Identity Finder 4 MSI Customization

identityfinder

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Introduction

This document describes the process for editing and customizing the Identity Finder MSI using tools freely available from Microsoft. Included are instructions for adding license information to the installation package, changing the default settings, and performing other advanced tasks to change the way that Identity Finder is deployed in the target environment. Before beginning to edit the MSI, all of the tools listed below must be installed and functional.

While this guide does not address every possible configuration change available for MSI packages, it covers the most commonly addressed changes relating to deploying Identity Finder. Editing of MSI packages is solely the responsibility of each individual customer. Only limited support for MSI customizations is available, relating specifically to any issues with the steps and instructions included in this guide. Edits beyond this guide can be made, but are the responsibility of the customer and cannot be supported by Identity Finder. Customizations beyond this guide, or any customers requiring continued creation and maintenance of customized installation packages, may contact Identity Finder and inquire about our professional services offerings.

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Required Tools

Description: All of the tools listed below must be installed and the “makecab.exe” utility and the SDK bin directory must be in the PATH environment variable, enabling them to be run from the command prompt in any directory. If these files are missing, the instructions below will not work correctly.

1. Makecab.exe – A tool for creating Microsoft cabinet files.
   Information and Download: http://support.microsoft.com/kb/310618
   Note: makecab.exe is included with Windows XP, Windows 2003 Server, Windows Vista, and Windows Server 2008

2. Microsoft Platform SDK – The Microsoft® Windows® SDK is a set of tools, code samples, documentation, compilers, headers, and libraries that developers can use to create applications that run on Microsoft Windows operating systems using native (Win32) or managed (.NET Framework) programming models.
   Download: http://msdn.microsoft.com/en-us/windows/bb980924.aspx
   Note: In most cases the newest version of the SDK is appropriate; however please consult the above web page for instructions on downloading and installing the SDK.

3. Orca – Tool to view and edit MSI’s.
   Information: http://msdn2.microsoft.com/en-us/library/aa370557(VS.85).aspx
   Note: The Orca installer is part of the SDK installation, however it must be installed separately after the SDK is installed.

Tool Installation

Description: The SDK and Orca installation require additional steps beyond the normal SDK install process. These extra steps detail the installation of Orca and the process for ensuring that the SDK applications can be easily accessed by the command line.

1. Identify the SDK installation directory, and locate the bin directory containing SDK executables. If a custom directory is selected when installing the Platform SDK, please use that directory, otherwise the defaults are:
   Server 2008 SDK - C:\Program Files\Microsoft SDKs\Windows\v6.1\bin
   Vista SDK - C:\Program Files\Microsoft SDKs\Windows\v6.0\
   Server 2003 - C:\Program Files\Microsoft Platform SDK for Windows Server 2003 R2\bin

2. Add the SDK bin directory to the computers PATH environment variable.
   a. Windows XP/Server 2003:
      i. Right click on My Computer and select Properties.
      ii. Navigate to the “Advanced” tab.
      iii. Select the “Environment Variables” button.
      iv. Follow directions beginning with step “C” below.
   b. Windows Vista/Server 2008:
      i. Right click on My Computer and select Properties.
      ii. Click on the “Advanced System Settings” option.
      iii. Ensure that the “Advanced” tab is visible.
      iv. Select the “Environment Variables” button.
   c. In the Environment Variables window, under the “System Variables” section, find the variable named “Path”.
   d. Select “Path” and click the “Edit” button.
   e. At the end of the value field, add a semi-colon and then the SDK bin directory identified in step 1 above. For example, if the Server 2008 SDK was installed and the current path value is
      “%SystemRoot%\system32;%SystemRoot%;%SystemRoot%\System32\Wbem”,
      the new value would be
      “%SystemRoot%\system32;%SystemRoot%;%SystemRoot%\System32\Wbem;C:\Program Files\Microsoft SDKs\Windows\v6.1\bin”
      Note: Values should be entered without the “” quotes.
   f. Click the OK button and dismiss all other dialogs and windows.
   g. Restart the computer.

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Manually Extracting the MSI

Description: This section describes how to obtain the MSI from the executable available on the Identity Finder web site.

NOTE: If a license file is to be added to the MSI, the MSI should not be extracted manually. Instead, follow the instructions below for adding a license file to the MSI.

1. Download the executable from the Identity Finder web site: http://www.identityfinder.com/Enterprise/index.html
2. Save the file locally and note the path to which it was saved.
3. Open a command prompt by clicking Start -> Run, entering "`cmd`" (without the quotes), and pressing Enter.
4. Navigate to the download directory using the "cd" command.
5. Execute the following command line:

```
IdentityFinder4Setup.exe /MSIDIR=.
```

6. The above line will extract the MSI, IdentityFinder4Setup.msi to the download directory. To see the folder in Windows Explorer, type the following:

```
explorer .
```


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Using a Batch Script to Add a License File or Activation Code

Description: This section describes using a batch script provided by Identity Finder to update the Identity Finder MSI package with a license file. The command script is a generic solution that should work for most installations; however, the script can only add a license file to the installation package. If any other changes are required for the installation package, then other manual methods must be used.

1. Copy all of the relevant files into a new working directory and prepare them for processing.
    a. Create a new directory for processing named "C:\IDF_Install".
    b. Copy into the "C:\IDF_Install" directory the following files:
        i. IdentityFinder4Setup.exe – This is the setup executable downloaded from the Identity Finder web site (http://www.identityfinder.com/Enterprise/index.html)
        ii. IdentityFinder.lic – This is the license file provided to the organization with an enterprise license. If an activation key is being used, this file is not used.
        iii. Activation.txt – This is the text file containing the activation code. To create this file, open Notepad and paste the activation code provided after purchase. Save the file and exit. If a license file is being used, this file is not used.
        iv. FileLine.txt – A text file containing additional information to be appended to the File table of the MSI, provided with this documentation.
        v. MediaLine.txt – A text file containing additional information to be appended to the Media table of the MSI, provided with this documentation.
        vi. lictomsi.cmd – A command script written by Identity Finder to automate the process of adding only a license file to the Identity Finder MSI installation package.
    c. Open a command prompt and navigate to the "C:\IDF_Install" directory.
2. Run the included command script that will automatically extract and update the MSI file with the license file or activation code in the same directory by issuing the following command:

    License File:

    ```
    C:\IDF_Install> lictomsi.cmd
    ```

    Activation Code:

    ```
    C:\IDF_Install> acttomsi.cmd
    ```
3. When the lictomsi.cmd or acttomsi.cmd command script finishes it will report the final outcome of the operation and will indicate whether or not the update was successful. If the update happened correctly the last line of output should read, "MSI Update complete." If any errors occurred, they should be listed in the command window. If this happens, please copy and paste them into an email to support@identityfinder.com
4. If the update was successful, the directory "C:\IDF_Install" will contain the file "IdentityFinder4Setup.msi," that now includes the license file. Install this package on a test system and verify that the license file installs correctly.

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Manually Adding a License File

Description: This section details the steps required to manually add a license file to the Identity Finder MSI installation package.

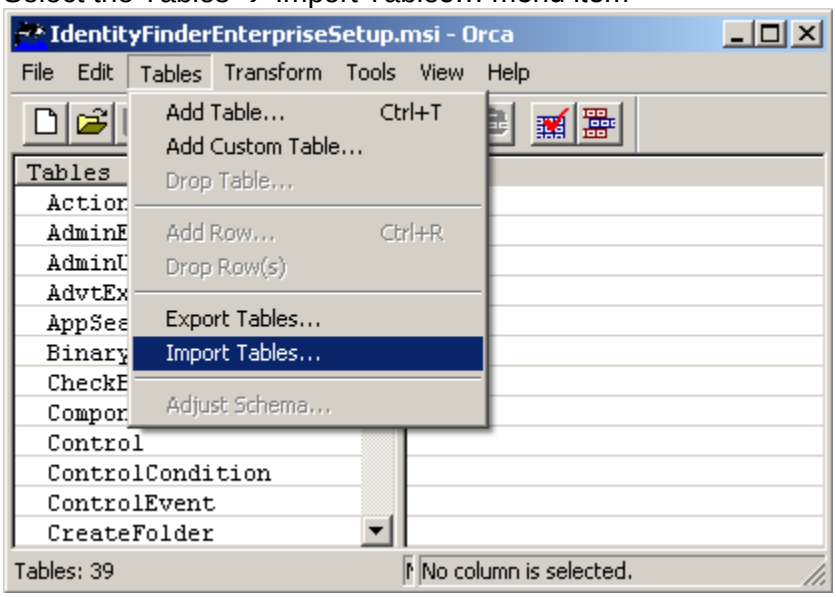
1. Copy all of the relevant files into a new working directory and prepare them for processing.
    a. Create a new directory for processing named "C:\IDF_Install".
    b. Copy into the "C:\IDF_Install" directory the following files:
        i. IdentityFinder4Setup.exe – This is the setup executable downloaded from the Identity Finder web site (http://www.identityfinder.com/Enterprise/index.html)
        ii. IdentityFinder.lic – This is the license file provided to the organization with an enterprise license.
        iii. File.idt – A text file containing information to be entered into the File table of the MSI, provided with this documentation.
        iv. Media.idt – A text file containing information to be entered into the Media table of the MSI, provided with this documentation.
    c. Open a command prompt and navigate to the "C:\IDF_Install" directory.
    d. Extract the MSI from the installer by issuing the following command at the command prompt:

```
C:\IDF_Install> IdentityFinder4Setup.exe /MSIDIR=.
```

    e. Review the files in the directory and there should now be a file named: IdentityFinder4Setup.msi

2. Update the File and Media tables in the IdentityFinder4Setup.msi package file to reflect the fact that a license file will be added to the MSI.
    a. Open the MSI file in Orca by either launching Orca (Start -> Program Files -> Orca) and opening the MSI file "C:\IDF_Install\ IdentityFinder4Setup.msi", or right click on the MSI package file (IdentityFinder4Setup.msi) in Windows Explorer and select "Edit with Orca".
    b. Using Orca, update the File and Media tables with the information provided in the File.idt and Media.idt files.

        i. Select the Tables → Import Tables… menu item



        ii. Navigate to the "C:\IDF_Install" directory. Hold down the CTRL key and click once on each file for "File.idt" and "Menu.idt" to select both files:

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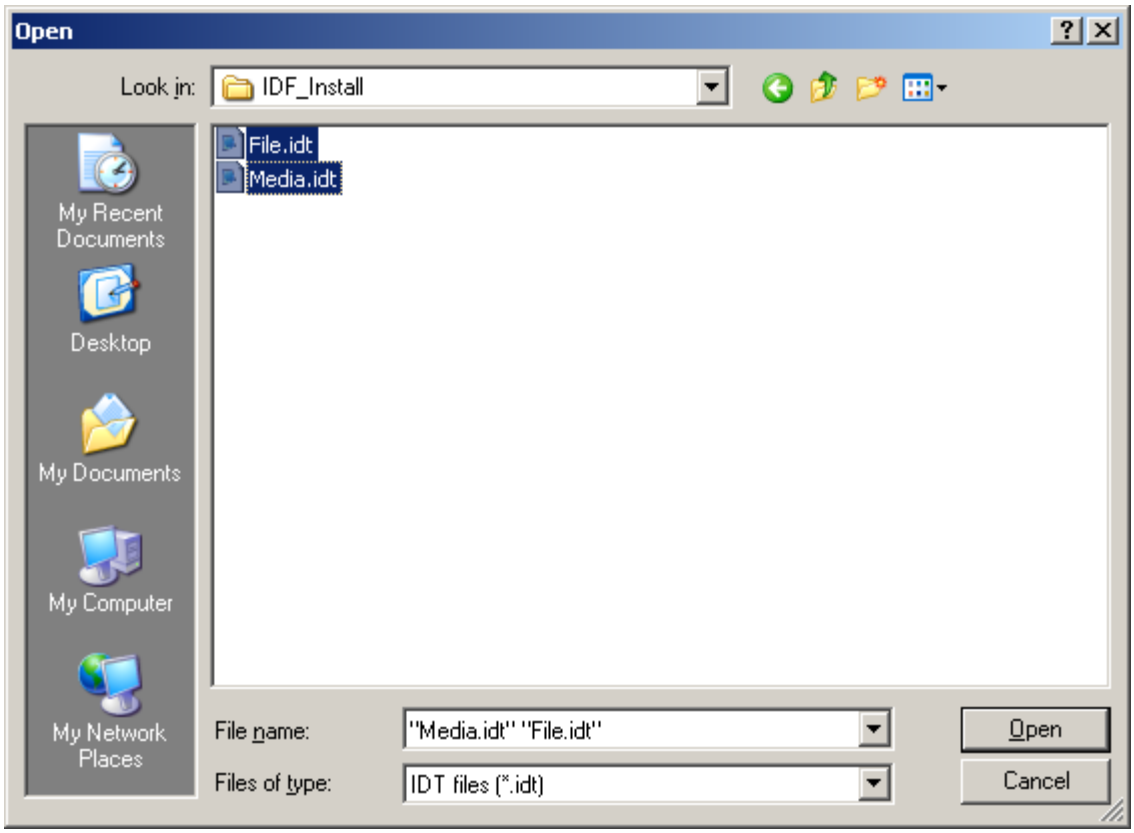
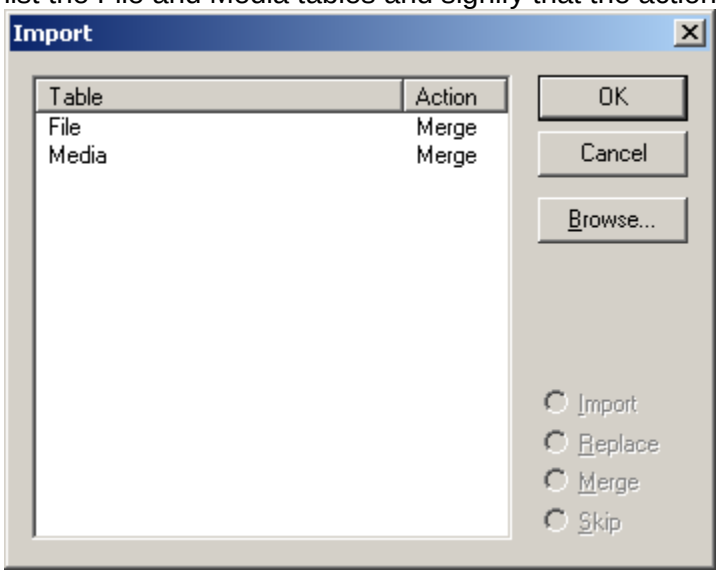


iii. Click the “Open” button.

iv. Click OK on the next dialog. This dialog shows the summary of the actions and will list the File and Media tables and signify that the action is Merge for both.



v. Verify that the Media table has been imported correctly by comparing it to this screenshot:

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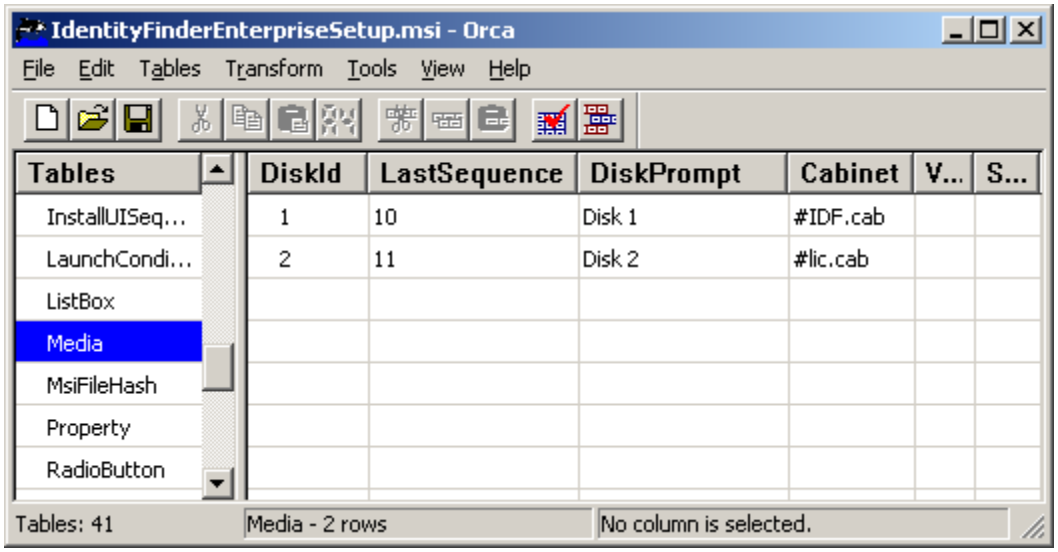
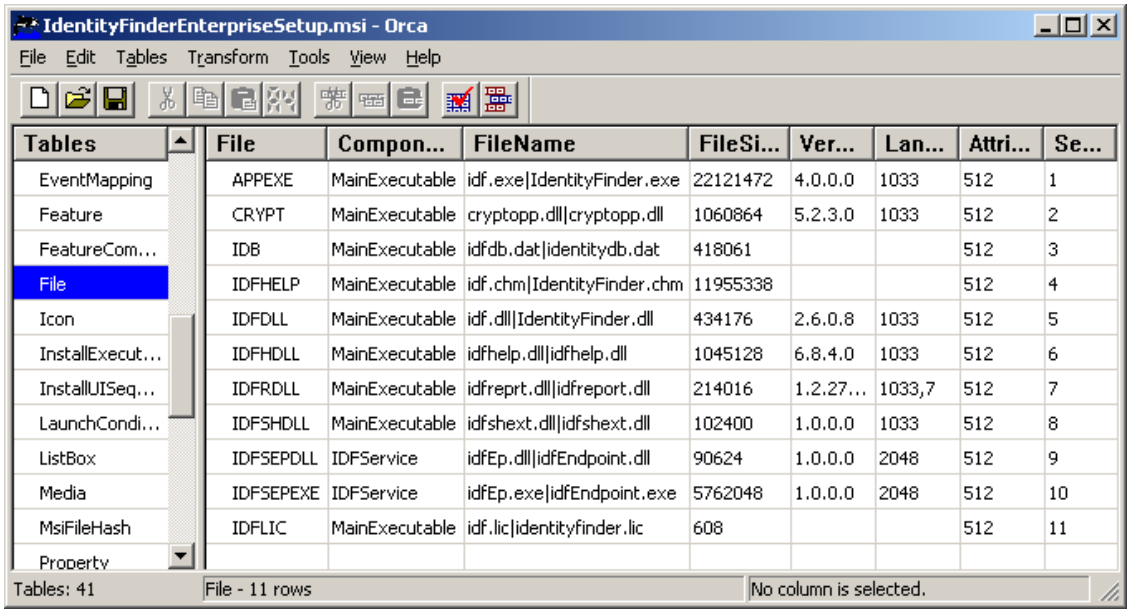


vi. Verify that the File table has been imported correctly by comparing it to this screenshot:



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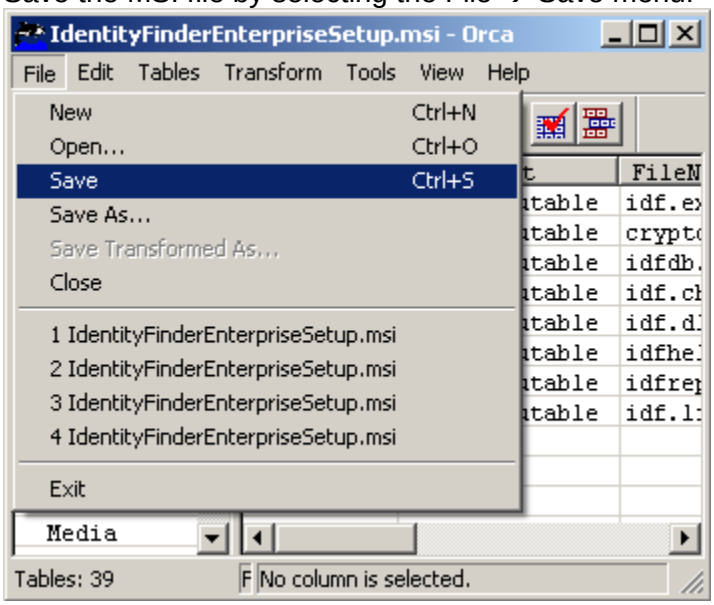
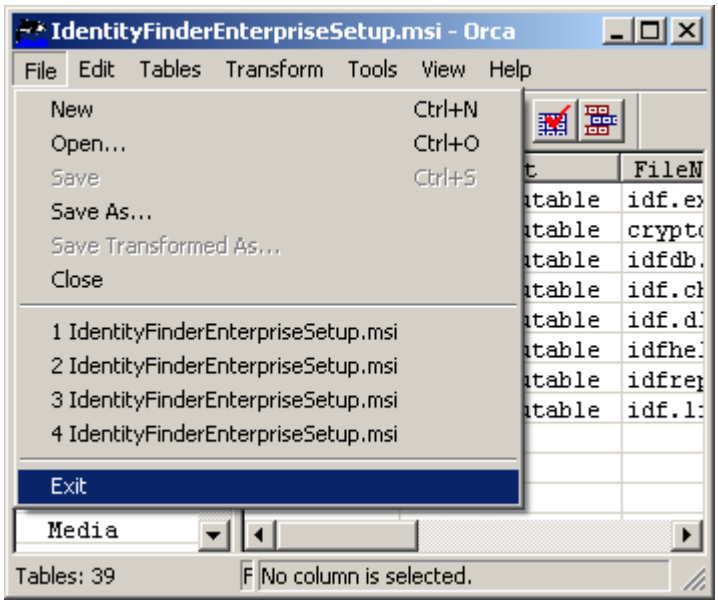
vii. Save the MSI file by selecting the File → Save menu:



viii. Chose the File → Exit menu and close Orca:



3. Create a cabinet (.cab) file to hold the license file and then add that cabinet file to the MSI package.
   a. Go back to the command prompt window where the prompt should be at the directory "C:\IDF_Install".
   b. Make sure that the license file is in the directory and is named "identityfinder.lic".
   c. Copy the existing file to the name IDFLIC by issuing the following command:

```
C:\IDF_Install> copy identityfinder.lic IDFLIC
```

   d. Check the directory and ensure there is now a file named "IDFLIC".
   e. Create the cabinet (.cab) file by using the makecab.exe program, buy issuing the following command:

```
C:\IDF_Install> makecab.exe IDFLIC lic.cab
```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f. The makecab program should run and return to the command prompt. If there are no errors it should output a final line that looks similar to this: “100.00% [flushing current folder]”.
g. Verify that there is a file named “lic.cab” in the directory and that it is all lower case.
h. Add the “lic.cab” file to the IdentityFinder4Setup.msi using the msidb.exe application by issuing the following command:

```
C:\IDF_Install> msidb.exe -d IdentityFinder4Setup.msi -a lic.cab
```

i. The msidb.exe program will run silently in the background. If no errors occur, the program will exit without reporting any information and return to the command prompt. If any errors occur, a dialog box should come up and report the error conditions.

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Manually Adding Any File

Description: These instructions describe the process for adding arbitrary files to an existing MSI package. To add files to an MSI, the target files must be added to a cabinet (.cab) file, the MSI tables must be edited to reflect the existence of the new files and their intended install locations, and the cabinet (.cab) file must be added to the data stream of the MSI package.

1. Locate the files to be added to the MSI package and create a cabinet (.cab) file using the "makecab.exe" program.
    a. Determine an appropriate naming scheme for each file. The name of each file that is added into the cabinet (.cab) file is required for use when editing the MSI tables (in subsequent steps), so a naming scheme where the file names are given short, descriptive names makes it easier to add these items into the MSI tables.
    b. Once a naming scheme is determined, copy all existing files into their new names. For example, if a file named, "configuration.ini," is being added, it would make sense to rename this to, "CFGINI" or a similar name before adding it to the cabinet (.cab) file.
    c. Copy all files into a directory, such as C:\temp.
    d. Create the cabinet (.cab) file using makecab.exe program. For help, open a command prompt and type "`makecab`" (without the quotes). Here is an example of making a cab with a single file (using the file name example from (b) above):

    ```
    C:\temp> makecab CFGINI config.cab
    ```

2. Edit the MSI tables to reflect the new files that will be installed.
    a. Copy the MSI package to be edited into the same directory where the cabinet (config.cab) file was created, e.g. C:\temp. In this example, the MSI package is Application.msi
    b. Launch Orca (Start -> Program Files -> Orca) and open the MSI file Application.msi, or right click on the MSI package file (Application.msi) in Windows Explorer and select "Edit with Orca".
    c. The first table to review is the "Component" table. Click on this and look at the components already defined in the MSI. Each component is linked to a feature via the "FeatureComponents" table, and each feature is described for the graphical interface (the dialog where the user selects what features they do or do not want to install) in the "Feature" table. Looking in the feature table at items with a Level of 1, 2, or 3 will show the items that are likely always installed. This view may help narrow down the feature in which the new file will be added. The features and components of an MSI differ for every MSI, so it will be necessary to decide in which feature the new files should be included. Once the desired feature is determined, view the "FeatureComponents" table to see the list of components that are installed for that feature. Determine from that component list with which individual component the file should be associated. In this example, the component name is, "MainExecutable".
    d. Open the "File" table to view all of the existing files installed by the MSI. Add a new row (Tables → Add Row…) and complete each of the columns in the DATA lines, as follows. In this example, the file names configured in Step 1 above will be used.
        i. File: This is the name of the corresponding file in the cabinet (.cab) file that was created.
        DATA: CFGINI
        ii. Component_: This is the component that was determined above in step (2c).
        DATA: MainExecutable
        iii. FileName: This is the target name of the file. Both a short (8.3 MSDOS) and long file name must be provided and separated by the pipe | character as shown below.
        DATA: config.ini|configuration.ini

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iv. FileSize: The number of bytes in the file size. This can be obtained by right-clicking on the original file in Windows Explorer and choosing Properties and then reading the size in bytes of the file. For this example, it is 1024 bytes (1 K).
DATA: 1024

v. Version: This field is for version numbers of DLL's and executables. Since .ini files are not DLL's or executables this field is left blank. If a DLL or executable were being added, this field would be completed with the target files 4 digit version in the form 1.2.3.4

vi. Language: This field is only for DLL's and executables and lists the supported language codes. 1033 is English. For this example, this will be left blank as it does not apply to .ini files.

vii. Attribute: This field defines the attributes for the file that determines how the MSI handles the file. The attribute number will vary by MSI, but 512 is a standard default. This value requires the file to be installed and if that fails, the installation is stopped and a rollback occurs. Check with the other files in the MSI to determine their attribute number. If all of the other files are using the same number, then that number should be used.
DATA: 512

viii. Sequence: This field holds the sequence number that will be referenced later. The sequence number must be higher than the highest existing sequence number used by other files. For example, if there are 10 files with numbers 1 through 10, add an 11 as the next sequence number. The data value should be a number that is exactly one greater than the highest existing number. For this example, the highest existing number is 10.
DATA: 11

e. Repeat step (2d) for each file that is included in the cabinet (.cab) file. In this example, only one file is added to the cabinet file (config.cab); however, it is possible to add as many files as necessary to a cabinet file and the MSI.

f. Once the file table and features (if edited) are configured, the last step is to configure the "Media" table. The "Media" table defines how to access the cabinet (.cab) file that was created in step 1 and will be added to the MSI package in step 3. Add a new row to the "Media" table (Tables → Add Row…) and complete each of the columns in the DATA lines, as follows. In this example, the file names configured in Step 1 above will be used.

i. DiskId – This is an internal marker for the disk number that is used by the MSI. Keep incrementing this number for each cab file that is added. If there is only one cab file already defined and its id is 1, then add a 2. In this example, the Application.msi package has 1 existing cab file.
DATA: 2

ii. LastSequence – This is the last sequence number used by the msi "File" table in this cab. This number should correspond to the sequence number added in step (2d-viii).
DATA: 11

iii. DiskPrompt – If the cab file can not be found in the MSI package, the user will be asked to insert media or locate the cab file. Since the cab file will be inserted into the MSI, this is not necessary and may be set to any name. A general convention is to use the number from the DiskId column.
DATA: Disk 2

iv. Cabinet – This indicates the name of the cabinet file that will be added to the MSI package below in step 3. This name is case sensitive and must be preceded by a # pound sign.
DATA: #config.cab

v. VolumeLabel – This is to set the VolumeLabel of a disk expected to contain the relevant cabinet (.cab) files. This is not necessary when the cabinet files are embedded in the MSI, so it should be left blank.

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vi. Source – This field is only used for patching and should otherwise be left blank.

3. Add the cabinet file into the data stream of the MSI package.
   a. Ensure that all files are in the working directory and open a command prompt. For this example, the directory is “C:\temp” and the files are Application.msi and config.cab.
   b. Use the msidb.exe program to add the cabinet file (config.cab) to the msi (Application.msi) using the following command:

```
C:\temp> msidb.exe –d Application.msi –a config.cab
```

   c. The msidb.exe program will run silently in the background. If no errors occur, the program will exit without reporting any information and return to the command prompt. If any errors occur, a dialog box should come up and report the error conditions.

4. Double click on the msi (Application.msi) and ensure that all the files are installed to the correct locations.

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Adding Custom Registry Settings

Description: These instructions detail the process for editing the MSI to add custom registry settings to be applied to a target system during installation.

MSI Registry Table Column Definitions:
These column definitions provide required information about the registry table within the MSI that requires editing. Detailed documentation about the registry table is available from Microsoft's MSDN web site: http://msdn.microsoft.com/en-us/library/aa371168.aspx

The column definitions are:

- **Registry** – A field containing a unique name to identify the registry setting. This field can contain any name as long as it is unique and does not contain special characters.
  Maximum Field Length: 72 characters

- **Root** – Indicates the registry key's associated root. Normal values are 1 (HKEY_CURRENT_USER) or 2 (HKEY_LOCAL_MACHINE).

- **Key** – Indicates the path to the registry key. This field can contain any characters allowed in a registry path.
  Maximum Field Length: 255 characters

- **Name** – Indicates the value name. This field can contain any characters allowed in a registry value name.
  Maximum Field Length: 255 characters

- **Value** – A field that contains the value of the registry key. The actual contents of this field vary depending on the type of value desired. Each different value type has a special way of being entered into the MSI field, as follows:
  - Binary Value (REG_BINARY) – Binary values are stored as a series of hexadecimal byte pairs. To signify a binary value, the value field must start with "#x". To specify the byte stream 0x11, 0x3F, 0x4A, 0x6C enter the following into the value field:
    #x113F4A6C

  - Expandable String Value (REG_EXPAND_SZ) – Expandable strings must be preceded by a "#%" in the value column. To specify an expandable string with a value of PROGRAMFILES, enter the following the value field:
    "%PROGRAMFILES

  - DWORD Value (REG_DWORD) – Integer (DWORD) values are the most common in the registry and must be entered in decimal form in the value field starting with a # sign. In many cases, the Identity Finder settings documentation will reference a hexadecimal value. Hexadecimal values can be converted to decimal values using the windows calculator (Start -> Run -> calc.exe, View -> Scientific) or using many other freely available conversion tools. To specify a value of 0xFFFFFFFF, convert it to the decimal value 4294967295, and enter the following into the value field:
    #4294967295

    To specify the number 1, enter the following into the value field:
    #1

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- Multi-String Values (REG_MULTI_SZ) – Multi-string values are entered by separating each string value with the sequence "[~]". If a multi-string is required but it only contains one value, there must be a "[~]" sequence at the end of the value field. To specify a custom include list that contains only the directory "C:\data", enter the following into the value field: C:\data[~]

  To specify the two values, "C:\data" and, "C:\newdata", enter the following into the value field:
  C:\data[~]C:\newdata

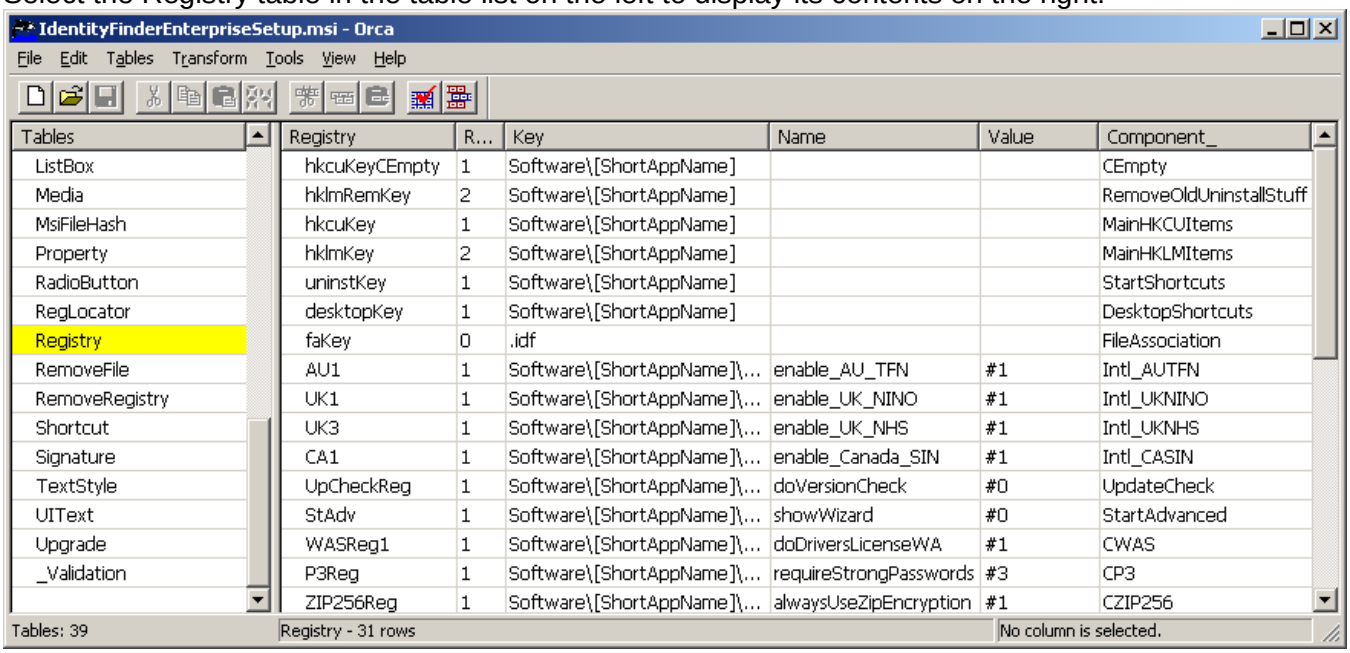
- String Value (REG_SZ) – A string value is entered without any special characters. To specify a log name of, "C:\data\log.txt", enter the following into the value field: C:\data\log.txt

- **Component_** - Indicates the install component associated with the key. For simplicity, this should be either MainHKCUItems for any item stored under HKEY_CURRENT_USER or MainHKLMItems for any item stored under HKEY_LOCAL_MACHINE. These component definitions are unique to the Identity Finder MSI. If one of these is not used, the registry setting will not be installed by the MSI.

1. Locate the MSI, either as the output of adding a license file to the installer as described above in Using a Batch Script to Add a License File or Manually Adding a License File, or by extracting the MSI manually as described in Manually Extracting the MSI.

2. Right click on the MSI in Windows Explorer and choose "Edit in Orca". Alternatively, open Orca and go to the File → Open menu and locate the MSI.

3. Select the Registry table in the table list on the left to display its contents on the right:



Tables
ListBox
Media
MsiFileHash
Property
RadioButton
RegLocator
Registry
RemoveFile
RemoveRegistry
Shortcut
Signature
TextStyle
UIText
Upgrade
_Validation

Registry	R...	Key	Name	Value	Component_
hkcuKeyCEmpty	1	Software\[ShortAppName]			CEmpty
hklmRemKey	2	Software\[ShortAppName]			RemoveOldUninstallStuff
hkcuKey	1	Software\[ShortAppName]			MainHKCUItems
hklmKey	2	Software\[ShortAppName]			MainHKLMItems
uninstKey	1	Software\[ShortAppName]			StartShortcuts
desktopKey	1	Software\[ShortAppName]			DesktopShortcuts
faKey	0	.idf			FileAssociation
AU1	1	Software\[ShortAppName]\...	enable_AU_TFN	#1	Intl_AUTFN
UK1	1	Software\[ShortAppName]\...	enable_UK_NINO	#1	Intl_UKNINO
UK3	1	Software\[ShortAppName]\...	enable_UK_NHS	#1	Intl_UKNHS
CA1	1	Software\[ShortAppName]\...	enable_Canada_SIN	#1	Intl_CASIN
UpCheckReg	1	Software\[ShortAppName]\...	doVersionCheck	#0	UpdateCheck
StAdv	1	Software\[ShortAppName]\...	showWizard	#0	StartAdvanced
WASReg1	1	Software\[ShortAppName]\...	doDriversLicenseWA	#1	CWAS
P3Reg	1	Software\[ShortAppName]\...	requireStrongPasswords	#3	CP3
ZIP256Reg	1	Software\[ShortAppName]\...	alwaysUseZipEncryption	#1	CZIP256

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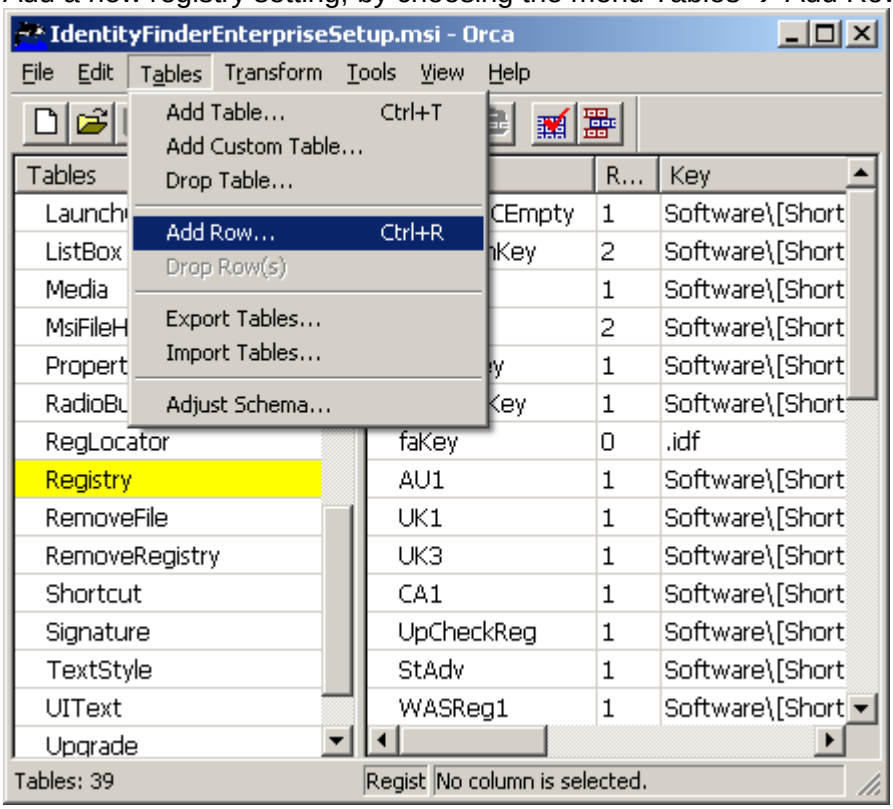
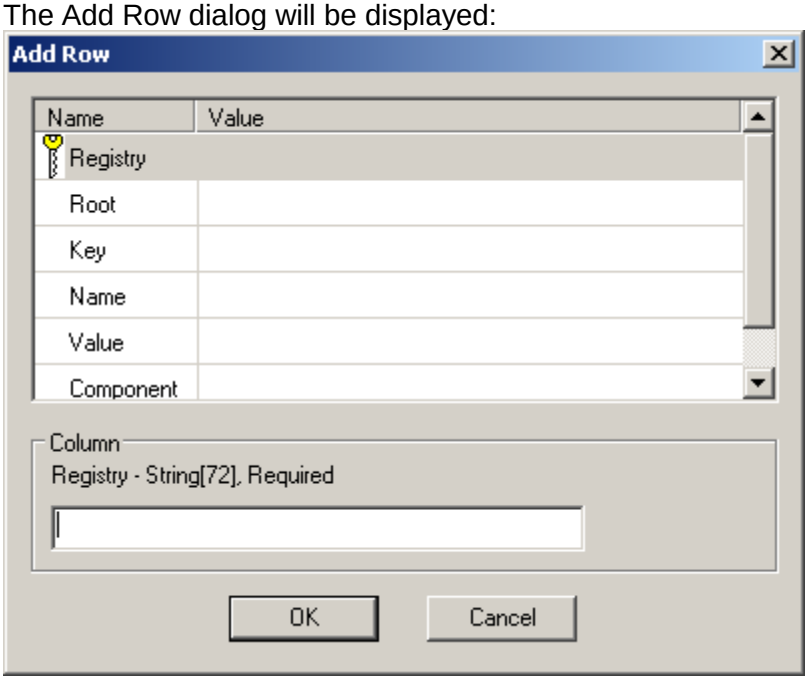
4. Add a new registry setting, by choosing the menu Tables → Add Row:



5. The Add Row dialog will be displayed:



6. Complete each field according with the desired values. For example, the use of AnyFind Password searching for all users on a computer will be disabled. This setting has the following registry information:
   Key: HKEY_LOCAL_MACHINE\Software\Identity Finder\Client\Password
   Value Name: EnableAnyFind
   Value Type: REG_DWORD
   Value Data: 0

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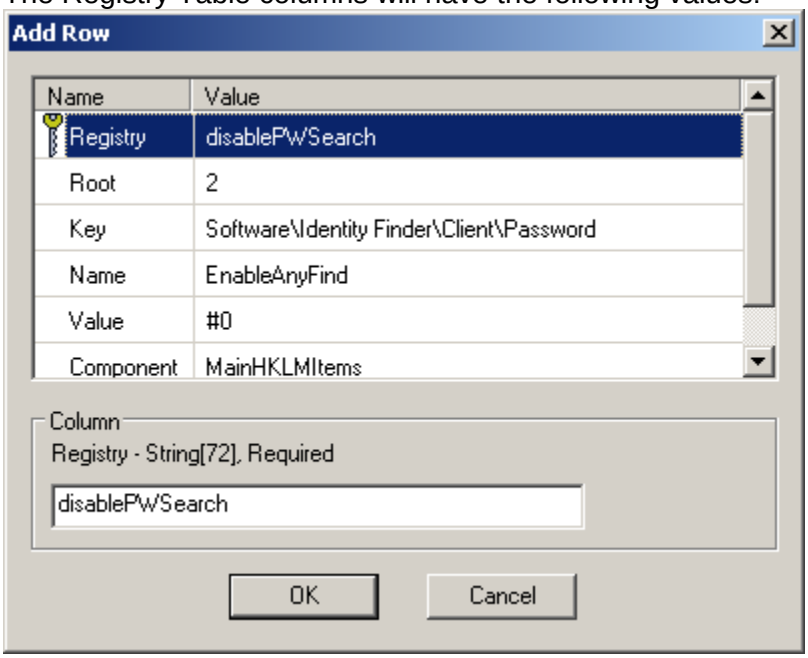
The Registry Table columns will have the following values:



The values are:

- Registry: disablePWSearch
- Root: 2
- Key: Software\Identity Finder\Client\Password
- Name: EnableAnyFind
- Value: #0
- Component_: MainHKLMItems

7. Repeat the steps above to add all desired registry keys.

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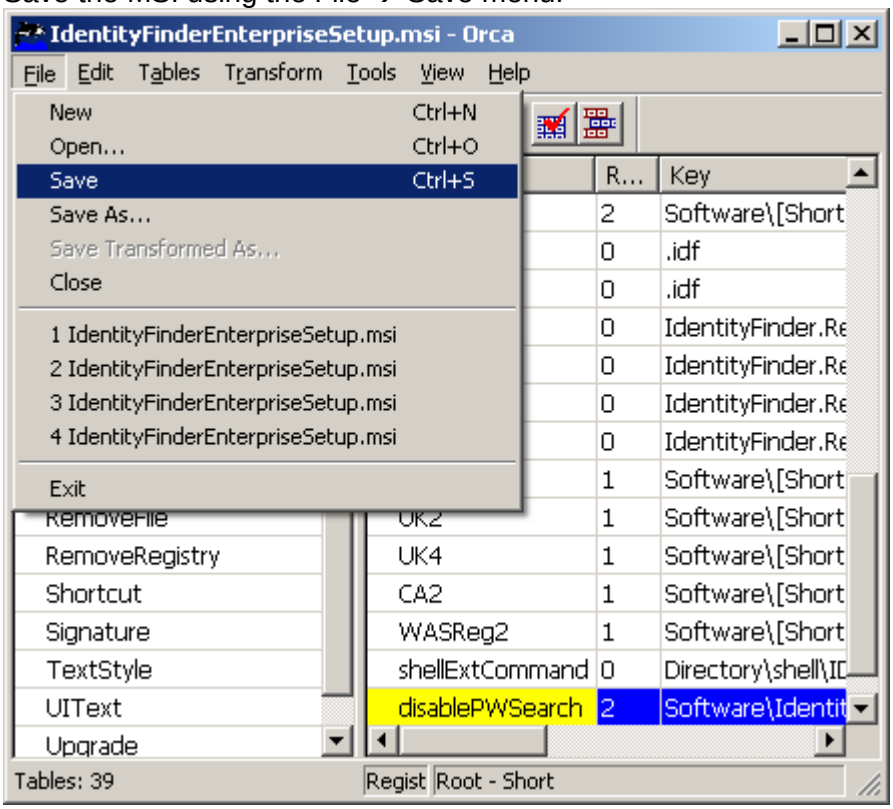
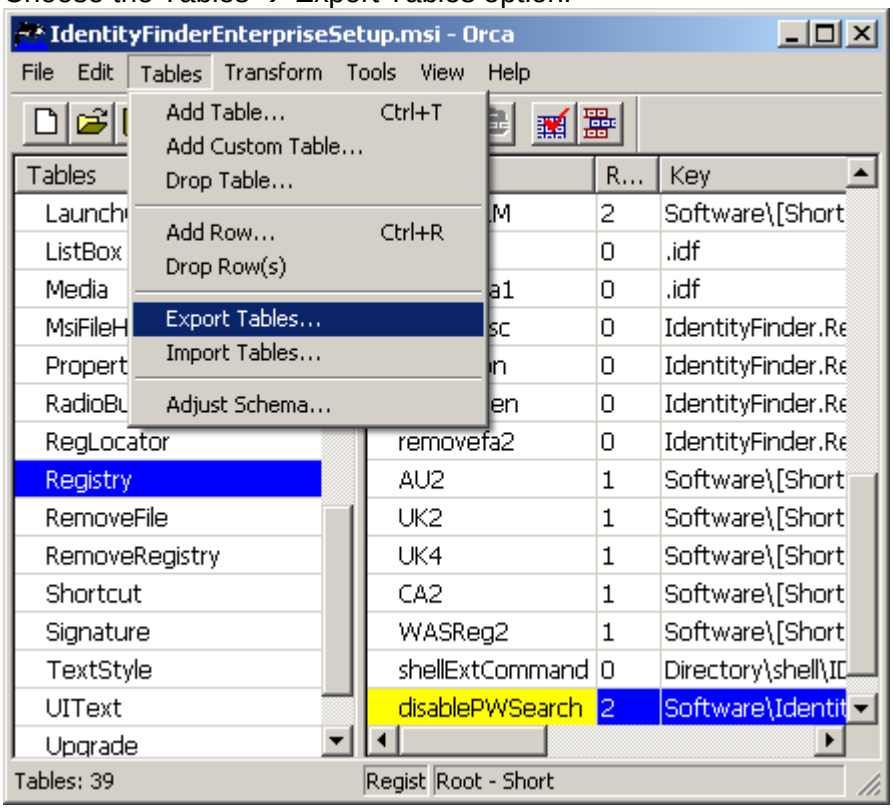
8. Save the MSI using the File → Save menu:



9. Export the Registry Table to a text file in case the MSI gets accidentally deleted or if support help is required.
   a. Choose the Tables → Export Tables option:



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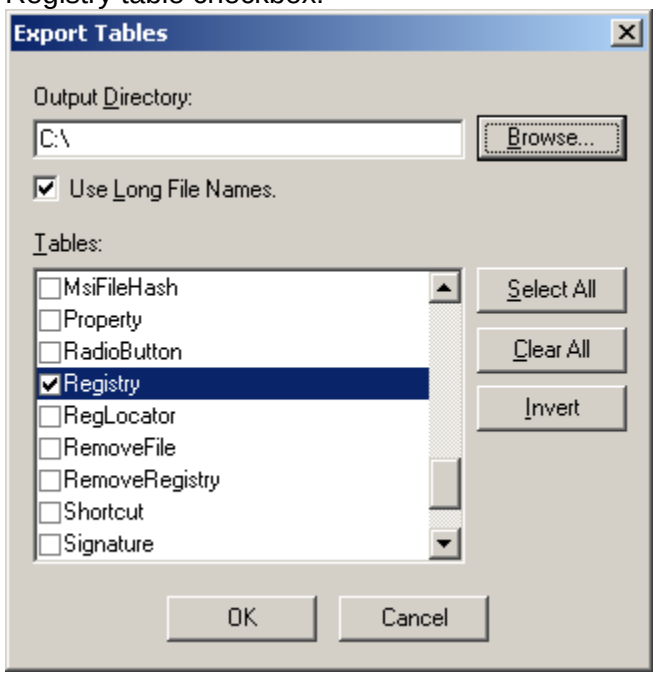
b. Select the appropriate output directory by clicking the Browse button, and selecting only the Registry table checkbox:



c. Click OK. A file named Registry.idt will be created in the selected directory (the example above specifies C:\).

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Adding a Scheduled Task

Description: This section describes the use of operating system programs to automatically schedule a task when user credentials (a username and password) are programmed into the MSI.

NOTE: Task Scheduling on Windows requires a valid user name and password combination (credentials). Because the scheduled task must be updated when a password is changed, it is recommended that only service accounts that have a password that cannot be changed or the local system account is used. If the local system account is used, Identity Finder will not have network access to save results to a network location nor will it have access to search remote systems over the network.

1. Locate the files required to add a scheduled task creation action to the MSI. The zip file that contains this document also contains a folder named "MSI - Task Scheduler," that contains the following files:
    - AppSearch.idt
    - Component.idt
    - CustomAction.idt
    - DrLocator.idt
    - FeatureComponents.idt
    - InstallExecuteSequence.idt
    - Registry.idt
    - Signature.idt

2. Determine how and when the task should be run and what credentials will be used. The Identity Finder Administrator's Guide describes the command line options for configuring and launching the task via the registry or a configuration (*.xml) file. There are multiple ways to configure a scheduled task, for example:
    a. Some customers run the search once a week or once a month as the local system account and read settings from the registry.
    b. Some customers configure the search with a service account where the settings and results are read from and saved to a secured network location.
    c. Some customers configure the clients to report to the Monitoring Console so that all results are stored in a centralized reporting interface. This is possible even if an account without network credentials is used.

3. Edit the CustomAction.idt file in the "MSI – Task Scheduler" folder. This is a tab delimited text file that contains the command line to send to the schtasks.exe program (available on Windows systems for configuring a scheduled task from the command line). The CustomAction.idt file can be opened in any text editor, such as Notepad. The file contains a header describing the MSI CustomAction table, and has the following columns:
    - Action – A unique name for the Custom Action to be performed, this should be "ScheduleTask". No other names should be added or edited in this file.
    - Type – This indicates the Custom Action type for the MSI. The "ScheduleTask" line the value must always be 98.
    - Source – This indicates the starting directory, which should always be INSTALLDIR.
    - Target – This is the string that will be executed by the system. Edit this value if non-default settings are required.

4. Create the ScheduleTask in the CustomAction.idt file. The default is:

    ScheduleTask 98 INSTALLDIR "[SCHTASKSLOC]" /Create /SC Weekly /TR "\"[INSTALLDIR][EXENAME]\" /jobmode" /D Sat /ST 23:00:00 /TN IdentityFinder /RU "NT

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AUTHORITY\SYSTEM"

Each part of the command line can be described as follows:

a. The first 3 columns (tab separated) of “ScheduleTask 98 INSTALLDIR” do not ever change and should be left alone. The last column contains the command line to be executed during installation.
b. The “[SCHTASKSLOC]” is a dynamic property (variable) that is set by the MSI installer once it finds the system location of the schtasks.exe program. This should not be changed.
c. The “/Create” means that schtasks.exe should create a task.
a. The “/D Sat /ST 23:00:00” describes the schedule. This translates to: Run the task daily every Saturday at 11pm local time. To view all the different time scheduling options, open a command prompt by clicking Start → Run, typing “`cmd`” without quotes, and pressing Enter. Then type

```
schtasks /Create /?
```

d. The /TR "\"[INSTALLDIR][EXENAME]\" /jobmode" describes the command line that the task scheduler will run. The quotes in this part of the command are extremely important. If paths and arguments are not properly quoted, the task may be created but will never run. The /TR switch indicates to schtasks.exe that the following command line should be run and is followed by a space and then the open quote “ character. The entire command line is contained within “” quote characters (the last one is after /jobmode). However, quotes are also needed around the full path to the Identity Finder executable, so the backslash \ character is used before any quotes to ensure that they are escaped and added to the task scheduler’s definition. In the case above, Identity Finder would be run from its installation location with the switch /jobmode. If a default install is performed, this would create a task with the following command line:

   “C:\Program Files\Identity Finder 4\IdentityFinder.exe” /jobmode

   If an ini file is desired and, for example, it is in a network location, that information must also be quoted. The line in the CustomAction.idt should read:

   ScheduleTask 98 INSTALLDIR "[SCHTASKSLOC]" /Create /SC Weekly /TR "\"[INSTALLDIR][EXENAME]\" /jobmode /inifile=\”\\NetworkServer\ShareName\IDF.ini\”" /D Sat /ST 23:00:00 /TN IdentityFinder /RU "NT AUTHORITY\SYSTEM"

e. The /TN IdentityFinder names the task in the Scheduled Tasks folder on the computer. This name can be anything as long as it doesn’t contain special characters; however, there is little reason to ever change this value.
f. The last components of the line are the user credentials. By default the task is scheduled as the local system account by /RU “NT AUTHORITY\SYSTEM”; however, any user account and credentials may be used. The syntax is /RU “DOMAIN\USER” /RP “PASSWORD”. For example, if a default configuration was desired but a service account with the domain “IdentityFinder” and user name of “IDF_Service”, and a password of “Id3ntity1!”, the CustomAction.idt line would change to:

   ScheduleTask 98 INSTALLDIR "[SCHTASKSLOC]" /Create /SC Weekly /TR "\"[INSTALLDIR][EXENAME]\" /jobmode" /D Sat /ST 23:00:00 /TN IdentityFinder /RU "IdentityFinder\IDF_Service" /RP “Id3ntity1!”

5. Import the updates into the MSI. The MSI can be obtained as the output of adding a license file to the installer as described above in Using a Batch Script to Add a License File or Manually Adding a License File, or by extracting the MSI manually as described in Manually Extracting the MSI.

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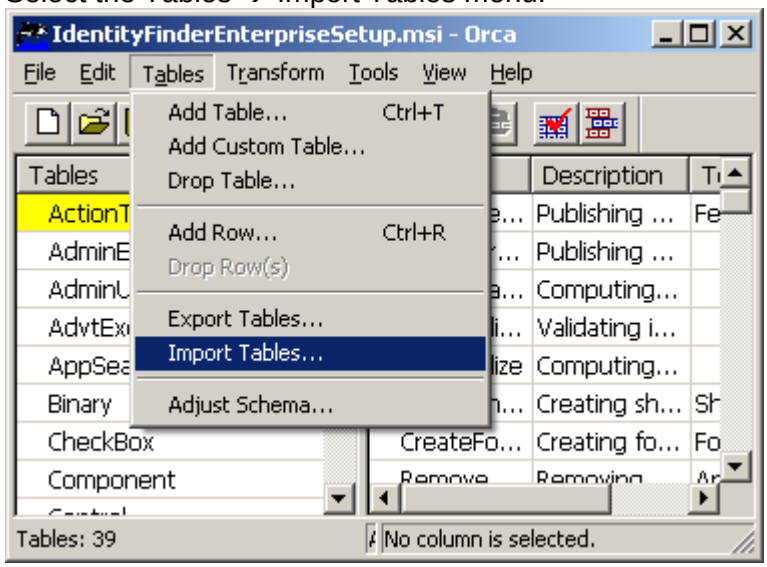
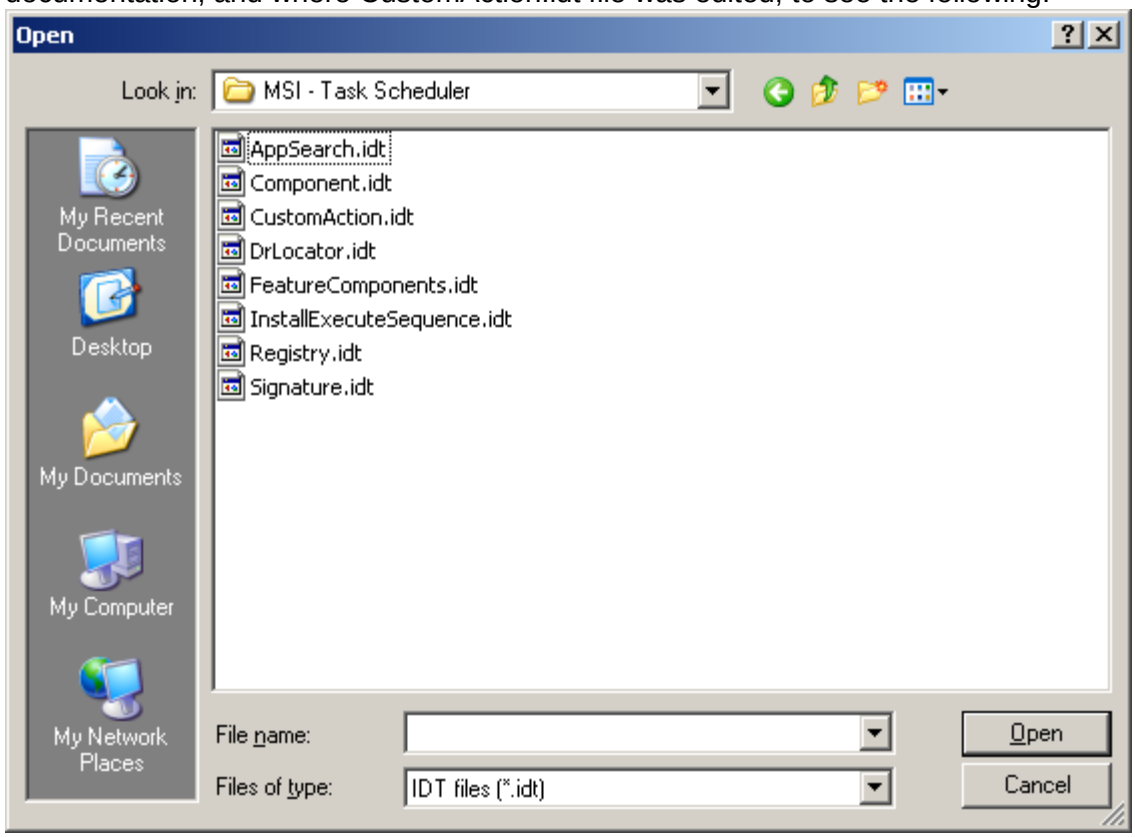
a. Right click on the MSI in Windows Explorer and choose “Edit in Orca”. Alternatively, open Orca and go to the File → Open menu and locate the MSI.

b. Select the Tables → Import Tables menu:



c. Navigate to the folder “MSI - Task Scheduler” included in the zip file that contained this documentation, and where CustomAction.idt file was edited, to see the following:



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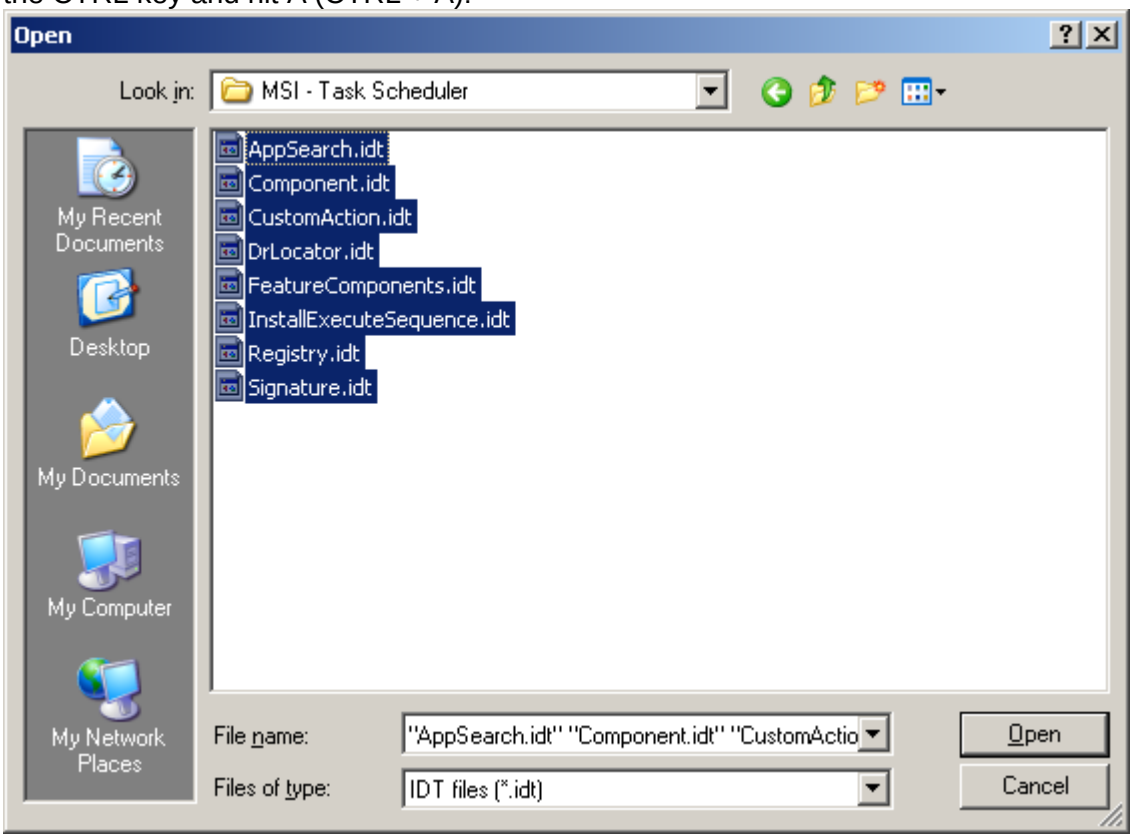
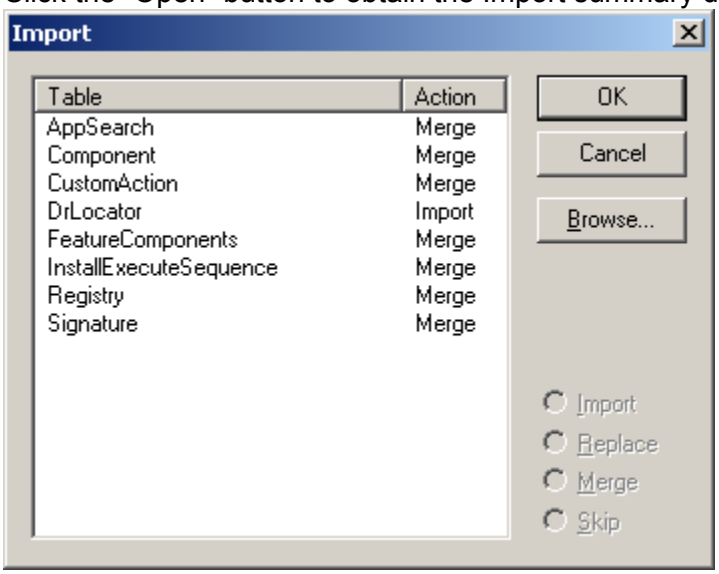
d. Select all of the files by using the mouse to drag a selection box over all files, or hold down the CTRL key and hit A (CTRL + A):



e. Click the “Open” button to obtain the Import summary dialog:



f. Click OK to import all of the changes into the MSI.

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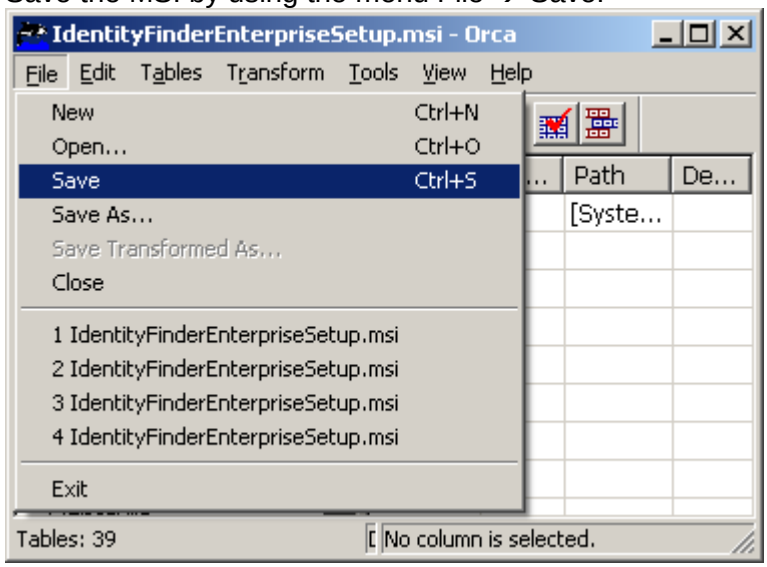
g. Save the MSI by using the menu File → Save:



h. Exit Orca and test the MSI.

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Installing the Identity Finder Endpoint Service

Description: This section describes how to install the Identity Finder Endpoint Service. By default the Identity Finder Endpoint Service is not installed. This component is required for interaction between the Identity Finder Client and the Identity Finder Management Console. There are two settings relating to the installation of the Endpoint Service that allow users to install the service with or without the service showing up in the feature list in the graphical installation mode. It is also possible to install the Endpoint Service executable files without registering the Endpoint Service with the operating system. This configuration is available only for customers who are using the Management Console for reporting only, who do not wish to register a service with the operating system.

Enable Endpoint Service Installation

Description: The steps that follow describe how to enable the Endpoint Service installation, which registers the service with the operating system and sets it to start automatically. This service runs as LocalSystem and is used for management of Identity Finder clients. In order for installation to succeed and the service to start, the Endpoint Service configuration in the registry must either be configured by the customized MSI, or it must exist on the system prior to installation. Please refer to the Management Console documentation for information regarding the required registry settings for the Endpoint Service.

1. To enable the installation of the Identity Finder Endpoint Service, perform the following steps:
    a. Locate the MSI package file. The MSI can be obtained as the output of adding a license file to the installer as described above in Using a Batch Script to Add a License File or Manually Adding a License File, or by extracting the MSI manually as described in Manually Extracting the MSI.

    b. Right click on the MSI in Windows Explorer and choose “Edit in Orca”. Alternatively, open Orca and go to the File → Open menu and locate the MSI.

    c. Select the Property table.

    d. Find the “INSTALLIDFSERVICE” property row.

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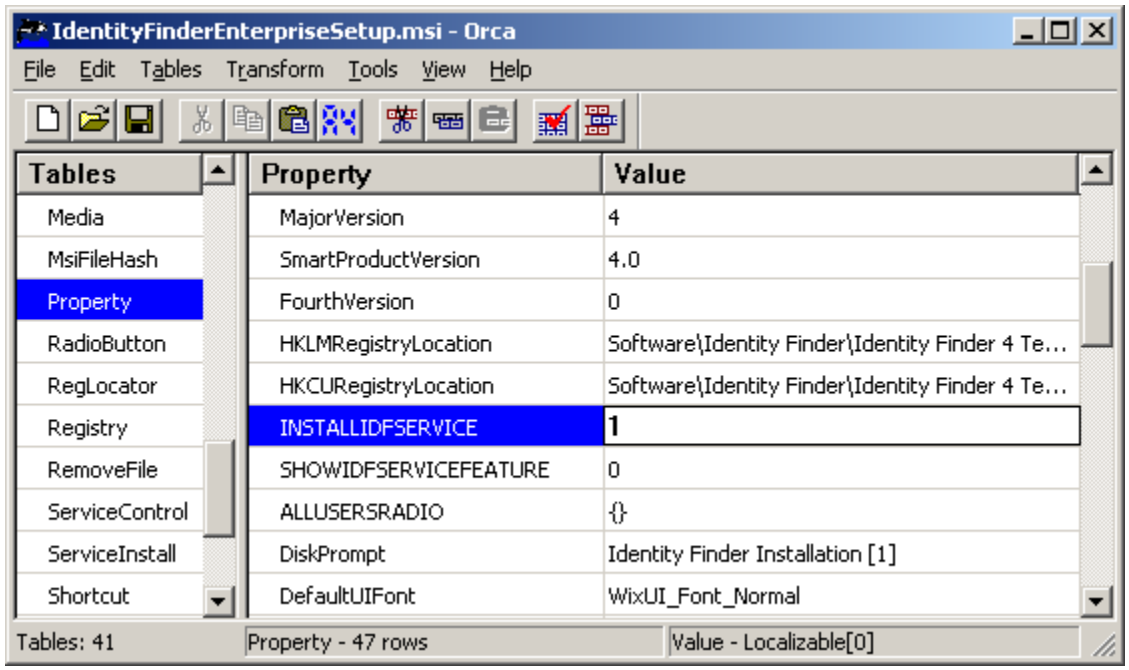
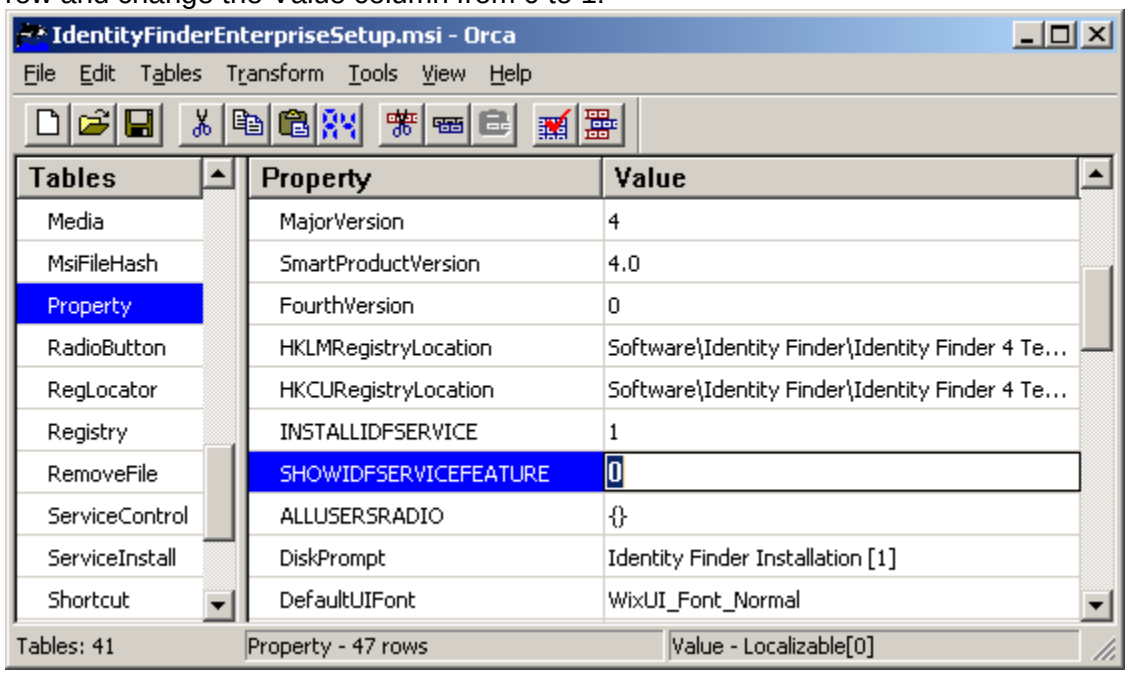
e. In the Value column for the “INSTALLIDFSERVICE” property row, change the default value from 0 to 1:



f. To install the Endpoint Service automatically, without providing the user an option to turn the feature off, continue to step (h) below.

g. To enable the Endpoint Service feature to be displayed in the Feature List available in the graphical installation of Identity Finder, select the “SHOWIDFSERVICEFEATURE” property row and change the Value column from 0 to 1:



NOTE: If the “SHOWIDFSERVICEFEATURE” is set to 1, and the user is allowed to perform a graphical installation of Identity Finder, they can click the Custom button and they will have the ability to enable or disable installation of the Endpoint Service. When this setting is configured, the default install state is governed by the “INSTALLIDFSERVICE” property

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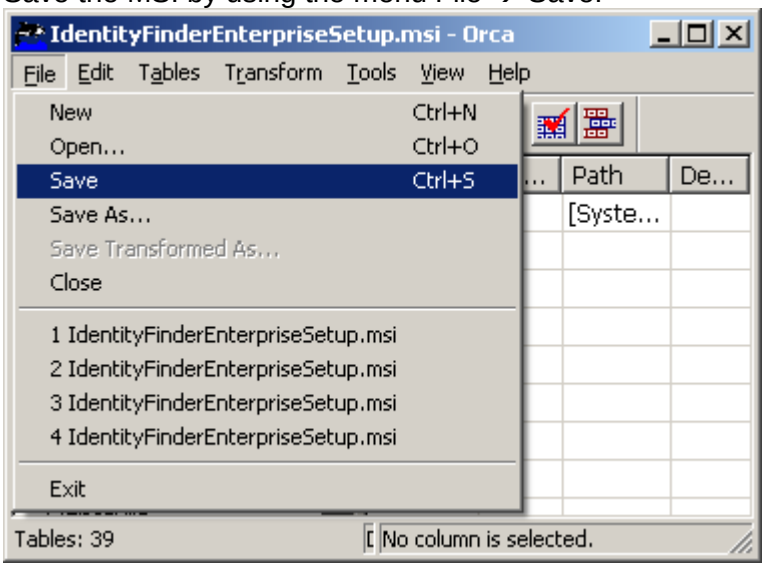
discussed above in step (e). Setting “INSTALLIDFSERVICE” to 0 will have the feature disabled for installation by default, and a 1 means that by default the feature will be included in installation.

h. Save the MSI by using the menu File → Save:



i. Exit Orca and test the MSI.

Install Only Endpoint Application Files

Description: The steps that follow describe how to install only the Endpoint Service application files. These steps will ensure that the service is not registered with the operating system. When the installation is configured in this manner the Identity Finder Client can only send data to the Management Console for reporting purposes only.

NOTE: Disabling service registration will prevent Identity Finder from doing anything except sending results to the Management Console for reporting functionality only. When the MSI is edited in this manner, users cannot upgrade the MSI using an MSI directly from the Identity Finder web site. Thus it is highly recommended that if these options are used, the MSI contains settings that prevent Auto Update functionality from ever executing in the Identity Finder Client software. Please consult the Administrators Guide for a list of settings and a description of the Auto Update settings. In order for users who install with the edits listed below to upgrade, the administrator distributing the installation package must download the new MSI from the Identity Finder web site and re-apply all edits to the MSI before pushing it out as an upgrade. Performing these edits and subsequently requiring an update is the sole responsibility of the party editing the MSI package, and is not supported by Identity Finder.

1. To install only the Endpoint Service application files requires all service specific configurations to be removed from the MSI, and the actual service application files must be re-assigned to another installation component. To accomplish this, perform the following steps:
   a. Locate the MSI package file. The MSI can be obtained as the output of adding a license file to the installer as described above in Using a Batch Script to Add a License File or Manually Adding a License File, or by extracting the MSI manually as described in Manually Extracting the MSI.

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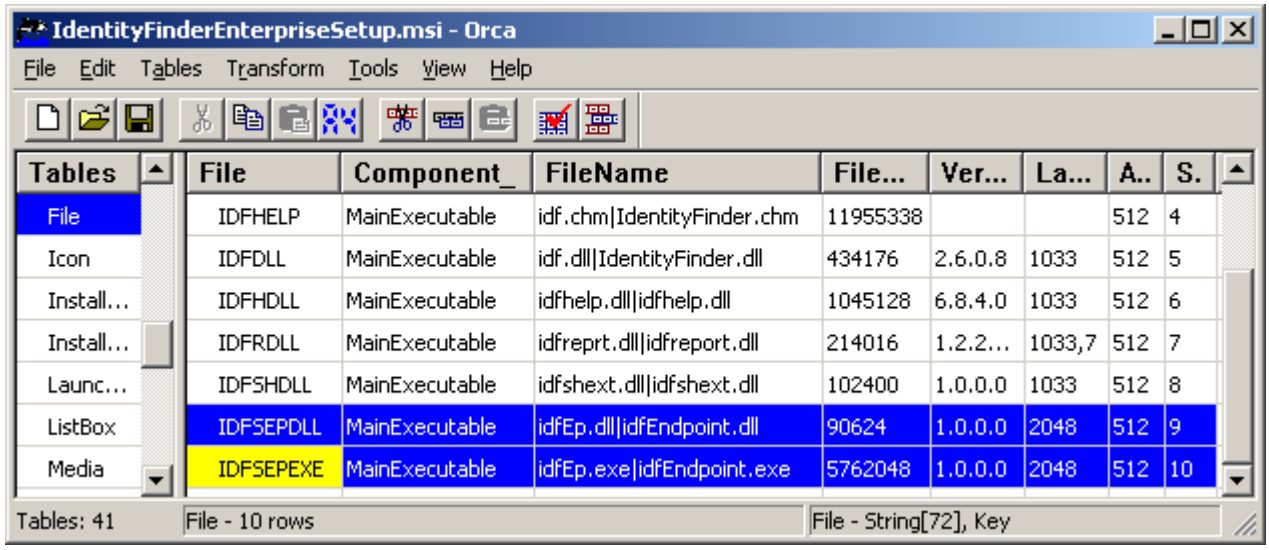
b. Right click on the MSI in Windows Explorer and choose “Edit in Orca”. Alternatively, open Orca and go to the File → Open menu and locate the MSI.

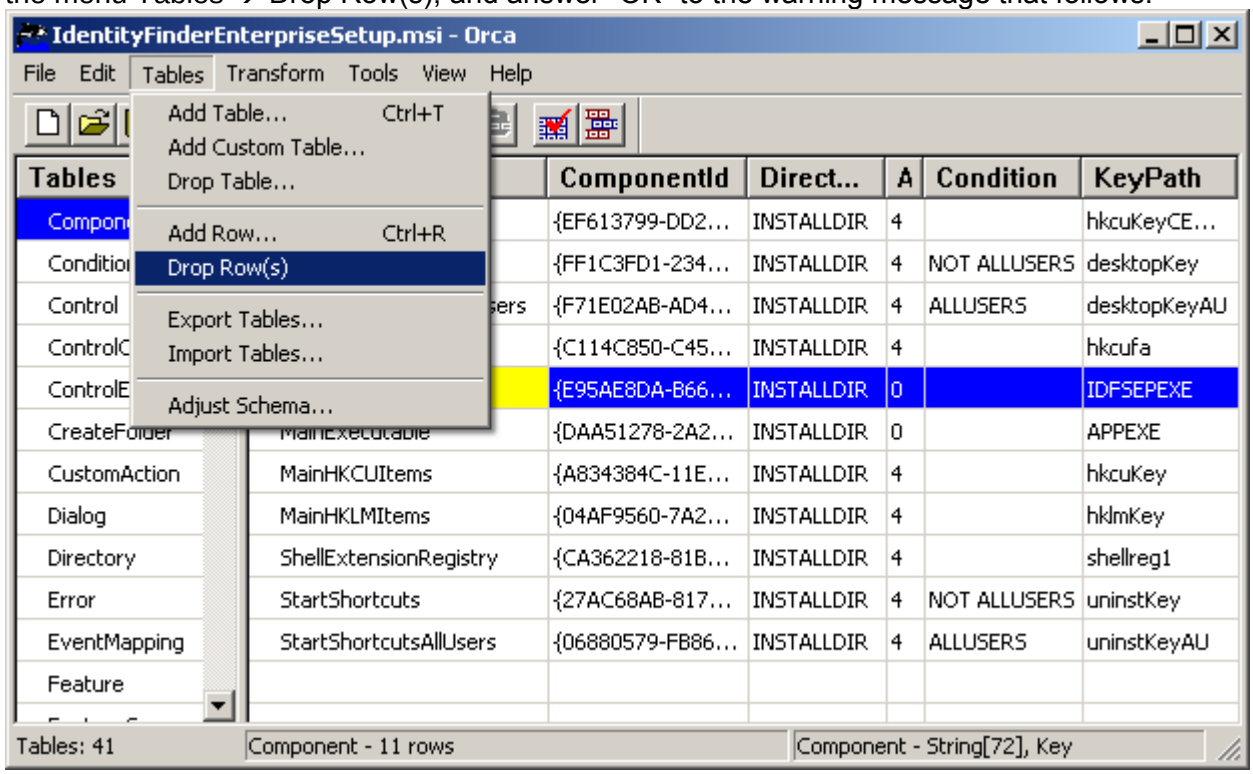
c. Select the File table.

d. Locate the row where the File column has the value “IDFSEPDLL” and change the “Component_” column value from “IDFService” to “MainExecutable”. Perform the same change for the row with the File column value “IDFSEPEXE”. When complete, these two rows should look as follows in the File table:



File	Component_	FileName	File...	Ver...	La...	A..	S.
IDFHELP	MainExecutable	idf.chm|IdentityFinder.chm	11955338			512	4
IDFDLL	MainExecutable	idf.dll|IdentityFinder.dll	434176	2.6.0.8	1033	512	5
IDFHDLL	MainExecutable	idfhelp.dll|idfhelp.dll	1045128	6.8.4.0	1033	512	6
IDFRDLL	MainExecutable	idfreprt.dll|idfreport.dll	214016	1.2.2...	1033,7	512	7
IDFSHDLL	MainExecutable	idfshext.dll|idfshext.dll	102400	1.0.0.0	1033	512	8
IDFSEPDLL	MainExecutable	idfEp.dll|idfEndpoint.dll	90624	1.0.0.0	2048	512	9
IDFSEPEXE	MainExecutable	idfEp.exe|idfEndpoint.exe	5762048	1.0.0.0	2048	512	10

e. Go to the Component table and remove the row where the Component column value is “IDFService”. To remove the row, first highlight the row by clicking on it, and then selecting the menu Tables → Drop Row(s), and answer “OK” to the warning message that follows:



ComponentId	Direct...	A	Condition	KeyPath
{EF613799-DD2...	INSTALLDIR	4		hkcuKeyCE...
{FF1C3FD1-234...	INSTALLDIR	4	NOT ALLUSERS	desktopKey
{F71E02AB-AD4...	INSTALLDIR	4	ALLUSERS	desktopKeyAU
{C114C850-C45...	INSTALLDIR	4		hkcufa
{E95AE8DA-B66...	INSTALLDIR	0		IDFSEPEXE
{DAA51278-2A2...	INSTALLDIR	0		APPEXE
{A834384C-11E...	INSTALLDIR	4		hkcuKey
{04AF9560-7A2...	INSTALLDIR	4		hklmKey
{CA362218-81B...	INSTALLDIR	4		shellreg1
{27AC68AB-817...	INSTALLDIR	4	NOT ALLUSERS	uninstKey
{06880579-FB86...	INSTALLDIR	4	ALLUSERS	uninstKeyAU

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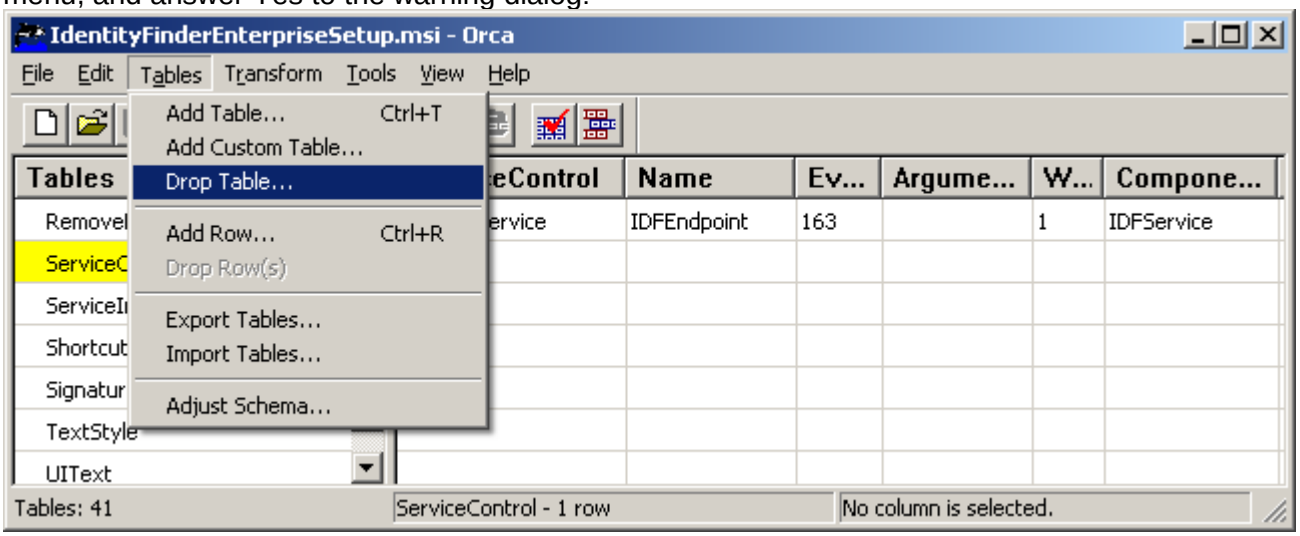
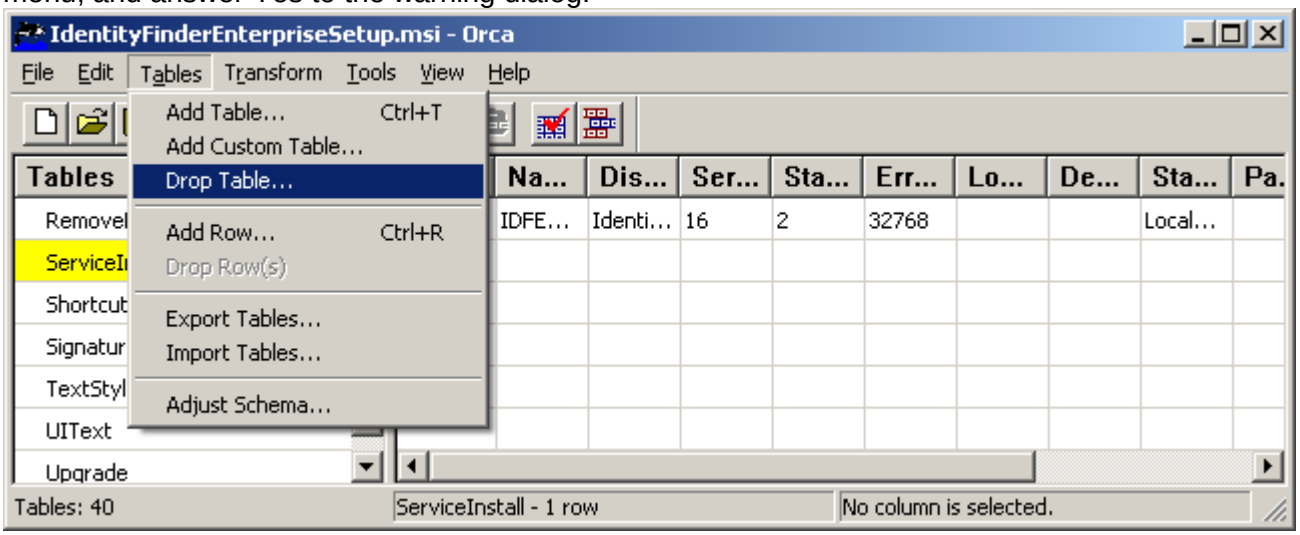
f. Several rows in other tables will need to be removed (dropped) as well. Follow step (e) above for the following table rows:
   i. Feature table, the row where the Feature column value is “IDFServiceInstall”.
   ii. FeatureComponents table, the row where the “Feature_” column value is “IDFServiceInstall”.
   iii. CustomAction table, the row where the “Action” column has the value “RemoveServiceFeature”.
   iv. InstallUISequence table, the row where the “Action” column has the value “RemoveServiceFeature”.
   v. Condition table, all rows where the “Feature_” column has the value “IDFServiceInstall”. There should be 2 total rows where the “Feature_” column has the value “IDFServiceInstall”.

g. Find the table ServiceControl and click on it to select it, then go to the Tables → Drop Table menu, and answer Yes to the warning dialog:



h. Find the ServiceInstall table and click on it to select it, then go to the Tables → Drop Table menu, and answer Yes to the warning dialog:



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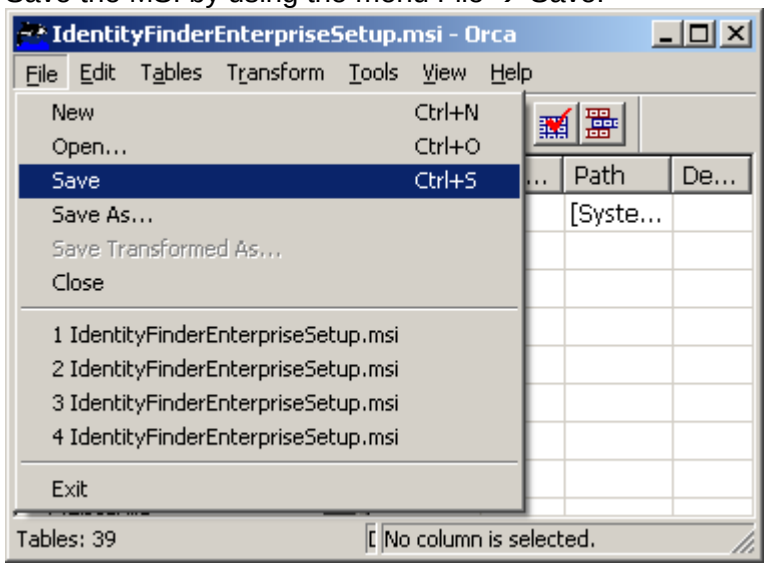
i. Save the MSI by using the menu File → Save:



j. Exit Orca and test the MSI.

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Customizing the Installation Experience

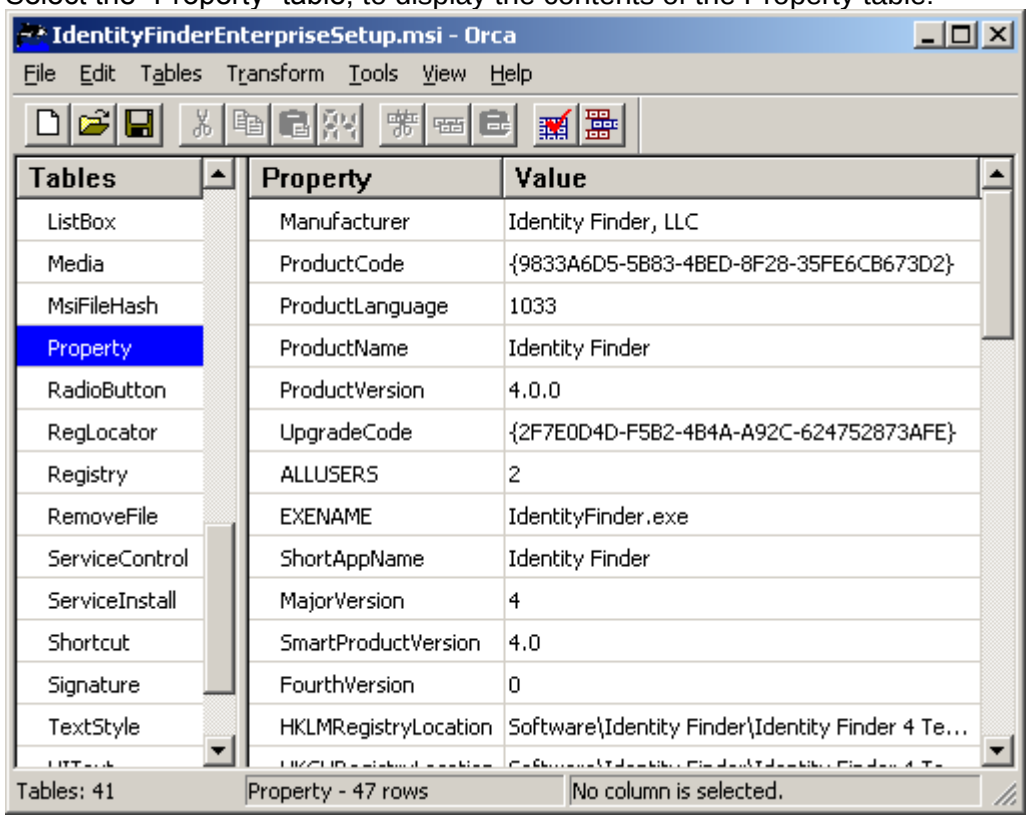
Description: This section describes the customization of the MSI to alter the user experience at installation. There are edits that may be made from a command line launch of the MSI or within the MSI itself to change the options available to the user during a graphical installation or control the events that occur at the end of any installation, such as the launching of Identity Finder.

NOTE: These installer customizations are only available with the installer provided with Identity Finder Enterprise Edition v3.5 and above. Configuring these settings on older installers can break the installation or cause unintended results.

1. To add a property to the Property Table within the MSI:
   a. Locate the MSI package file. The MSI can be obtained as the output of adding a license file to the installer as described above in Using a Batch Script to Add a License File or Manually Adding a License File, or by extracting the MSI manually as described in Manually Extracting the MSI.

   b. Right click on the MSI in Windows Explorer and choose "Edit in Orca". Alternatively, open Orca and go to the File → Open menu and locate the MSI.

   c. Select the "Property" table, to display the contents of the Property table:



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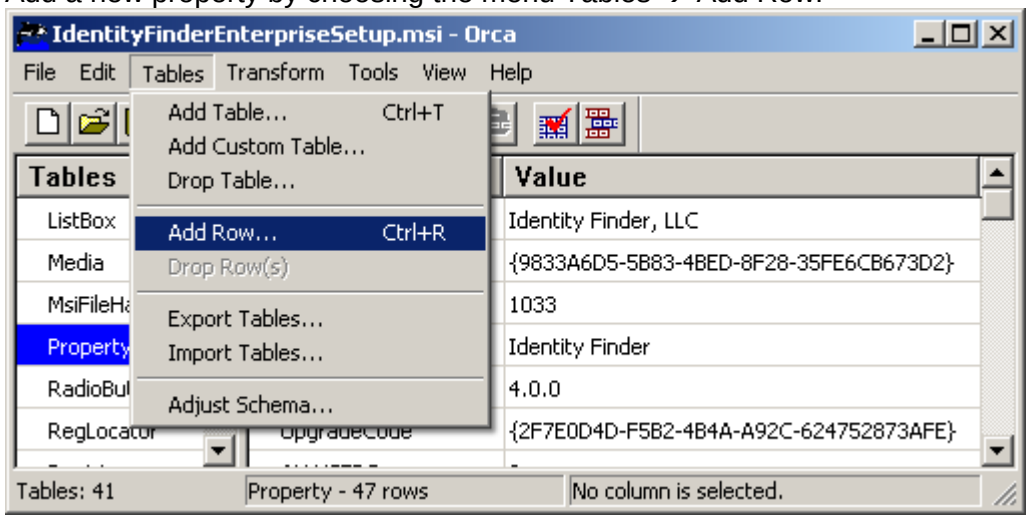
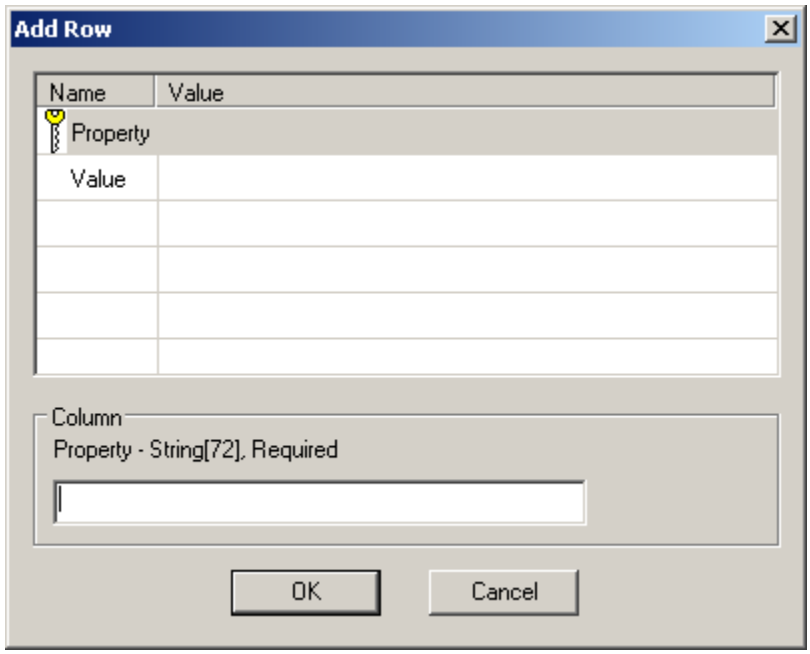
d. Add a new property by choosing the menu Tables → Add Row:



e. The Add Row dialog box will be displayed showing the options for completing the Property and Value fields:



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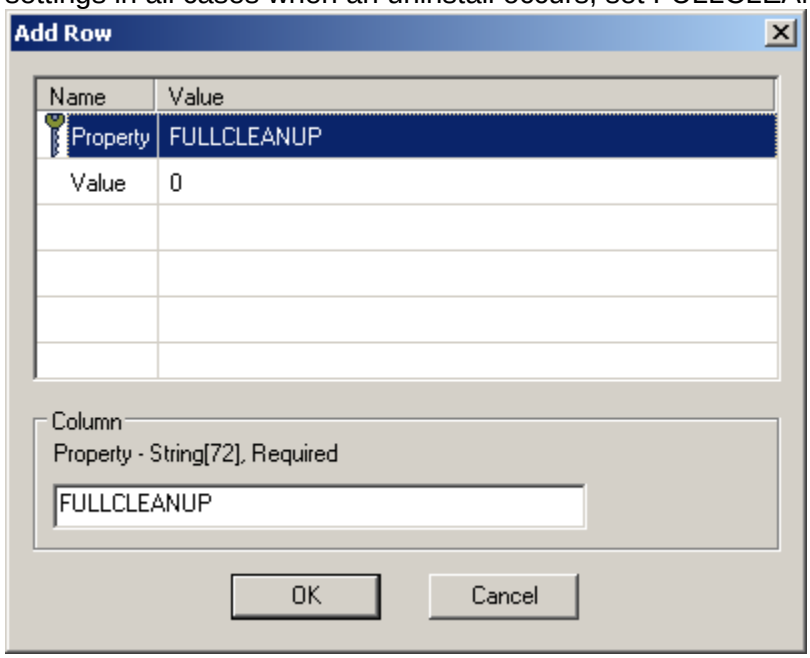
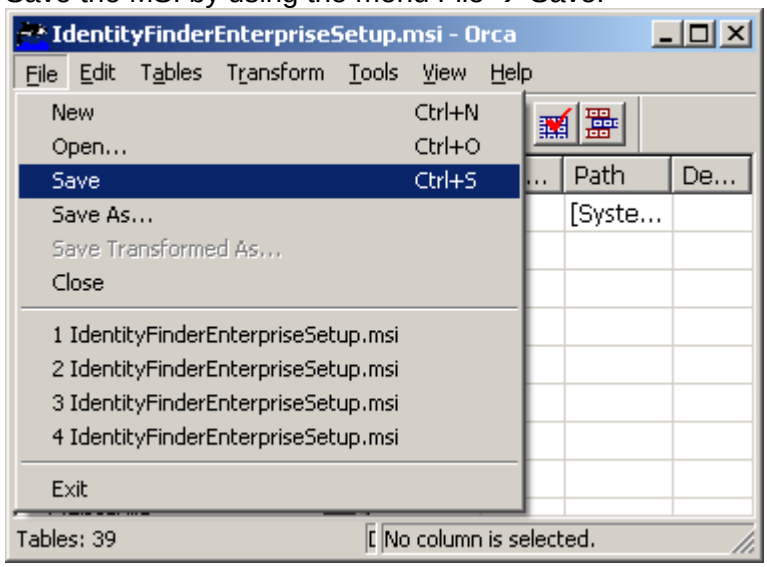
f. Enter the appropriate property name and value. For example, to disable removal of user settings in all cases when an uninstall occurs, set FULLCLEANUP to 0:



g. Repeat steps (a) through (g) for all desired properties.

h. Save the MSI by using the menu File → Save:



2. To edit an existing property in the Property Table, follow these steps:
   a. Follow steps (1a) through (1c) above to open the MSI and display the property table.

   b. Select the property to edit and click on the Value column to edit the Value. For example, to uncheck the Launch Identity Finder checkbox on the last page of the installer, set the

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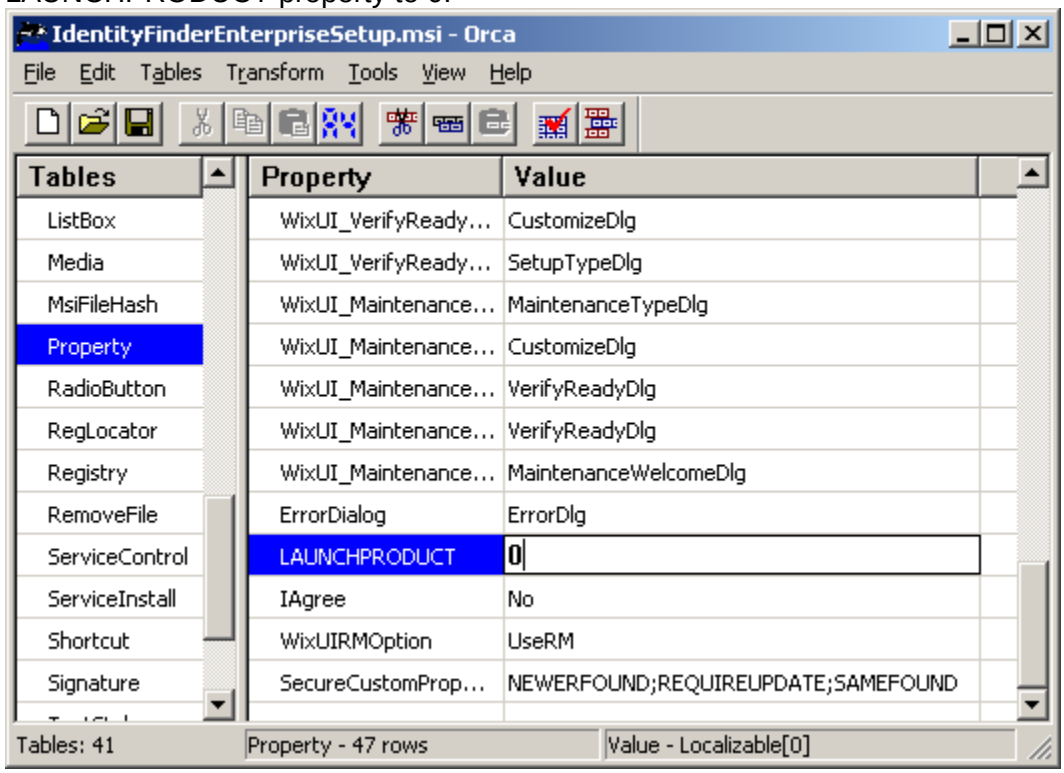
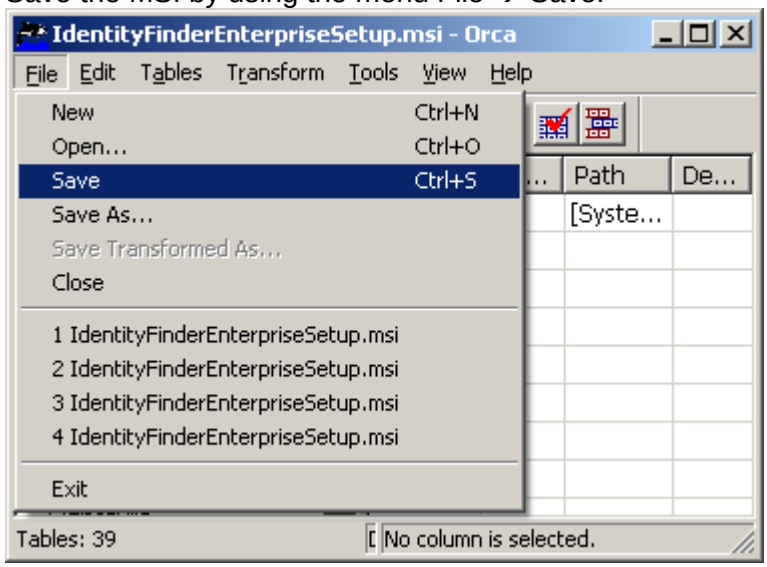
LAUNCHPRODUCT property to 0:



c. Repeat steps (a) through (b) above to edit as many properties as desired.

d. Save the MSI by using the menu File → Save:



3. To add a property to the command line execution of the MSI, follow these steps:
   a. Locate the MSI package file. The MSI can be obtained as the output of adding a license file to the installer as described above in Using a Batch Script to Add a License File or Manually Adding a License File, or by extracting the MSI manually as described in Manually Extracting the MSI.

   b. Open a command prompt by clicking Start → Run, typing "`cmd`" without quotes, and pressing Enter.

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c. In the command window use the “cd” command to navigate to the directory containing the MSI.

d. Launch the MSI using msiexec as follows with desired property=value pairs:

msiexec /i IdentityFinder4Setup.msi PROPERTY1=VALUE1 PROPERTY2=VALUE2

For example, to force user settings to be removed on uninstall, issue the install with the following command line:

```
msiexec /i IdentityFinder4Setup.msi FULLCLEANUP=1
```

The following sub-sections list the different options available for customizing the MSI.

Typical and Custom Installation Options

Description: The graphical installation of Identity Finder has two basic installation options: Typical and Custom. In the Typical mode, the default settings are used to install Identity Finder and users are not shown any of the available features. In Custom mode, users are shown the feature tree displaying the components of the Identity Finder installation and can select or deselect each component.

Either the Typical or Custom installation option can be disabled, but not both. If both are disabled, the Typical option will still be available, otherwise the user would not be able to install Identity Finder.

To disable the Typical installation option, use the following property:
Property Name: DISABLETYPICALINSTALL
Property Value: 1

To Disable the Custom installation option, use the following property:
Property Name: DISABLECUSTOMINSTALL
Property Value: 1

Per-User or Per-Machine Installations

Description: Starting with Identity Finder Enterprise version 3.5, all installations are Per-Computer installations by default. All prior versions defaulted to Per-User installations. It is possible to change the default install type and to force the setting on the user and not allow them to change the setting.

To change the default installation type, use the following property:
Property Name: ALLUSERS
Property Values:

- 0 – This value will force a per-computer installation. If the installer does not have rights to install a per-machine application, the install will fail.
- 1 – This value will force a per-user installation.
- 2 – This is the default value. This value will allow the installer to determine whether or not it can install the application on a per-computer basis, and if it can not, it will install per-user only.

For more information about how the ALLUSERS property works, please reference the ALLUSERS property in the Microsoft Windows Installer MSDN Documentation:
http://msdn.microsoft.com/en-us/library/aa367559(VS.85).aspx

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To prevent users from being able to change the Per-User or Per-Computer installation type on a graphical install, use the following property:
Property Name: DISABLEAUOPTION
Property Value: 1

Launching Identity Finder After Installation

Description: It is possible to launch Identity Finder after an installation and it is also possible to force this to happen in both graphical and non-graphical installation modes. This allows the launch of Identity Finder regardless of how an MSI package is installed and it can occur with a custom command line that could, for example, kick off a search from within Identity Finder.

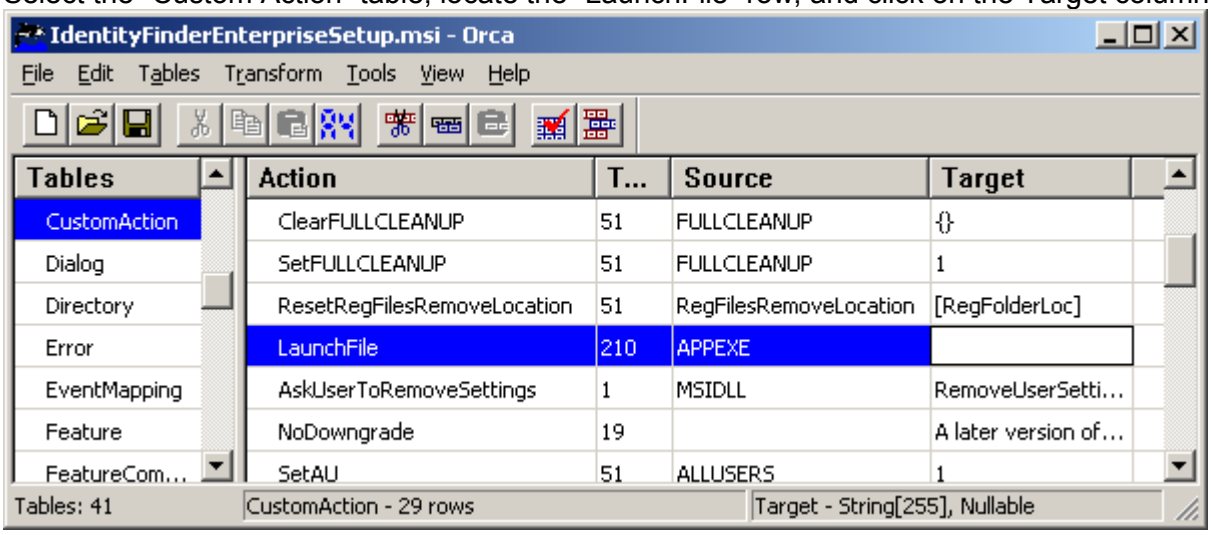
By default when a graphical installation ends the user is shown a checkbox that is checked with the option to launch Identity Finder. To change the default so that the checkbox is unchecked, but not disabled, change the following property:
Property Name: LAUNCHPRODUCT
Property Value: 0

To force Identity Finder to be launched upon completion of the installer, set the following property:
Property Name: LAUNCHONEXIT
Property Value: 1

To change the launch command, edit the CustomAction table in the MSI:

1. Right click on the MSI in Windows Explorer and choose “Edit in Orca”. Alternatively, open Orca and go to the File → Open menu and locate the MSI.

2. Select the “Custom Action” table, locate the “LaunchFile” row, and click on the Target column:



3. Add the desired Identity Finder command line parameters. The command line parameters are described in the on-line help, the help included with the installation, and the Administrator’s Guide.

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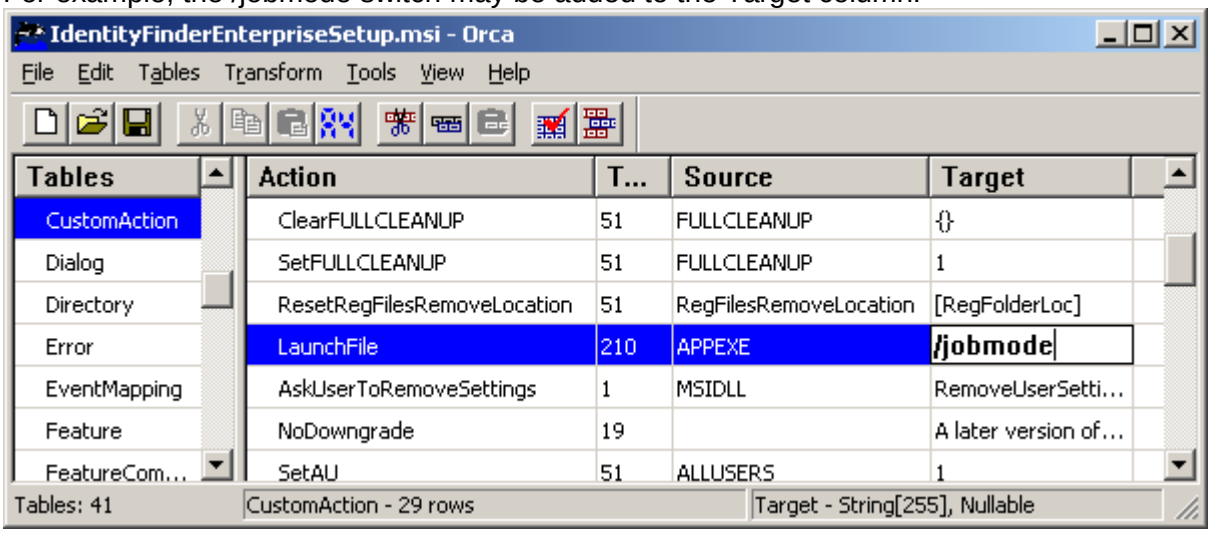
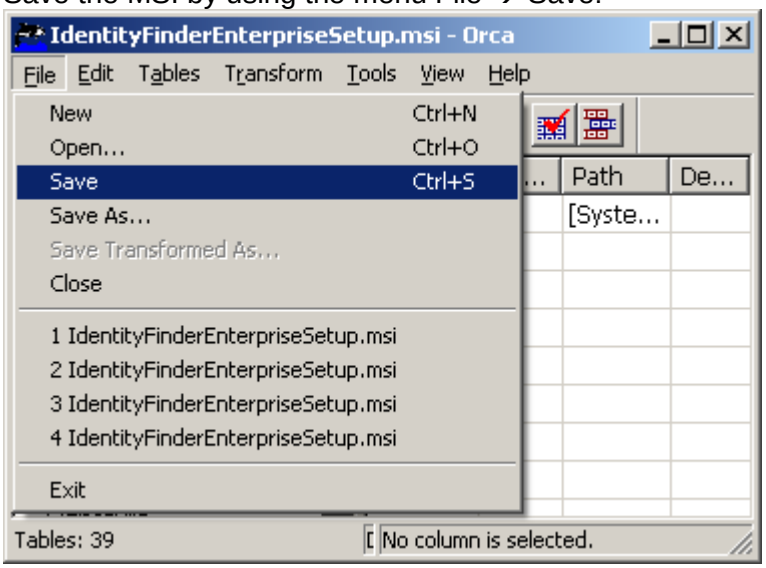
For example, the /jobmode switch may be added to the Target column:



4. Save the MSI by using the menu File → Save:



Optional Removal of User Settings on Uninstall

Description: The installer will provide the user with an option to remove user settings upon any uninstall attempt except a silent (no graphical interface) uninstall. This option may be suppressed to prevent the user from making this choice.

NOTE: Even if the installer "removes user settings" the installer only has access to the currently logged on user who is executing the uninstall operation. It is not possible to remove all settings for all users. In most cases the install/uninstall is done from the same user account, making these options relevant.

To disable providing the user an option for removal of user settings, set the following property:
Property Name: FULLCLEANUP
Property Values:

- 0 – This value will force user settings to be saved during uninstall.
- 1 – This value will force user settings to be removed during uninstall (this is a clean uninstall).

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Force a Non-Graphical Installation of Identity Finder

Description: By default the installer will be run with a graphical interface unless it is launched in a manner that suppresses the graphical interface. It is possible to force the graphical interface by settings a few properties in the MSI.

To suppress the user interface both of the properties below must be set:

Property Name: LIMITUI
Property Value: 1

Property Name: ARPNOMODIFY
Property Value: 1

Configuring the LIMITUI property returns the installation level to Basic. During a Basic installation the MSI installs with a progress bar only. The user is able to cancel the installation only, but is not able to modify any installation options. The ARPNOMODIFY property ensures that when the user opens the Add/Remove Programs Control Panel, the Identity Finder package will not display the “Change” option, since the user is not allowed to change any of the installation options when the MSI is run with an installation level of Basic.

NOTE: These properties should only be set if the MSI package is unable to be deployed in a manner where the UI level can be set to any of the options available within the Windows Installer and a non-interactive installation is required. Most deployment tools, including Active Directory, provide standard Windows Installer options for invoking the installation, including allowing a silent install or setting the exact UI level. Generally, the options listed above would only be used if users are downloading the MSI themselves from a centralized location, or are installing the package manually from installation media, such as a CD or USB key.

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Advanced Installation Parameters

Description: The MSI package can be launched and operated in a variety of different modes with options provided by the Microsoft Installer. Options such as silent installs and uninstalls are possible by sending custom command line parameters to the Microsoft Installer. These options can be integrated into any already existing deployment software to help ensure that the MSI is installed exactly as each organization requires.

To perform a silent installation:

1. Locate the MSI package file. The MSI can be obtained as the output of adding a license file to the installer as described above in Using a Batch Script to Add a License File or Manually Adding a License File, or by extracting the MSI manually as described in Manually Extracting the MSI.

2. Open a command prompt by clicking Start → Run, typing "`cmd`" without quotes, and pressing Enter.

3. Use the "cd" command to navigate to the directory containing the MSI.

4. Execute the following command line:

   ```
   msiexec /i IdentityFinder4Setup.msi /qn
   ```

5. The above command line can be added to any deployment software that distributes the MSI. The /qn switch means that the Windows Installer should install the package without a graphical interface. To obtain all of the command line options, type the following at a command prompt:

   ```
   msiexec /?
   ```

   Alternatively, the Windows Installer Command Line Options documentation is available online through the Windows Installer reference documentation on MSDN: http://msdn.microsoft.com/en-us/library/aa367988.aspx

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Troubleshooting

Description: The Windows Installer is incredibly complex, and one typographical error can cause the installation to break with cryptic error messages. The Windows Installer does provide several different logging options that can help developers determine why an installation is failing. These steps should be followed before contacting the Identity Finder Support Team, as the information obtained from executing these steps is required by the support team in order to help solve the problem.

Generate a Windows Installer Log File

Description: Generating a log file is always the first step in troubleshooting a Windows Installer package failure. In general, regular logging will contain all of the relevant information required to troubleshoot. In the rare instance where more information is required, a verbose debugging logging option is available.

Generating a log file requires the MSI package to be invoked manually using the Windows Installer from the command line:

1. Locate the MSI package file. The MSI can be obtained as the output of adding a license file to the installer as described above in Using a Batch Script to Add a License File or Manually Adding a License File, or by extracting the MSI manually as described in Manually Extracting the MSI.

2. Open a command prompt by clicking Start → Run, typing "`cmd`" without quotes, and pressing Enter.

3. Use the "cd" command to navigate to the directory containing the MSI.

4. Execute the following command line:

   ```
   msiexec /i IdentityFinder4Setup.msi /l* msi-log.txt
   ```

5. Execute the installer in whatever method produces an error and exit the installer. The "msi-log.txt" file will be created in the same directory the MSI is located and will contain all of the relevant error information. Reading through the log will show the specific error code. In most cases, entering the code and error message into Google's search engine (http://www.google.com) will provide enough relevant information to solve the problem.

6. If an Internet search does not provide enough information, contact support@identityfinder.com and be sure to provide detailed steps to allow the support team to reproduce the error, along with the msi-log.txt file attached to your email. If the MSI has been edited beyond the automated addition of the license file, also attach the relevant table exports, detailed in the next section, to your email.

Exporting an Edited MSI Table

Description: Often, an MSI will break because of an errant entry in an edited table. If an MSI stops working, exporting the tables that have been edited along with the log file above provide crucial information that can be used to help identify the problem. The Identity Finder Support Team will have trouble helping you and will likely request this information if you have edited the MSI manually, so exporting these tables and attaching them along with a log file in your initial support email will provide the quickest resolution.

Generating a log file requires the MSI package to be invoked manually using the Windows Installer from the command line:

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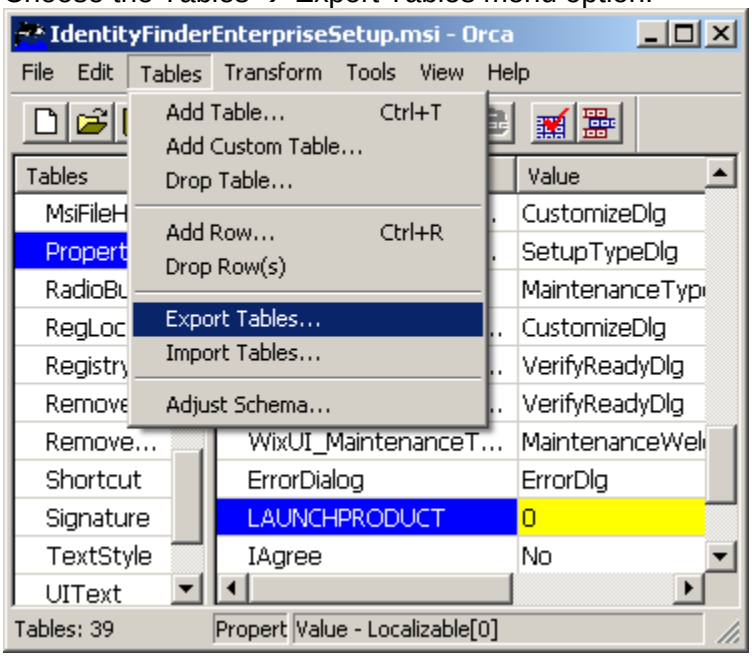
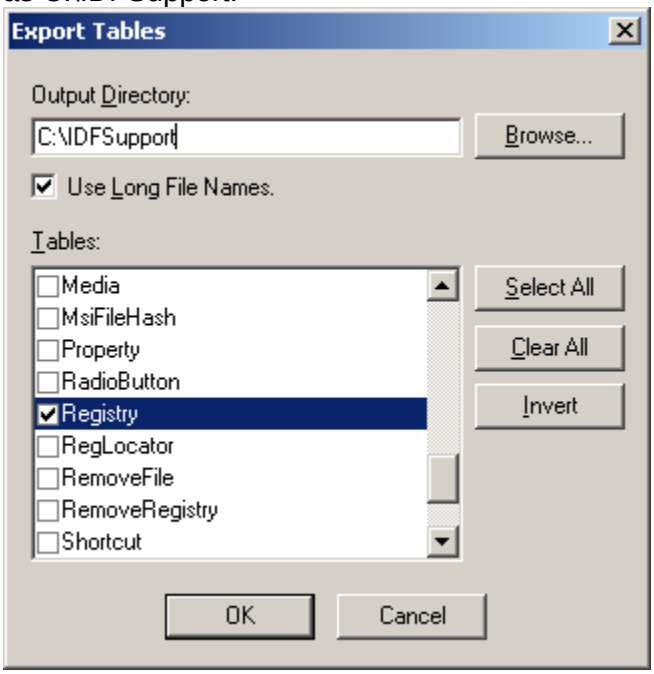
1. Locate the MSI package file. The MSI can be obtained as the output of adding a license file to the installer as described above in Using a Batch Script to Add a License File or Manually Adding a License File, or by extracting the MSI manually as described in Manually Extracting the MSI.

2. Right click on the MSI in Windows Explorer and choose "Edit in Orca". Alternatively, open Orca and go to the File → Open menu and locate the MSI.

3. Choose the Tables → Export Tables menu option:



4. Choose an output directory and check all of the tables that have been manually edited. For example, if only registry settings were added, export the Registry table to a specified directory, such as C:\IDFSupport:



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5. Click OK and the directory (in the example above it is C:\IDFSupport) will contain the relevant .idt files. In the case above where just the Registry Table is exported, the directory will contain a Registry.idt file.

6. Close Orca.

7. Attach all relevant .idt files in your email to support@identityfinder.com and be sure to include the relevant log file as described in the above section Generate a Windows Installer Log File.

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