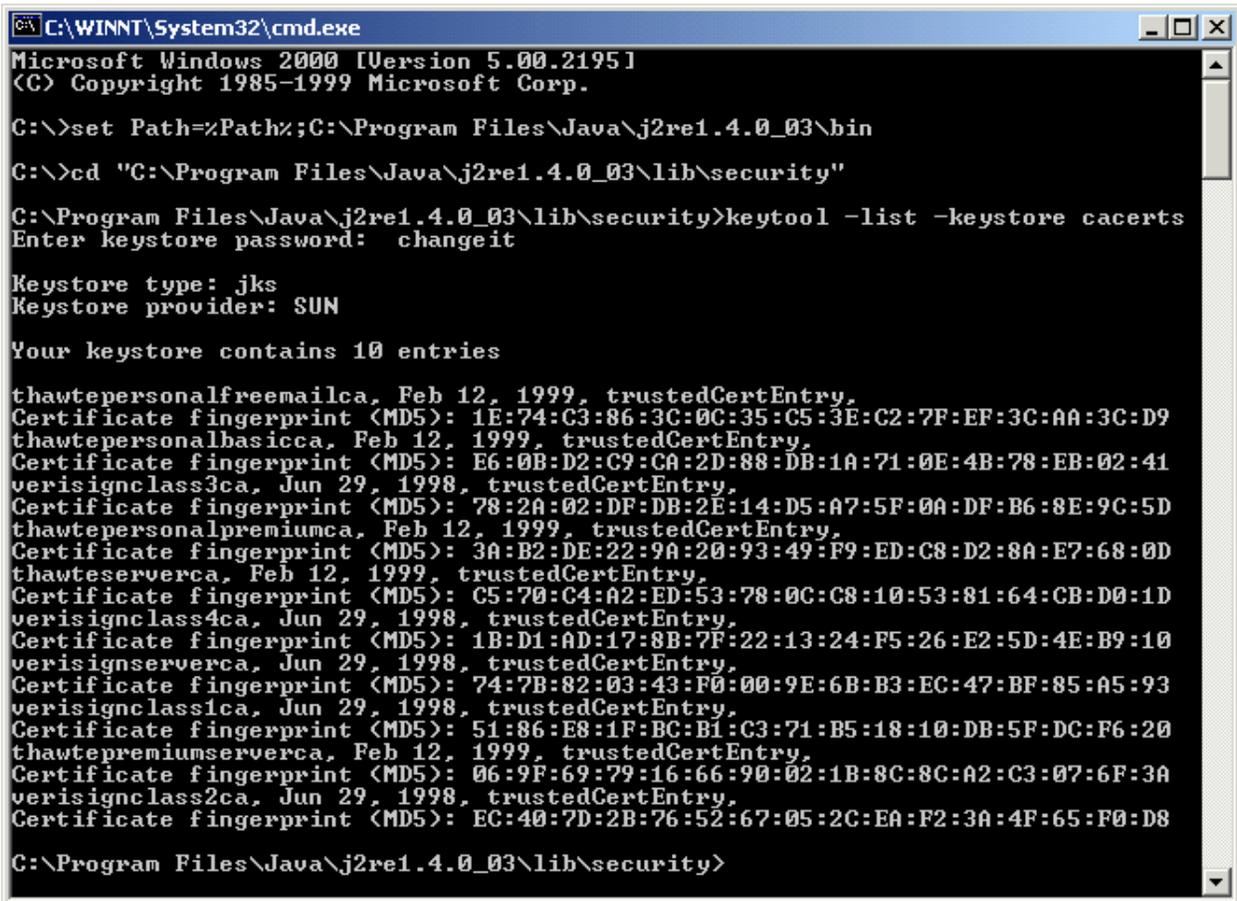
The certificate store used by the Java Plug-in is different than the one used by Netscape. Its default location is C:\Program Files\Java\j2re1.4.0\lib\security\cacerts. Future implementations of Java and Netscape may include certificate verification and may allow for better integration of these two certificate stores.

As discussed in the beginning of Chapter 3, it is important that the certificates in this keystore correspond to those organizations trusted by policy to sign code-signing certificates. Full documentation about keytool is available from Sun (<http://java.sun.com/j2se/1.4.1/docs/tooldocs/windows/keytool.html>); however, this paper will include brief demonstrations of how to view, add, and remove keys from the default keystore.

As illustrated in Figure 15, by setting the path to include the Java bin directory, changing into the directory containing the cacerts, and running the following command, all CAs used by Java will be listed.

```
keytool -list -keystore cacerts
```

More detailed reports can be generated by adding the `-v` option to the previous command.



```
C:\WINNT\System32\cmd.exe
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-1999 Microsoft Corp.

C:\>set Path=%Path%;C:\Program Files\Java\j2re1.4.0_03\bin
C:\>cd "C:\Program Files\Java\j2re1.4.0_03\lib\security"
C:\Program Files\Java\j2re1.4.0_03\lib\security>keytool -list -keystore cacerts
Enter keystore password: changeit

Keystore type: jks
Keystore provider: SUN

Your keystore contains 10 entries

thawtepersonalfreemailca, Feb 12, 1999, trustedCertEntry,
Certificate fingerprint (MD5): 1E:74:C3:86:3C:0C:35:C5:3E:C2:7F:EF:3C:AA:3C:D9
thawtepersonalbasicca, Feb 12, 1999, trustedCertEntry,
Certificate fingerprint (MD5): E6:0B:D2:C9:CA:2D:88:DB:1A:71:0E:4B:78:EB:02:41
verisignclass3ca, Jun 29, 1998, trustedCertEntry,
Certificate fingerprint (MD5): 78:2A:02:DF:DB:2E:14:D5:A7:5F:0A:DF:B6:8E:9C:5D
thawtepersonalpremiumca, Feb 12, 1999, trustedCertEntry,
Certificate fingerprint (MD5): 3A:B2:DE:22:9A:20:93:49:F9:ED:C8:D2:8A:E7:68:0D
thawteserverca, Feb 12, 1999, trustedCertEntry,
Certificate fingerprint (MD5): C5:70:C4:A2:ED:53:78:0C:C8:10:53:81:64:CB:D0:1D
verisignclass4ca, Jun 29, 1998, trustedCertEntry,
Certificate fingerprint (MD5): 1B:D1:AD:17:8B:7F:22:13:24:F5:26:E2:5D:4E:B9:10
verisignserverca, Jun 29, 1998, trustedCertEntry,
Certificate fingerprint (MD5): 74:7B:82:03:43:F0:00:9E:6B:B3:EC:47:BF:85:A5:93
verisignclass1ca, Jun 29, 1998, trustedCertEntry,
Certificate fingerprint (MD5): 51:86:E8:1F:BC:B1:C3:71:B5:18:10:DB:5F:DC:F6:20
thawtepremiumserverca, Feb 12, 1999, trustedCertEntry,
Certificate fingerprint (MD5): 06:9F:69:79:16:66:90:02:1B:8C:8C:A2:C3:07:6F:3A
verisignclass2ca, Jun 29, 1998, trustedCertEntry,
Certificate fingerprint (MD5): EC:40:7D:2B:76:52:67:05:2C:EA:F2:3A:4F:65:F0:D8

C:\Program Files\Java\j2re1.4.0_03\lib\security>
```

Figure 15 - Listing Certificates

Your policy should determine what certificates should remain in the trusted CAs store. In order to implement this policy, examples of adding and removing a certificate are provided below. **The following two examples are for illustration only and are not recommended for implementation exactly as shown.** Both of these examples assume that the PATH has been set to include the java bin directory.

As illustrated in Figure 16, by running the following command, the CA specified by <Alias name> will be deleted.

```
keytool -delete -alias <Alias name> -keystore cacerts
```

This is how you remove any CAs that are installed by default but are not trusted by your policy.

```
C:\WINNT\System32\cmd.exe
C:\Program Files\Java\j2re1.4.0_03\lib\security>keytool -delete -alias verisignc
lass4ca -keystore cacerts
Enter keystore password: changeit
C:\Program Files\Java\j2re1.4.0_03\lib\security>_
```

Figure 16 - Deleting A CA Certificate

As illustrated in Figure 17, by running the following command, a new CA whose file is specified by <CertFileName> is imported into the CA's store.

```
keytool -import -trustcacerts -alias <Alias Name> -file <CertFileName>
```

Notice that keytool requires you to read the certificate information and fingerprints and type 'yes' in order to accept the certificate.

```
C:\WINNT\System32\cmd.exe
C:\Program Files\Java\j2re1.4.0_03\lib\security>keytool -import -keystore cacert
s -trustcacerts -alias thawteserverca -file thawte.cer
Enter keystore password: changeit
Owner: EMAILADDRESS=server-certs@thawte.com, CN=Thawte Server CA, OU=Certificati
on Services Division, O=Thawte Consulting cc, L=Cape Town, ST=Western Cape, C=ZA
Issuer: EMAILADDRESS=server-certs@thawte.com, CN=Thawte Server CA, OU=Certificat
ion Services Division, O=Thawte Consulting cc, L=Cape Town, ST=Western Cape, C=ZA
Serial number: 1
Valid from: Wed Jul 31 20:00:00 EDT 1996 until: Thu Dec 31 18:59:59 EST 2020
Certificate fingerprints:
    MD5: C5:70:C4:A2:ED:53:78:0C:C8:10:53:81:64:CB:D0:1D
    SHA1: 23:E5:94:94:51:95:F2:41:48:03:B4:D5:64:D2:A3:A3:F5:D8:8B:8C
Trust this certificate? [no]: yes
Certificate was added to keystore
C:\Program Files\Java\j2re1.4.0_03\lib\security>
```

Figure 17 - Importing A CA Certificate

The end result of these operations is that the cacerts file will contain those certificates that match your organization's policy.

Creating the pubcerts keystore

In order to grant permissions to any code signed by a particular code-signing certificate, Java must first have this certificate on file in a keystore. This document will assume that this keystore is called pubcerts and located in the same directory as cacerts. To place code-signing certificates in the keystore, perform the following steps for each certificate to be imported:

- Set the path and change into the directory containing cacerts as shown in Figure 15.
- Copy the certificate into the C:\Program Files\Java\j2re1.4.0\lib\security directory.
- Run the following command:

```
keytool -import -alias <cert alias> -file <cert filename> -keystore pubcerts
```

- Enter the keystore password.
- Validate that this is the correct certificate. Type 'yes' in response to the question "Trust this certificate?" if this is the correct certificate.

This will import the file named by <cert filename> into the keystore pubcerts where it will be known as <cert alias>. In the example shown in Figure 18, the certificate in the file curt.cer is imported with the alias Curt.

```
C:\WINNT\System32\cmd.exe
C:\Program Files\Java\j2re1.4.0_03\lib\security>dir /w
Volume in drive C has no label.
Volume Serial Number is F004-F2A9

Directory of C:\Program Files\Java\j2re1.4.0_03\lib\security

[.]                [..]                cacerts
curt.cer           java.policy         java.security
local_policy.jar  US_export_policy.jar
                  6 File(s)          24,102 bytes
                  2 Dir(s)           2,400,264,192 bytes free

C:\Program Files\Java\j2re1.4.0_03\lib\security>keytool -import -alias Curt -file
e curt.cer -keystore pubcerts
Enter keystore password: changeit
Owner: CN=Curt Doernberg, OU=Jabuti Lab, O=C43, L=Linthicum, ST=MD, C=US
Issuer: CN=PowerEdge Netscape CA, OU=Applications and Architecture Division, O=S
ystem and Network Attack Center, L=Linthicum, ST=MD, C=US
Serial number: a
Valid from: Thu Mar 20 10:12:24 EST 2003 until: Fri Mar 19 10:12:24 EST 2004
Certificate fingerprints:
    MD5:  2C:DF:8C:80:50:8E:09:D4:4B:72:BB:E6:11:1E:D3:8D
    SHA1: 25:21:CB:AB:1D:07:12:70:96:F8:54:8F:8F:C1:14:63:02:C1:F6:25
Trust this certificate? [no]: yes
Certificate was added to keystore

C:\Program Files\Java\j2re1.4.0_03\lib\security>dir /w
Volume in drive C has no label.
Volume Serial Number is F004-F2A9

Directory of C:\Program Files\Java\j2re1.4.0_03\lib\security

[.]                [..]                cacerts
curt.cer           java.policy         java.security
local_policy.jar  pubcerts           US_export_policy.jar
                  7 File(s)          25,337 bytes
                  2 Dir(s)           2,400,260,096 bytes free

C:\Program Files\Java\j2re1.4.0_03\lib\security>_
```

Figure 18 - Importing A Publisher Certificate

Setting the keystore

Before the Policy Tool can give permissions to the keys in the pubcerts keystore, it must first have the keystore location in the policy file. To generate this entry, perform the following steps:

- Open the java.policy file with the Policy Tool.
- In the Edit menu, select Change Keystore. This will cause the window in Figure 19 to appear.

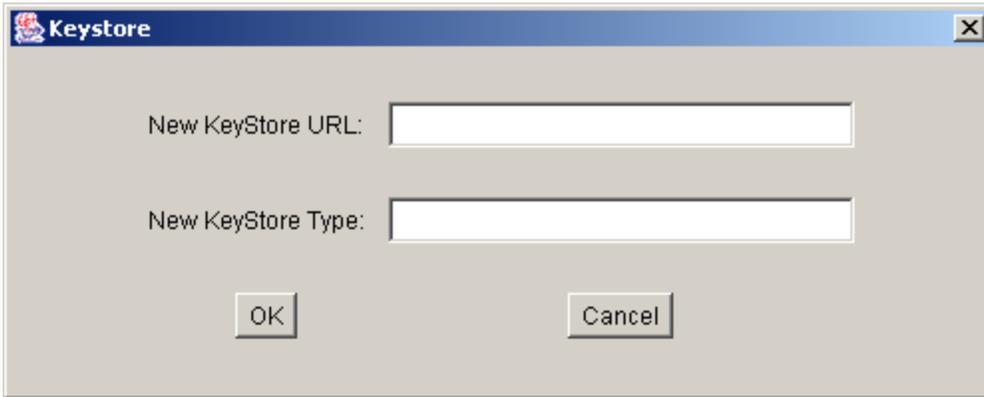


Figure 19 - Keystore Modification

- Next to New KeyStore URL, type the following:
`file:/C:/Program Files/Java/j2re1.4.0_03/lib/security/pubcerts`
- Next to New Keystore Type, type the following:
`JKS`
- Click OK. Your policy tool should now have a keystore entry like Figure 20.



Figure 20 - Policy Tool with Keystore Entry

- Save the Policy File.

Adding permissions for specific applets

This will break those signed Java applets that rely on extra permissions. In the ideal case, the developer of these applets will provide a list of permissions specifying the extra permissions actually required by the applet. Not all applets will come with a specific permissions list. If you completely trust a Java applet, you do not have a limited permissions list available, and you need this applet to have some amount of extra privileges, then you can give it all permissions.

If you are sure that this applet should be trusted with extra permissions according to your policy, you can give these permissions to specific applets by performing the following steps:

- Open the java.policy file with the Policy Tool.
- Click Add Policy Entry.
- Perform one or both of the following actions to specify which applets this permission entry will apply to:
 - Next to SignedBy, give the alias for the public key that was used in the pubcerts keystore. This is how a trusted source can be specified.
 - Next to CodeBase, give the full URL to the applet. (such as `https://www.fakeserver.com/applets/applets.jar`) Note that giving a https URL gives an assured channel to the server.
- Repeat the following steps for each permission you would like to add.
 - Click Add Permission.
 - Either select the specific permission mentioned by the applet developer, or pull down Permission: to AllPermission.
 - Click OK.
- Click Done.
- In the File menu, select Save. (The policy tool will report that it has saved the file.)
- In the File menu, click Exit.

This will generate an entry in the java.policy file that looks like this:

```
grant codeBase "https://www.fakeserver.com/applets/applets.jar" {
    permission java.security.AllPermission;
};
```

File Replication

For these actions to take effect throughout the network, the file java.policy, the file cacerts (if applicable), and the file pubcerts (if applicable), must be distributed to all machines that use the Java plugin. This will have to be repeated every time the policy changes (such as if another code-signing certificate is trusted). This can be implemented manually, if you so desire.

Alternatively, this can be performed using the provided script. Create (or use) a read only network share containing the java.policy, cacerts, and pubcerts files. The ShareUNC variable in the script should specify the location of this network share. The JavaDest array should specify locations where the Java Plugin's configuration files can be found (already provided for Netscape 7.0 through 7.02). If these locations are specified, the script will copy the files from the network share to the Plugin directories.

Appendix B: Netscape Security References

<http://channels.netscape.com/ns/browsers/default.jsp>

Netscape's Browser Central – the home page for the Netscape browser.

<http://wp.netscape.com/security/index.html>

Netscape's Security Center – the home page for security information and updates.

<http://java.sun.com/j2se/>

Sun's Java 2 Standard Edition – the home page for the Java component included with Netscape.

Pistoia, Marco; Reller, Duane F., et. al., Java 2 Network Security, Prentice Hall, 1999

Explains the Java 2 security model and provides more information on Java Security.

<http://www.interex.org/pubcontent/enterprise/jan01/14chew.html>

Using Java 2 Security to Write a Trusted Applet – Gives some practical information about Java 2 Security.

<http://www.w3.org/P3P/>

Home of the Platform for Privacy Preferences (P3P) Project.

<http://www.c3i.osd.mil/org/cio/doc/mobile-code11-7-00.html>

Policy Guidance for use of Mobile Code Technologies in Department of Defense (DoD) Information Systems.

Appendix C: Automation Summary and Sample Logon Script

Automation Summary

Chapter 2 provided recommendations for how to install Netscape. This cannot easily be automated after the fact; it must be done at installation time.

Chapters 3 through 5 provided recommendations for various Netscape preferences. All of these preferences can be set at installation time, with the exception of choosing a Master Password, which must be done by the user. Running a script like the one in Appendix C can set many but not all of these preferences by modifying the user's preferences file (prefs.js). A script can be run manually to set preferences once, but users can change them later. A script can be configured to run automatically, which will set preferences every login, but users can still change them temporarily. There is no method recommended that will set preferences and prevent users from changing them.

Appendix A provides security guidance for the Java plugin. Implementation of this guidance consists of two steps: creating files with appropriate policy settings and distributing these files throughout your network. Placing these files on a read-only network share and using the script to copy these files automatically can automate the distribution step.

The Visual Basic script associated with this document should help in setting Netscape settings throughout a network of Windows 2000 machines to match the recommendations provided here. To use this script you should do the following:

1. Thoroughly read this entire document and understand what options you would like to set in Netscape.
2. Create a file with the .VBS extension from the script shown below. Rather than retype many pages, you can instead export the text from this PDF or separately download the text file.
3. Modify the sections of the script between the Start and Stop comments to contain those settings that you would like to enforce throughout your network. If implementing the Java section, also modify the locations of the network share and the Java plugin directories.
4. Test the modified script on a single machine running Netscape. Make sure that it enforces those settings that you would like to be enforced.
5. Set this script to run at logon for your users. For a Windows NT domain this is possible, but not covered in this guide. For computers in a Windows 2000 domain, this can be done by performing the following steps:
 - a. Open the Group Policy for your domain.
 - b. Navigate to the pane User Configuration:Windows Settings:Scripts (Logon/Logoff).
 - c. Double click on the Logon icon.
 - d. Click show files in the Logon Properties window.
 - e. Copy your script into the Logon folder presented.
 - f. Returning to the Logon Properties window, click add.
 - g. Click browse.
 - h. Select the script you just placed in the Logon folder.
 - i. Click OK.
 - j. Click OK.
 - k. Close all Group Policy windows.

Sample Logon Script

```
' Netscape Reconfiguration Script Version 1.1
' This script is part of the Netscape 7.02 Configuration Guide at www.nsa.gov

' SOFTWARE IS PROVIDED "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING,
' BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
' A PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED. IN NO EVENT SHALL THE
' CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
' EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT
' OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
' INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
' STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
' OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
' DAMAGE.

' Set up the Settings array to hold the Netscape preferences (with some extra space)
Dim Settings(70,2)

' Set up the Java directory array (with lots of extra space)
Dim JavaDest(20)

' \
' | \
' | | } START
' | | /
' | /

' To customize this startup script, begin here. The two customizations to
' this file that are recommended are:
' 1. Changing a value - change the value assigned to Settings(length,2) to
' the setting you choose.
' 2. Not enforcing a setting - if you don't want a particular setting to
' be set for your users, comment out all the lines of its block.

' 3.3.1 OCSP
' Recommended Value 1 - use OCSP to validate only certificates that specify an OCSP
service URL
length=length+1
Settings(length,1)="security.OCSP.enabled"
Settings(length,2)=1

' 3.4 Client Certificate Selection
' Recommended Value - Ask Every Time
length=length+1
Settings(length,1)="security.default_personal_cert"
Settings(length,2)="Ask Every Time"

' 3.5 Begin Proxy Settings

' Proxy Autoconfig Settings
' To configure this, either uncomment the proxy autoconfig section
' and fix the url, or uncomment the no proxy use section.

' This block can be used for a proxy autoconfig script.
length=length+1
Settings(length,1)="network.proxy.autoconfig_url"
Settings(length,2)="http://mylocalserver/proxyautoconfig.js"
length=length+1
Settings(length,1)="network.proxy.type"
Settings(length,2)=2
```

UNCLASSIFIED

```
' ' This block can be used for no proxy use.
'length=length+1
'Settings(length,1)="network.proxy.type"
'Settings(length,2)=0

' End Proxy Settings

' 3.8 Begin SSL Protocols

' SSL2 Cryptographic Protocol
' Recommended Value false
length=length+1
Settings(length,1)="security.enable_ssl2"
Settings(length,2)="false"

' SSL3 Cryptographic Protocol
' Recommended Value true
length=length+1
Settings(length,1)="security.enable_ssl3"
Settings(length,2)="true"

' TLS Cryptographic Protocol
' Recommended Value true
length=length+1
Settings(length,1)="security.enable_tls"
Settings(length,2)="true"

' End SSL Protocols

' 3.8 Begin SSL Warnings

' warn me when loading a page that supports encryption
' Recommended Value false
length=length+1
Settings(length,1)="security.warn_entering_secure"
Settings(length,2)="false"

' warn me when loading a page that supports low-grade encryption
' Recommended Value true
length=length+1
Settings(length,1)="security.warn_entering_weak"
settings(length,2)="true"

' warn me when leaving a page that supports encryption
' Recommended Value true
length=length+1
Settings(length,1)="security.warn_leaving_secure"
settings(length,2)="true"

' warn me when sending form data from an unencrypted page
' to an unencrypted page
' Recommended Value true
length=length+1
Settings(length,1)="security.warn_submit_insecure"
settings(length,2)="true"

' warn me when viewing a page with an encrypted/unencrypted mix
' Recommended Value true
length=length+1
Settings(length,1)="security.warn_viewing_mixed"
settings(length,2)="true"
```

UNCLASSIFIED

```
'End SSL Warnings

' 3.8 Begin SSL2 Ciphersuites

' 128 bit RC4 - recommended true
length=length+1
Settings(length,1)="security.ssl2.rc4_128"
Settings(length,2)="true"

' 128 bit RC2 - recommended true
length=length+1
Settings(length,1)="security.ssl2.rc2_128"
Settings(length,2)="true"

' Triple DES - recommended true
length=length+1
Settings(length,1)="security.ssl2.des_ede3_192"
Settings(length,2)="true"

' DES - recommended true
length=length+1
Settings(length,1)="security.ssl2.des_64"
Settings(length,2)="true"

' 40 bit RC4 - recommended true
length=length+1
Settings(length,1)="security.ssl2.rc4_40"
Settings(length,2)="true"

' 40 bit RC2 - recommended true
length=length+1
Settings(length,1)="security.ssl2.rc2_40"
Settings(length,2)="true"

' End SSL2 Ciphersuites

' 3.8 Begin SSL3/TLS Ciphersuites

' 128 bit RC4 and MD5 MAC - recommended true
length=length+1
Settings(length,1)="security.ssl3.rsa_rc4_128_md5"
Settings(length,2)="true"

' FIPS 140-1 compliant Triple DES and SHA-1 MAC - recommended true
length=length+1
Settings(length,1)="security.ssl3.rsa_fips_des_ede3_sha"
Settings(length,2)="true"

' Triple DES and SHA-1 MAC - recommended true
length=length+1
Settings(length,1)="security.ssl3.rsa_des_ede3_sha"
Settings(length,2)="true"

' FIPS 140-1 compliant DES and SHA-1 MAC - recommended false
length=length+1
Settings(length,1)="security.ssl3.rsa_fips_des_sha"
Settings(length,2)="false"

' DES and SHA-1 MAC - recommended false
length=length+1
Settings(length,1)="security.ssl3.rsa_des_sha"
Settings(length,2)="false"
```

UNCLASSIFIED

```
' 56 bit RC4 and SHA-1 MAC - recommended false
length=length+1
Settings(length,1)="security.ssl3.rsa_1024_rc4_56_sha"
Settings(length,2)="false"

' DES in CBC Mode and SHA-1 MAC - recommended false
length=length+1
Settings(length,1)="security.ssl3.rsa_1024_des_cbc_sha"
Settings(length,2)="false"

' 40 bit RC4 and MD5 MAC - recommended false
length=length+1
Settings(length,1)="security.ssl3.rsa_rc4_40_md5"
Settings(length,2)="false"

' 40 bit RC2 and MD5 MAC - recommended false
length=length+1
Settings(length,1)="security.ssl3.rsa_rc2_40_md5"
Settings(length,2)="false"

' No encryption and MD5 MAC - recommended false
length=length+1
Settings(length,1)="security.ssl3.rsa_null_md5"
Settings(length,2)="false"

' End SSL3/TLS Ciphersuites

' 4.1 Use Netscape's plug-in finder service when seeking plug-ins
' Recommended Value - true
length=length+1
Settings(length,1)="application.use_ns_plugin_finder"
Settings(length,2)="true"

' 4.2 When starting a download
' Recommended Values 1 (Open a progress dialog) or 0 (Open the download manager)
length=length+1
Settings(length,1)="browser.downloadmanager.behavior"
Settings(length,2)=1

' 4.3 Enable Java
' Recommended Value - true
' Alternate Value - false
length=length+1
Settings(length,1)="security.enable_java"
Settings(length,2)="true"

' 4.3 Enable XSLT
' Recommended Value - false
length=length+1
Settings(length,1)="xslt.enabled"
Settings(length,2)="false"

' 4.4 Enable Javascript for Navigator
' Recommended Value - true
length=length+1
Settings(length,1)="javascript.enabled"
Settings(length,2)="true"

' 4.4 Enable Javascript for Mail & News
' Recommended Value - false
length=length+1
Settings(length,1)="javascript.allow.mailnews"
Settings(length,2)="false"
```

UNCLASSIFIED

```
' 4.4 Enable Plugins for Mail & News
' Recommended Value - false
length=length+1
Settings(length,1)="mailnews.message_display.allow.plugins"
Settings(length,2)="false"

' 4.5 Begin JavaScript features

' Note that the JavaScript settings are unchecked in the GUI to disable them,
' but in the configuration file are implemented by setting a disable feature
' to true.

' Javascript: Do not allow Webpages to hide the status bar
' Recommended Value true
length=length+1
Settings(length,1)="dom.disable_window_open_feature.status"
Settings(length,2)="true"

' Javascript: Do not allow Webpages to change the status bar text
' Recommended Value true
length=length+1
Settings(length,1)="dom.disable_window_status_change"
Settings(length,2)="true"

' Javascript: Do not allow Webpages to read cookies
' Recommended Value true
length=length+1
Settings(length,1)="dom.disable_cookie_get"
Settings(length,2)="true"

' Javascript: Do not allow Webpages to create or modify cookies
' Recommended Value true
length=length+1
Settings(length,1)="dom.disable_cookie_set"
Settings(length,2)="true"

' End JavaScript features

' 4.6 Enable automatic software installation
' Recommended Value false
length=length+1
Settings(length,1)="xpinstall.enabled"
Settings(length,2)="false"

' 4.7 Enable Update Notifications
' Recommended Value false
length=length+1
Settings(length,1)="update_notifications.enabled"
Settings(length,2)="false"

' Begin Return Receipts Settings

' 5.1 Enable Return Receipts
' Recommended Value true, false is possible
length=length+1
Settings(length,1)="mail.mdn.report.enabled"
Settings(length,2)="true"

' If I'm not in the To or Cc of the message
' Recommended Value 0 - never send
length=length+1
Settings(length,1)="mail.mdn.report.not_in_to_cc"
```

UNCLASSIFIED

```
Settings(length,2)=0

' If the sender is outside my domain
' Recommended Value 2 - ask me or 0 - never send
length=length+1
Settings(length,1)="mail.mdn.report.outside_domain"
Settings(length,2)=2

' In all other cases (sender is inside my domain and the mail includes me in To/Cc)
' Recommended Value 2 - ask me or 1 - always send
length=length+1
Settings(length,1)="mail.mdn.report.other"
Settings(length,2)=2

' End Return Receipts Settings

' 5.2 Begin Cookie settings

' Determine cookie behavior
' Recommended Value - 3, use P3P settings to determine cookie behavior
' other reasonable values:
' 1, cookies only from originating website
' 2, disable all cookies
length=length+1
Settings(length,1)="network.cookie.cookieBehavior"
Settings(length,2)=3

' Disable cookies in Mail & Newsgroups
' Recommended Value true
length=length+1
Settings(length,1)="network.cookie.disableCookieForMailNews"
Settings(length,2)="true"

' Determine P3P Settings
' the following two groups correspond to the high predefined privacy level
length=length+1
Settings(length,1)="network.cookie.p3p"
Settings(length,2)="""frfradaa"" "

length=length+1
Settings(length,1)="network.cookie.p3plevel"
Settings(length,2)=2

' the following two groups correspond to a custom privacy level
' length=length+1
' Settings(length,1)="network.cookie.p3p"
' Settings(length,2)="""drrrrrdr"" "

' length=length+1
' Settings(length,1)="network.cookie.p3plevel"
' Settings(length,2)=3

' End Cookie settings

' 5.3 Don't load images in Mail & News
' Recommended Value - true (which causes the Don't load to take effect)
length=length+1
Settings(length,1)="mailnews.message_display.disable_remote_image"
Settings(length,2)="true"

' 5.4 Automatically save form data when completing forms
' Recommended Value - false
length=length+1
```

UNCLASSIFIED

```
Settings(length,1)="wallet.captureForms"
Settings(length,2)="false"

' 5.5 Remember Passwords Using the Password Manager
' No Recommended Value, code as is will disable this feature if uncommented
' length=length+1
' Settings(length,1)="signon.rememberSignons"
' Settings(length,2)="false"

' 5.6 Use Encryption vs. Obscuring
' Recommended Value - true
length=length+1
Settings(length,1)="wallet.crypto"
Settings(length,2)="true"

' 5.8 Master Password Usage
' Recommended Value - 2, ask for password every X minutes
length=length+1
Settings(length,1)="security.ask_for_password"
Settings(length,2)=2

' 5.8 Master Password Timeout (in minutes)
' Recommended Value - 15
length=length+1
Settings(length,1)="security.password_lifetime"
Settings(length,2)=15

' App A Begin Java Plugin Settings

'' Source UNC for Java Plugin Files
'' including cacerts, java.policy, and pubcerts

'SourceUNC="\\HostName\ShareName\Subfolder"

' Destination path for Java Plugin version 1.4.0_01 (provided with Netscape 7.0)
javalen=javalen+1
JavaDest(javalen)="C:\Program Files\Java\j2rel.4.0_01\lib\security"

' Destination path for Java Plugin version 1.4.0_02
javalen=javalen+1
JavaDest(javalen)="C:\Program Files\Java\j2rel.4.0_02\lib\security"

' Destination path for Java Plugin version 1.4.0_03 (provided with Netscape 7.02)
javalen=javalen+1
JavaDest(javalen)="C:\Program Files\Java\j2rel.4.0_03\lib\security"

'' Destination path for a Java Plugin version to be named later
'javalen=javalen+1
'JavaDest(javalen)="C:\Program Files\Java\j2rel.4.0\lib\security"

' End Java Plugin Settings

'
'  /--\
' /    \
' |STOP|
' \    /
'  \--/
'
' To customize this startup script for use with the Netscape 7.02
' configuration guide, you should not need to modify anything after
' this point.

Set WshShell=WScript.CreateObject("WScript.Shell")
```

UNCLASSIFIED

```
Set WshFSO=WScript.CreateObject("Scripting.FileSystemObject")

Sub MyAppendPrefs(MyFileLoc)
  If WshFSO.FileExists(MyFileLoc&"\Prefs.js") Then
    Set MyPrefsFile=WshFSO.OpenTextFile(MyFileLoc&"\Prefs.js", 8)
    For i=1 to length
      MyPrefsFile.WriteLine "user_pref(" & Chr(34) & Settings(i,1) & Chr(34) & ",
" & Settings(i,2) & ");"
    Next
  End If
End Sub

Sub CopyFile(FromDir, ToDir, FileName)
  If WshFSO.FileExists(FromDir&"\"&FileName) Then
    WshFSO.CopyFile FromDir&"\"&FileName, ToDir&"\"&FileName
  End If
End Sub

'Find the Application Data folder, in Win2K found at a location like c:\documents and
settings\username\Application Data
MyAppData=WshShell.RegRead("HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersio
n\Explorer\Shell Folders\AppData")

'Handle errors manually
On Error Resume Next

'Find the subfolder of Application Data where Netscape 7 keeps its profiles
Set MyProfile=WshFSO.GetFolder(MyAppData & "\Mozilla\Profiles")

'If the subfolder doesn't exist, exit silently.
If (MyProfile = "") Then
  WScript.Quit(0)
End If

'Resume default error handling
On Error Goto 0

'Find any directory two directories down from there.
'The first directory is the profile name, the second is a hard to guess name.

For Each MyProfileName in MyProfile.SubFolders
  For Each PrefsDirectory in MyProfileName.SubFolders
    'With each such directory, append the administrative preferences to the prefs.js file.
    Call MyAppendPrefs(PrefsDirectory)
  Next
Next

For i=1 to javalen
  ' If the Java Plugin directory exists
  If WshFSO.FolderExists(JavaDest(i)) Then
    ' And the network share also exists
    If WshFSO.FolderExists(SourceUNC) Then
      ' Then copy the three Java Plugin files
      Call CopyFile(SourceUNC, JavaDest(i), "cacerts")
      Call CopyFile(SourceUNC, JavaDest(i), "pubcerts")
      Call CopyFile(SourceUNC, JavaDest(i), "java.policy")
    End If
  End If
Next
```