



Customization of the Citrix ICA Web Client

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Disclaimer

The objective of this white paper is to provide a method for repackaging the Citrix ICA client (for the Win32 platform) with only the features needed within a specific environment. This white paper was created using the 6.20.985 Win32 ICA client.

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Overview

Citrix Consulting Services has provided a method for repackaging the Citrix ICA client (for the Win32 platform) with only the features needed within a specific environment. The following steps are used to modify the Citrix ICA client for web download:

- Extract the ICA client files from the latest ica32t.cab
- Remove the unused ICA client components
- Modify the setup files for a silent user installation
- Repackage the cab file
- Sign the new ICA client cab file with a digital certificate

The purpose of this white paper is to explain these steps in detail through the use of an example.



Extraction of ICA Client Files

The Citrix Administrator must first obtain the latest version of the ICA web client by downloading the file wfcab.cab from the [Citrix Download Web Site](#), making sure that the cab file is saved locally to the Windows machine. The downloaded cab file can be opened using the native Windows 2000 explorer shell (just double-click the wfcab.cab file icon in Windows Explorer) or with the use of a third-party utility, such as WinZip. Once the wfcab.cab file is opened, copy the files to another folder called ICAcab. Once the files from wfcab.cab are extracted and moved to another folder, the Citrix Administrator can modify the files to remove unused ICA client components from the Citrix web client, which reduces the size and functionality.



Removal of Unused ICA Client Components

The first step to removing the unused ICA client components is to edit the `ctxsetup.ini` file in the `ICAcab` folder. For the example shown in this white paper the new ICA client will be used to connect to a MetaFrame 1.8 server over the Internet. The features that will not be used are Client Audio Mapping, the Netscape plug-in, SSSL Connection support and the Citrix Universal Print Driver. Begin by commenting out the following lines under the `[AddFiles.WIN32]` section of the "`ctxsetup.ini`" file:

```
adpcm.dll=
audcvtn.dll=
vdcamN.dll=

npicaN.dll=

sslasock.dll=
sslsdk_b.dll=

pcl4rast.dll=
```

The lines can be commented out simply by placing a semi-colon ";" in front of each line. The first three files are for client audio support, the next line is for the Netscape Plug-in, the following three lines are for SSL connection support and the Citrix Universal Print Driver, which are features that are only available for connections to MetaFrame XP Feature Release 1 servers. Once the files are commented out of the "`ctxsetup.ini`" file, they can be removed from the "ICAcab" folder. Next, the Citrix Administrator must comment out each filename section within the "`ctxsetup.ini`" file. Each filename section contains four lines and are of the form:

```
[filename]
TargetDir
SourceFilename
TargetFilename
```

The file name sections can also be commented out by placing a semi-colon ";" in front of each line. Once the reference to the filenames has been removed for the "`ctxsetup.ini`" file, the Citrix Administrator can delete these files from the "ICAcab" folder. The table below provides details on all client files that can potentially be removed from the ICA web client.

ICA Client Feature	ICA Client Files	Details
Audio Mapping	adpcm.dll audcvtn.dll vdcamN.dll	ICA Client Audio Files
Automatic Client Reconnect	acrdlg.dll	Auto-Client Reconnect Support
Automatic Client Update	vdcnN.dll wfcmoveN.exe	Auto-Client Update Support
Com Port Mapping	vdcom30n.dll	Client Port Mapping
Encryption (Secure ICA)	pdcl28N.dll	RSA encryption (all levels up to 128-bit)
ICA Client COM Object	ICAClobj.class	Provides COM Interface for VBScript and JScript



Netscape Plug-in	npicaN.dll	ICA Client Plug-in
Printer Mapping	vdcpm30N.dll	Client Printer Mapping
Seamless Windows	concentr.dll concentr.cnt CONCENTR.hlp wfcrun32.exe	ICA Connection Center DLL ICA Connection Center Help Files ICA Seamless Window Engine
SSL Connection Support	SSLsock.dll SSIsdk_b.dll	Provides a Winsock Module for SSL Connection Provides SSL APIs for Winsock Module
Universal Print Driver	pcl4rast.dll	Provides Support for the Citrix Universal Print Driver
Zero Latency Features	vdzlcN.dll vdfon30n.dll	Zero Latency Support Zero Latency Font Support



Modification of Setup Files for Silent User Installation

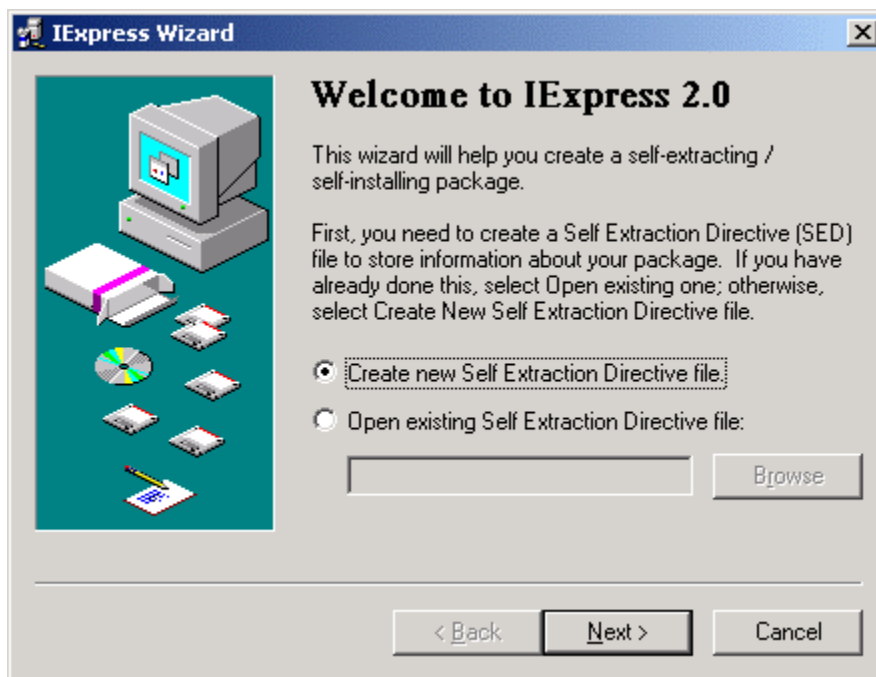
Setting the new ICA web client to perform a silent installation is straightforward. Only two lines must be edited in the [Setup] section of the "ctxsetup.ini" file. The "InitialPrompt" and "DisplayLicenseDlg" values must both be changed from 1 to 0. The resulting [Setup] section should look like the following:

```
[Setup]
Product=Citrix ICA Web Client
InitialPrompt=0
TARGETDIR=%PROGRAMFILES%\Citrix\icaweb32
UninstFile=%TARGETDIR%\uninst.inf
DisplayLicenseDlg=0
AddUninstallLink=1
PromptForCopyingPlugins=0
```

It is important to note that the "TARGETDIR=" section of the "ctxsetup.ini" file may be missing a backslash in the path. The Citrix Administrator must verify that the path in the "ctxsetup.ini" file matches the example above.

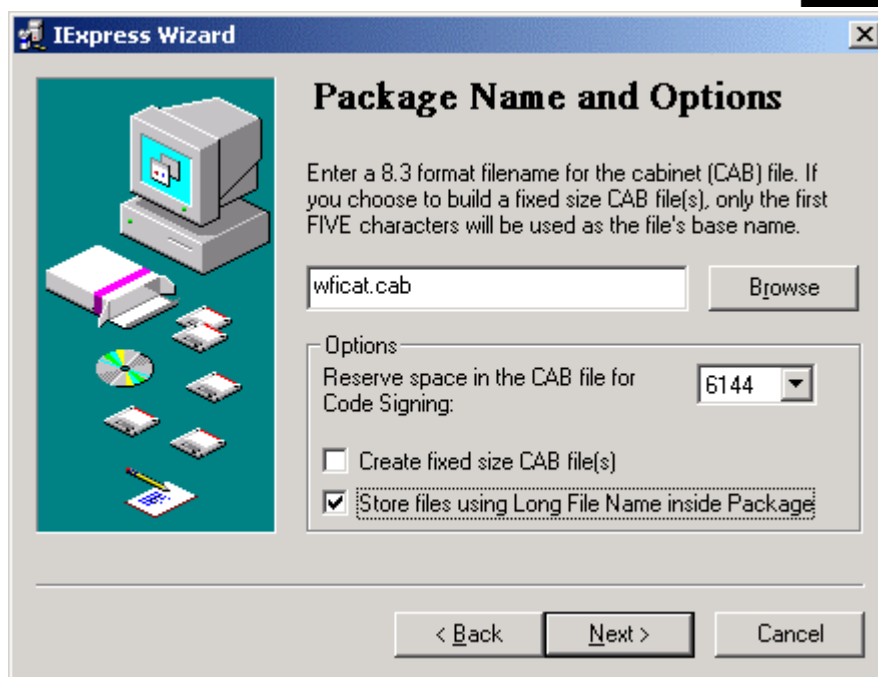
Repackaging the Cab File

Repackaging the new cab file requires utilities found in the Internet Explorer Administration Kit (IEAK 5.01). The IEAK can be downloaded from the following URL: [Internet Explorer Administration Kit Download Page](#). Microsoft has made packaging cab files easy with the IExpress Wizard.



The IExpress Wizard (iexpress.exe) is located in the tools sub-folder in the IEAK folder. Launch the IExpress Wizard, and then follow the steps below to create the new cab file.

- At the "Welcome to IExpress 2.0" windows leave the "Create new Self Extraction Directive file." radio button selected and click the "Next >" button.
- At the "Packaged purpose" window select the "Create compressed files only (ActiveX Installs)" radio button and click the "Next >" button to continue.
- At the "Packaged files" window, click the "Add" button, then browse to the "ICAcab" folder and highlight all of the files within the folder. Click the "Open" button then the "Next >" button to continue.
- At the "Package Name and Options" window type in the text field "wfcab.cab" then check the "Store files using Long File Name inside Package" checkbox. Leave the "Create fixed size CAB file(s)" checkbox unchecked and the combo box value at "6144". Click the "Next >" button to continue.



- At the "Save Self Extraction Directive" window, check the "Don't save." radio button then click "Next >".
- At the first "Create package" window click the "Next >" button to create the new cab file.
- At the next "Create package" window click the "Finish" button to close the IExpress Wizard.



Signing the Client Cab File with a Digital Certificate

Instructions for obtaining a digital certificate (Digital ID) can be found at the [VeriSign Code Signing Digital IDs for Microsoft Authenticode](#) web site. A Digital ID (also known as a digital certificate) is a form of electronic credentials for the Internet. Similar to a driver's license, employee ID card, or business license, a Digital ID is issued by a trusted third party (i.e. VeriSign) to establish the identity of the ID holder. The third party who issues certificates is known as a Certification Authority.

In the process of the Citrix Administrator applying for a Digital ID, Internet Explorer generates a private key. The private key (called MyPrivateKey.pvk) should be stored off site, on a floppy disk that is kept in a safety deposit box or other secure, off site location. ESPM must be sure to make a back-up copy of this private key, as it is needed to sign the new cab file. This key is never sent to VeriSign. In the unfortunate event that the Citrix Administrator loses the private key, they will be unable to sign further cab files. If the key is lost or stolen, the Citrix Administrator must contact VeriSign immediately.

At the end of this process, VeriSign will send the Citrix Administrator an e-mail containing a Personal Identification Number (PIN). Follow the instructions in the e-mail to pick up the Citrix Administrator's Digital ID. Save the Digital ID as a file called "MyCredentials.spc". Now the Citrix Administrator is ready to sign the new cab file. To sign the new cab file use the "signcode.exe" utility included in the tools folder of the IEAK. The Digital ID file (called "MyCredentials.spc") and the diskette containing the Citrix Administrator's private key ("MyPrivateKey.pvk") will be needed. The "signcode.exe" utility should be executed from a command prompt. The following is an example of how to sign the new cab file (wfcab.cab):

```
C:\Program Files\IEAK\tools\signcode.exe -prog wfcab.cab -name Citrix ICA Web Client for MyCompanyName -  
info http://www.mycompanyname.com -spc mycredentials.spc -pvk a:\myprivatekey.pvk -timeStamper  
http://timestamp.verisign.com/scripts/timestamp.dll
```

Where "MyCompanyName" is the name of the Citrix Administrator's company; "mycredentials.spc" is the Digital ID file that was obtained from VeriSign and "myprivatekey.pvk" is the private key generated by Internet Explorer and which is stored on a floppy diskette. It is also important to note that <http://timestamp.verisign.com/scripts/timestamp.dll> is the URL for VeriSign's time stamping service; "timestamp.dll" does not contain the letter "e".



Summary

This white paper has provided a very specific example for repackaging the Citrix ICA client with only a subset of the features offered by Citrix. By using the chart with all the available ICA client features and the corresponding files, it is possible to create a custom ICA client for any environment.



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