SEER*Abs v2.24

SEER*Abs Installation Guide

March 2025

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Introduction

The SEER Abstracting Tool (SEER*Abs) is a highly configurable data collection tool for cancer registrars. The software is distributed with sample record layouts and scripts (including a data entry form for NAACCR records).   The NAACCR layout can be used as distributed, however, it is expected that most registries will customize default layouts and scripts.

SEER*Abs is designed to be used as an abstracting tool for a single abstractor. The typical installation is a separate instance per abstractor. Multiple accounts can be created in a single instance, however, two users cannot login to the same instance at the same time. Each instance of SEER*Abs has a local database that is not shared by any other instance or software.

The SEER*Abs Installer must be used to install the initial deployment of SEER*Abs, to update the SEER*Abs software when SEER releases new versions, and to deploy configuration changes made by the registry's IT staff. The different types of installations are described below.
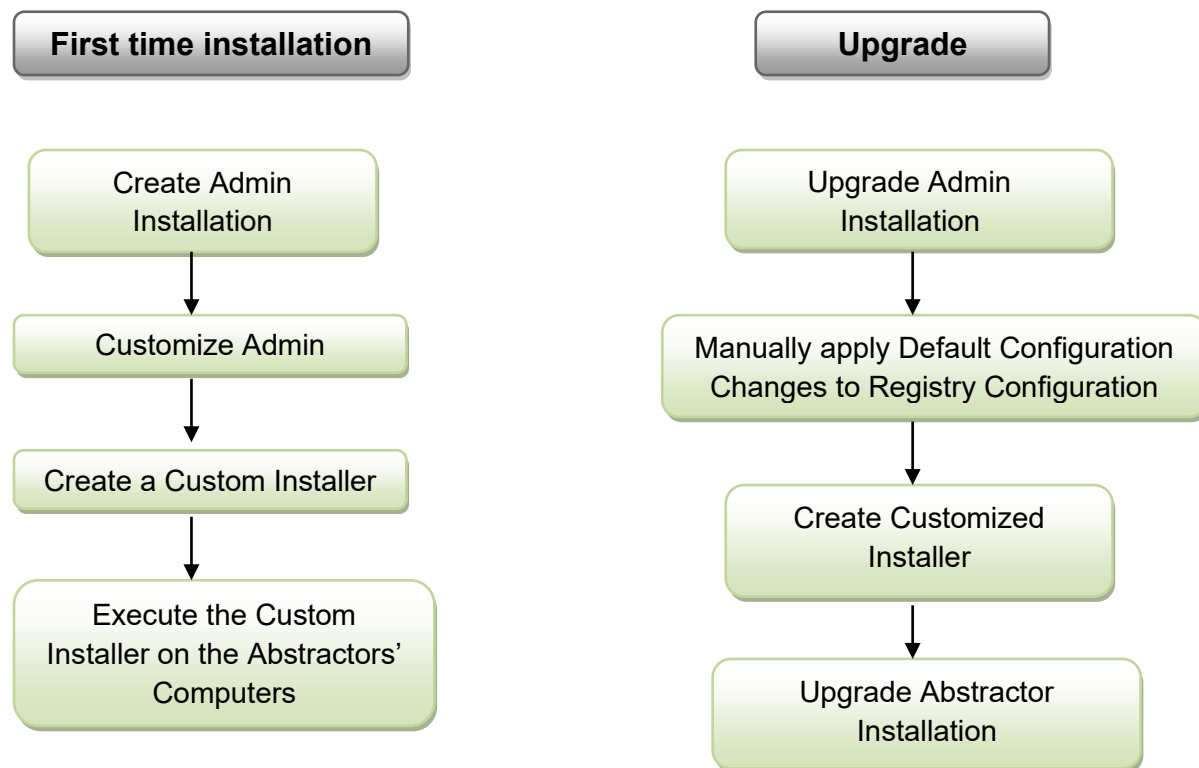
- Admin Installations
    - An instance of SEER*Abs used by registry IT staff for system maintenance. This instance is used for the development of the registry's configuration; it is never used for data collection.
    - To create the initial Admin Installation:
        - Perform a Full Installation from the distribution version. The default configuration settings will be set initially.
        - Configure the layouts and scripts based on registry requirements.
    - To update admin installations when new versions of SEER*Abs are released:
        - Use the SEER*Abs Installer to incorporate changes to the SEER*Abs application.   Updates to the application would include new system features, revisions to SEER edits, modifications to the CSv2 library, and bug fixes.
        - Review corrections and changes made to the default configuration. If a correction was made to a default layout or script, you may need to make the same change in your registry's configuration.
- Abstractor Installations
    - An instance of SEER*Abs used by an abstractor. These instances are created by a custom installation program made from the Admin Installation.

    - If a new version of SEER*Abs is released by the SEER Program, the Admin Installation must be updated before an abstractor installation can be updated.

Note that as of version 2.14, the application is distributed with its own embedded Java Runtime Environment (JRE) and it is not a requirement to have Java installed on the computer anymore.

Installation Workflow

SEER*Abs can be used out-of-the-box to collect NAACCR Abstract data; it can be used with minimal changes such as the addition or deletion of fields; or registry IT staff can implement a heavily customized version.   Changes to the configuration are made in the Admin Installation. Those changes are distributed to the abstracting staff via a custom installation program.

The diagram below shows the workflow for installing SEER*Abs for the first time; and the workflow for distributing upgrade to the SEER*Abs software and/or the registry's configuration.

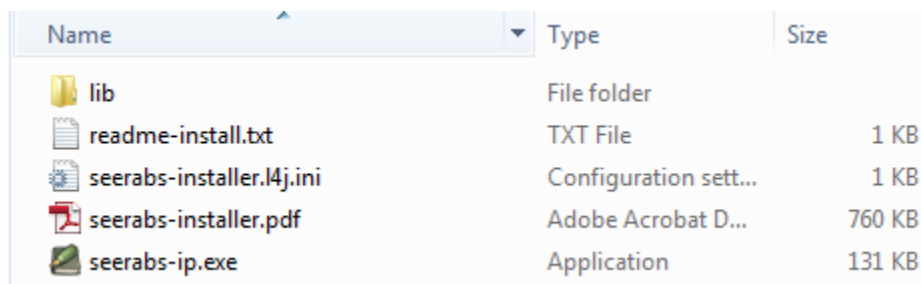| First time installation	Upgrade
Create Admin Installation	Upgrade Admin Installation
Customize Admin	Manually apply Default Configuration Changes to Registry Configuration
Create a Custom Installer	Create Customized Installer
Execute the Custom Installer on the Abstractors' Computers	Upgrade Abstractor Installation

Creating the initial Admin Installation of SEER*Abs

SEER*Abs is shipped with a default configuration that must be updated to fit the needs of the registry. The recommended process is to install SEER*Abs on the administrator's workstation, customize it on that machine, and then use the SEER*Abs installer to deploy the customized version on abstractors' laptops.

The admin installation creates a version of SEER*Abs that includes the installer sub-folder. The installer sub-folder will become the registry's version of the installer.

*To install the admin version of SEER*Abs:*

1. Go to the **SEER website** at http://seer.cancer.gov/seerabs
2. Click on the **Download SEER*Abs** link and follow the instruction online.
   a. Extract the zip file into an empty folder (for example C:\seerabs).
   b. This folder will become your registry's distribution version. You should consider employing version control software to protect changes made by registry staff.
   c. An install-x.x folder will be created (x.x indicates the version). The install-x.x folder will contain a lib folder and the files shown below.

Name	Type	Size
lib	File folder	
readme-install.txt	TXT File	1 KB
seerabs-installer.l4j.ini	Configuration sett...	1 KB
seerabs-installer.pdf	Adobe Acrobat D...	760 KB
seerabs-ip.exe	Application	131 KB

3. Double-click **seerabs-ip.exe** in the install-x-x folder.
4. Select the **Full Installation** option and click **Next**.
5. The installer will auto-detect that this installation does not include a custom configuration or database. Review the options and click **Start**.
6. Once the installation is complete, click **Finish** to close the installer.

The application should start automatically, if it doesn't, double-click the seerabs.exe file in the main SEER*Abs folder (C:\seerabs in the example above). You will be prompted to create an Admin password. Please review the Getting Started section of the System Administration Reference for instructions.

A default configuration and empty database will be created when you run SEER*Abs for the first time. Configure the screen layouts, export scripts, synchronization scripts, and other components of SEER*Abs for your registry.

Once the installation is completed, you can delete the.install-x.x sub-folder. Or you can keep it if you wish; it contains the logs of the installation.

Customizing the Admin SEER*Abs Installation

The default configuration can be used as-is to collect data, but most registries create a custom version of SEER*Abs. The extent of customization varies from registry to registry. Full instructions for customizing the software are provided in the *SEER*Abs: System Administration Reference*. The registry's changes to record layouts and scripts are made in configuration files. In addition, two databases are typically loaded in the Admin Installation so that they may be deployed in the first installation distributed to abstractors.

- The **reference database** is a read-only database containing the pick lists (lookups), physician list, and facility list. It may also contain patient data from the registry's main database. Registry configuration settings determine the amount and type of data that are included in reference data. These data may include consolidated patient data from the registry database, pathology records, or other types of records.

- The **main database** is a read/write database. In the initial installation, it should only include user account information. Records created within SEER*Abs and Abstract Facility Leads (AFL) are also stored in the main database. The initial installation should not include AFLs because the same list of AFLs should not be distributed to more than one abstractor; that could result in two abstractors abstracting the same case. The initial installation should not include abstracts or other types of records created in SEER*Abs (if you create test records in the Admin Installation, be careful not to distribute those records to abstractors).

The folders listed below are deployed in a Full Installation:

- Configuration
- Reference Database
- Main Database

When deploying a Full Installation that includes a database, there will be options to select whether the Reference Database should be used, and whether the Main Database should be used. By default, both will be used.

When the installer is used to Update an existing instance of SEER*Abs, the folders listed below are copied if they exist in the installer:

- Configuration
- Reference Database

The main database is not copied when the installer is used in Update mode. The abstractor's main database contains the Abstract records that they created. It would be dangerous to over-write their main database.

To customize the configuration of the admin installation:

1. Start SEER*Abs.
2. Login using the admin user account. You will be prompted to create the admin password.
3. Select **Show > Configuration** to access the Configuration Manager.
4. Follow the instructions displayed in the configuration pages and provided in the System Administration Reference to do the following, as needed.
   a. Define system properties in the main configuration.
   b. Add and modify layouts for records, users, and other user interface components.
   c. Add and modify scripts to load lookups, reference data, and to perform other tasks.

To create a reference database that will be deployed in the abstractor installations:

1. Start SEER*Abs.
2. Login using the admin user account.
3. Select **Show > Synchronization** to access the Synchronization page.
4. Select the appropriate import option in the **Import Data** section. The main configuration determines the type of options that are available.
5. Select the types of data that you wish to include in the initial installation.
   a. The options may include: Lookups, Physicians, Facilities, AFLs, consolidated data (patient sets) and records from the main registry database.
   b. Do not select AFLs.
6. Complete the import process. This may involve selecting data files, logging into the registry database or selecting a Web Services server, depending on your registry's configuration settings.
7. Select **Show > Search**. Verify that all reference data were loaded correctly.

To create user accounts to deploy in the abstractor installations:

1. Start SEER*Abs.
2. Login using the admin user account.
3. Select **Show > Users**.
4. Click **Add User** and create a new account for each abstractor. Define an initial password for each user. Provide this password to the abstractors. This password will only work one time. They will be prompted to change the password the first time that they login.

In the future, you may create user accounts in the Admin Installation if you are preparing an installation for a new abstractor. User Accounts are only installed when the abstractor uses the Full Installation option.   User Account information is not modified when an abstractor updates their instance of SEER*Abs.

Creating a Custom Installer

Once the admin installation has been fully customized, it can be used to generate an installer to distribute the registry's version of SEER*Abs to the abstractors.

To create a custom installer:

1. Select **File > Create Installer for Distribution (Admin Only).**
2. Select the appropriate option for **Configuration**:
   a. If you are creating an installer to deploy your registry's version of SEER*Abs, check the **Configuration** option. Any changes that you made to layouts and scripts will be included.
   b. If you want to create an installer with the original default configuration, uncheck this option.
3. Select the appropriate option for **Database**.
   a. Check Database if you wish to deploy lookups, facility lists, physician lists, and reference data via the installer. The main and reference databases will be

deployed by the installer when a Full Installation is performed. Only the reference database will be deployed when the installer is used in Update mode.

    b.   Uncheck the Database option if you do not want to deploy the main or reference databases via the installer. This option may be used if you are including patient data and cannot securely transfer the installer to the abstracting staff. The data can be loaded into the abstractor's version of the software using the Synchronization page.

4.   Select the **Lookups** checkbox to include the lookups in the installer (this option is not useful if the Database option is selected since the Reference Database already contains the lookups.

5.   You can also modify the default installer filename; note that a suffix (usually the two or three letters Registry abbreviation) can be defined in the main configuration file (**registry.abbreviation**), if that suffix is not blank, it will be automatically added to the filename. This is useful to distinguish between a default installer provided by IMS, which will never have a suffix, and an installer that has been customized by the Registry.

6.   Click **OK.**

7.   The installer zip file will be created in the output folder. Select **Show > Output Folder** to open the output folder.

Once the custom installer has been created, the next step is to use it to create or update the abstractor installations on their laptops.

Creating an Abstractor's Initial Installation

The "abstractor" installation is an instance of the application that is used only for abstracting. It is usually created on laptops, but this is not a requirement. It can be installed in a network location or it can be installed locally. If installed in a network location, it can only be accessed by one abstractor at a time.   It is recommended that a separate instance of SEER*Abs is created for each abstractor and that a separate user account is created for each abstractor. Preferences are set by installation, so every user using the same instance will have the same preferences set.

To create an abstractor installation:

1.   Extract the custom installer zip file in an empty folder (C:\seerabs for example).
2.   An install sub-folder will be created.   It will be called install-x.x where x.x indicates the version of SEER*Abs.
3.   Run the **seerabs-ip.exe** program in the install sub-folder.
4.   Use the **Full Installation** option.
5.   Click **Next**.
6.   The installer will auto-detect whether a custom configuration and/or database is included. If they are available, the options will be checked by default. Click **Next**.
7.   Review the target folder and options.   Click **Start** to install the software.
8.   Click **Finish** to close the installer.

9. The application should start automatically, if it doesn't, double-click the **seerabs.exe** file in the main SEER*Abs folder (C:\seerabs in this example). Login to verify that the application starts properly and that the correct version was installed (select **Help > About** to view the version information).
10. Delete the "install-x.x" folder.

Updating SEER*Abs when a New Version is Released

If a new version of SEER*Abs is released, the Admin Installation must be updated. A new custom installer must be created and used to deploy the new version to abstractors.

To update the Admin Installation, you will use the SEER*Abs installer distributed with the new version of the software.

The following processes occur when the installer is executed in "Update" mode:

1. Perform Backup (if the installer option is selected)
2. Override library files (jar and DLL files), PDF manuals, and other application files.
3. Run the update scripts. These scripts implement required changes to the database and/or configuration files. However, they do not alter the registry's configuration or data.
4. Update the SEER edits, if a new version of the SEER edits is available.
5. Overwrite the Configuration folder (if the installer option is selected). Not recommended if your registry uses a customized version of SEER*Abs.
6. Overwrite the reference database folder (if the installer option is selected).
7. Update the lookups (if the lookups option is selected).
8. Create a mirror configuration folder (if the installer option is selected).

The update scripts in step 3 are a set of processes that must be performed to update the application from one version to the next. There is a set associated with each version of SEER*Abs. The installer determines which sets need to be executed based on the version of the current installation and the target version.

The first step to deploy a new version of SEER*Abs is to update the admin installation.

Updating the Admin Installation

*To update the Admin Installation of SEER*Abs:*

1. Go to the **SEER website** at http://seer.cancer.gov/seerabs
2. Click on the **Download SEER*Abs** link and follow the instruction online.
3. Unzip the file into the main folder containing the admin instance of SEER*Abs. This will create an install-x.x folder (x.x indicating the latest version). If the folder already contains an install-x.x folder for the same version, it must be entirely replaced; the safest way to do this is to delete the entire folder before unzipping the new.
4. Double-click **seerabs-ip.exe** in the install folder for the most recent version.

5. Optionally click **View Changes** and review the changes for the current version.
6. Select **Update Existing Copy of SEER*Abs**. Click **Next**.
7. Set the General Options.
    a. Create a backup of the configuration.
    b. Create a backup of the main database.
    c. It is not necessary to back up the reference database. This database contains the physician lists, facility list, and other data that are available at the registry.
8. On the Advanced Options tab, check **Create a Mirror Configuration**.   This creates a folder containing the new default configuration released with SEER*Abs.
9. Click **Next**.
10. Review the options. To make a change, click **Back**. Otherwise, click **Start**.
11. Click **Finish** when the update is complete.
12. If no manual merging step is required, the application will start automatically.

The Admin Installation has now been updated to the latest version of the software, but the configuration has not been updated. In fact if required changes were made to the default configuration, starting the application now would result in an error in the Login dialog. That's because updating SEER*Abs requires a manual step.

The following example illustrates why it is necessary to manually update configuration files:

Assume that the default abstract layout contains a Groovy script for calculating the Age at DX from Date of Birth and Date of Diagnosis. Registry staff modify the script to show a message if the age is < 20.   Later, a calculation error is found in the default version of the script and the default version is corrected.

The installer cannot auto-update the registry's version of the Groovy script. It cannot over-write the script because the registry would lose the extra functionality that was added. The registry IT must manually review the changes made to the default version of the script and implement the same changes in the registry's script.   This is referred to as "merging" the changes into the registry configuration. An alternate approach would be to take the default version and re-implement the registry functionality, but that is typically the more time consuming approach.

Merging the Default and the Registry Configurations

Most of the changes to the default configuration are optional, and when they are required, the installer will attempt to apply them automatically. But there are some rare changes that are required and cannot be applied automatically.

Every change made to the default configuration has an entry on the top of the configuration file with the version that the change was made. This serves two purposes:

1. It can be used to know what changed from one version to another one: once a configuration file is modified to include registry-specific changes, it will always appear

different than the default version. When comparing the two files, it can become difficult to know which changes are the updates in the default configuration and which ones are the registry-specific ones. But if the top of the file indicates there were no changes to the default file for the version that was just updated, then all the changes are registry-specific changes, and no merging is necessary.

2. The histories are programmatically parsed and made available on the SEER website as well as within the application, under the Version History menu item. They can also be reviewed by clicking **View Changes** in the installer.

To update/merge the changes from the default configuration into the registry configuration:

1. Verify that merging is required:
   a. Go to the **SEER website** at http://seer.cancer.gov/seerabs and click on **Default Configuration Version History** link. Alternatively, click **View Changes** in the installer and select the tab with the Configuration changes.
   b. Verify that the new version includes revisions to the default configuration. If not, manual merging is not required and you may delete the mirror configuration if it was created during the update step. If manual merging is required, proceed to step 2.
2. The mirror configuration created during the update step should be used. This folder is named conf-x.x where x.x is the latest version. The folder will contain all files from the default configuration.
3. Compare and merge each file in the mirror folder with its counterpart in the conf folder if they are different. The recommended steps are listed below. Appendix A includes other Tips on Merging Configuration Files.
   a. Use a file comparison tool to compare the files.
   b. The beginning of the mirror file will include a change log. Review this list carefully and determine whether these changes need to be made in your configuration file.
   c. Move through the two files to review the changes made in the new default configuration.
   d. Manually edit your configuration file to make necessary changes.
   e. Delete the mirror version of the file or hide it from the comparison tool so that you will know which files you have processed.
   f. Repeat these steps for each file in the mirror folder.
4. At this point, all file should have been processed and the mirror folder can be deleted. The conf folder now contains an updated version of the registry's configuration.
5. Run SEER*Abs to verify that it successfully starts and check a few of the changes that were merged.

Changes to the default configuration are usually done in major releases, but not minor releases. It is recommended that you manually merge all changes, including the optional changes. These changes may include bug fixes and new features that may be useful for your registry later, even if you are not using them now.

Once the manual merging step is done, the next step is to create a customized installer to update the abstractor installations.
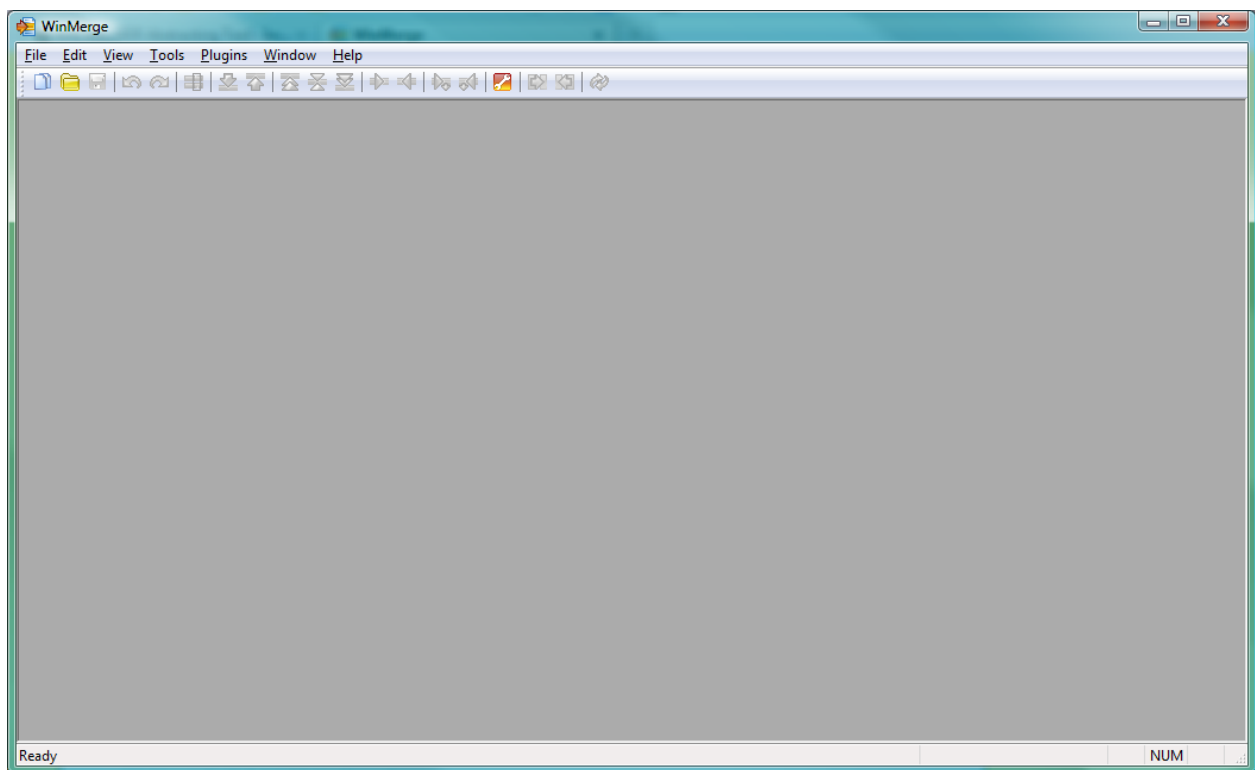
Updating an Abstractor's Installation

To update the abstractor Installations:

1. Extract the custom installer zip file into the abstractor's SEER*Abs folder (C:\seerabs for example).
2. An install sub-folder will be created.   It will be called install-x.x where x.x indicates the version of SEER*Abs.   If the folder already contains an install-x.x folder for the same version, it must be entirely replaced. It is recommended that you delete the old installer folder before unzipping the new.
3. Double-click the **seerabs-ip.exe** file in the installer folder.
4. Select **Update Existing Copy of SEER*Abs**.
5. Click **Next**.
6. Set the General Options.
   a. By default, the configuration and main database will be backed up. It is strongly recommended that you backup the main database because it contains records created by the abstractor.
   b. You must select **Update Configuration** if this installer includes changes to the registry's layouts or scripts.
   c. You must select **Update Reference Database** if this installer includes new lookups, facility lists, physician lists, or reference data.
   d. You must select **Update Lookups** if this installer includes updated lookups without a full Reference Database.
7. Do not apply any changes on the Advanced Options tab. These options are only used when updating the Admin Installation.
8. Click **Next**.
9. Review the options. If you need to make a change, click the **Back** button.
10. Click **Start**.
11. Click **Finish** when the update is complete.
12. The application should start automatically, if it doesn't, double-click the **seerabs.exe** file in the main SEER*Abs folder (C:\seerabs in the example above). Login to verify that the application starts properly and that the correct version was installed (select **Help > About** to view the version information).
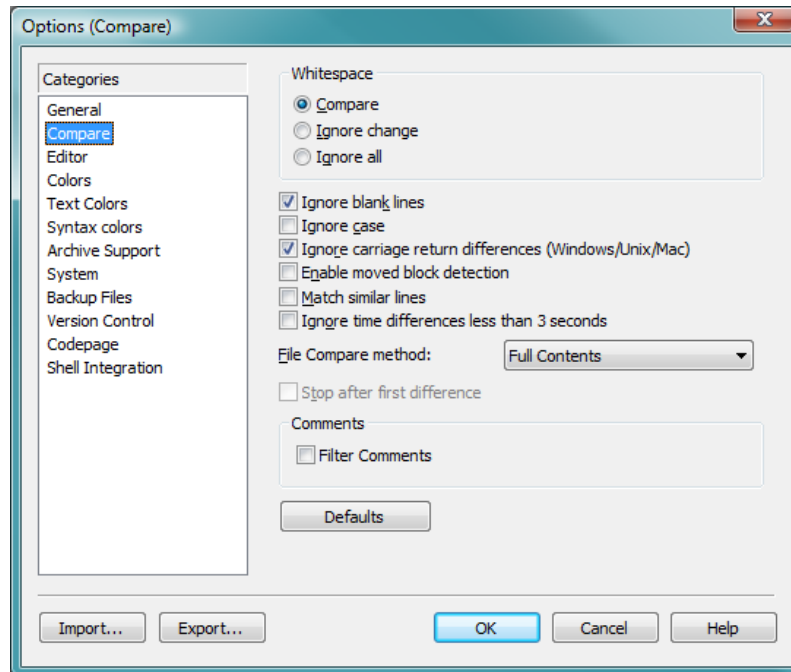13. Delete the "install-x.x" folder.

Appendix A – Tips on Merging Configuration Files

There are many tools available to compare to text files. A very good one is "Beyond Compare" (http://www.scootersoftware.com/) but it requires a license. IMS evaluated another tool called "WinMerge" (http://winmerge.org/) that is free. The rest of this section explains how to use WinMerge, but please keep in mind that any tool can be use to merge the configuration files and that using WinMerge does not come with any advantages compare to the other tools available (except that it is free of course).
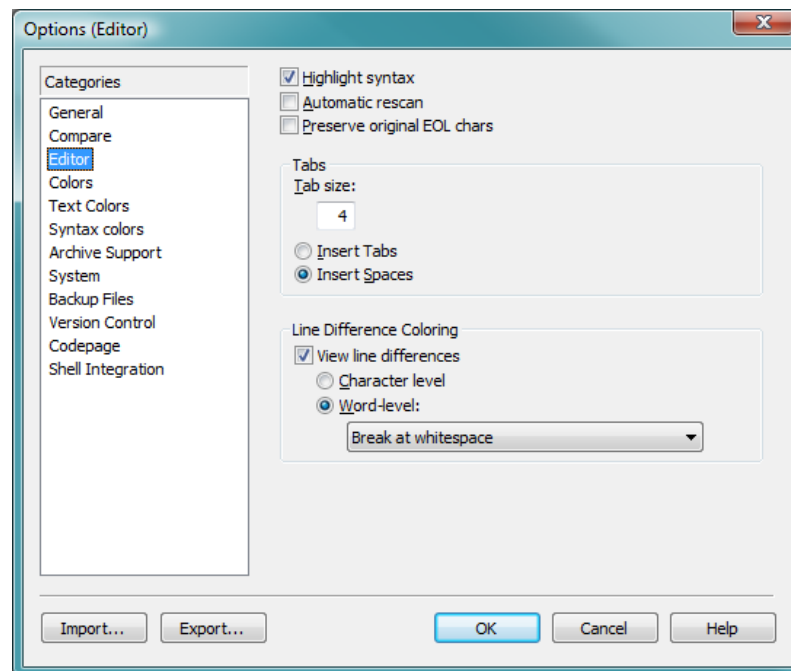
First download and install the application from http://winmerge.org/; start the application. It will look like this:

 There are a few default options that are worth modifying, select "Options" from the "Edit" menu. In the "Compare" tab, select "Ignore blank lines" and "Ignore carriage returns differences" (those differences are not useful and can be very annoying).
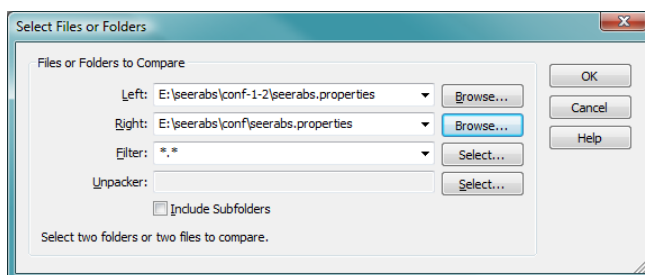
Options (Compare)

Categories
- General
- Compare
- Editor
- Colors
- Text Colors
- Syntax colors
- Archive Support
- System
- Backup Files
- Version Control
- Codepage
- Shell Integration

Whitespace
- ● Compare
- ○ Ignore change
- ○ Ignore all

- ☑ Ignore blank lines
- ☐ Ignore case
- ☑ Ignore carriage return differences (Windows/Unix/Mac)
- ☐ Enable moved block detection
- ☐ Match similar lines
- ☐ Ignore time differences less than 3 seconds

File Compare method: Full Contents

- ☐ Stop after first difference

Comments
- ☐ Filter Comments

Defaults

Import...   Export...   OK   Cancel   Help

In the "Editor" tab, select the "Insert Spaces" option (it is always better to deal with spaces than tabs).

Options (Editor)

Categories
- General
- Compare
- Editor
- Colors
- Text Colors
- Syntax colors
- Archive Support
- System
- Backup Files
- Version Control
- Codepage
- Shell Integration

- ☑ Highlight syntax
- ☐ Automatic rescan
- ☐ Preserve original EOL chars

Tabs
Tab size: 4
- ○ Insert Tabs
- ● Insert Spaces

Line Difference Coloring
- ☑ View line differences
  - ○ Character level
  - ● Word-level:
    Break at whitespace

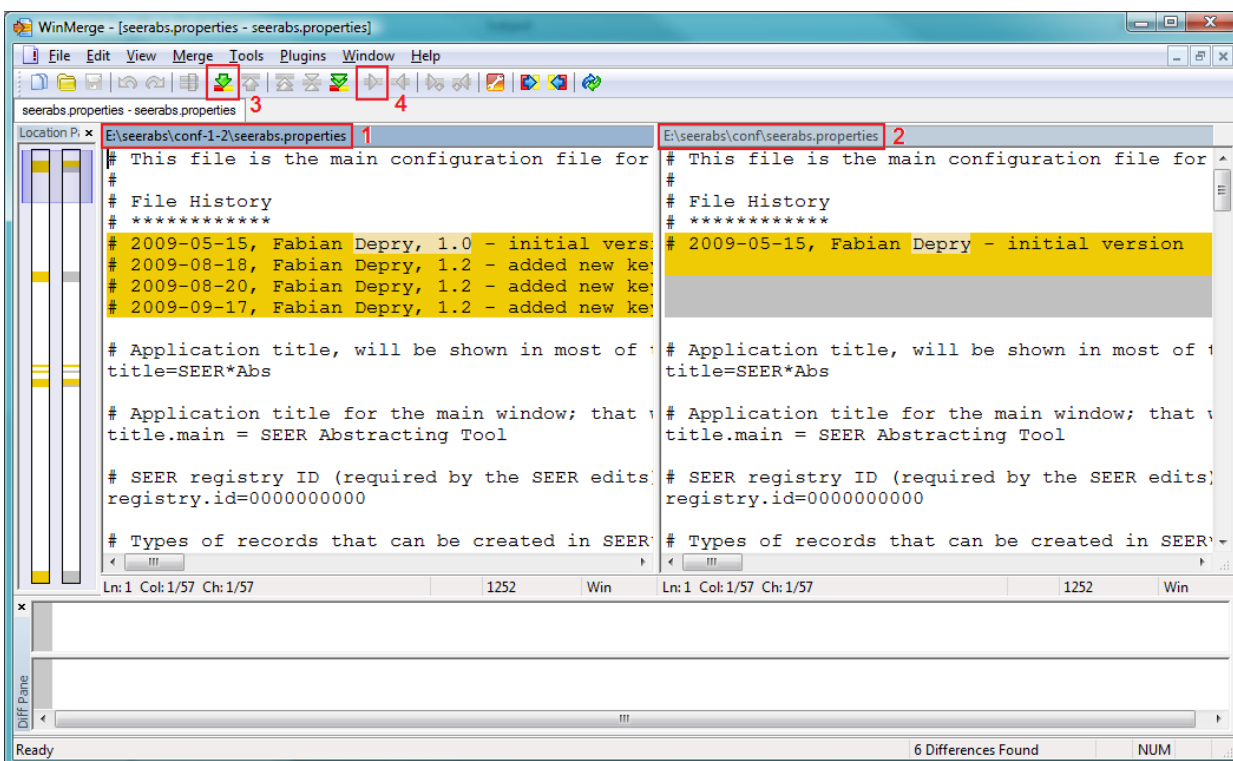Import...   Export...   OK   Cancel   Help

Click OK. Comparing the files from the mirror folder to the original configuration folder can be tricky and requires a very strict process. For example, when comparing two files, one will be displayed to the right and one to the left. It is very important to always keep the same side for the same folder.

In this example, we will compare the mirror folder "E:\seerabs\conf-1-2\" to the original folder "E:\seerabs\conf\". We will always keep the mirror files on the left and the original file on the right; that means the changes need to be applied to the file on the right.

Select the "Open files" option from the File menu item, select the mirror file for the Left box and the original file for the Right box; when using the "Browse" button to select a file, always pay attention to the current folder (do I want the mirror folder or do I want the original configuration folder); WinMerge will open the last folder that was used to open a file, so it is very easy to invert those directories, which would invert the Left and the Right file.

Each file in the mirror folder needs to be merged. There is no order in which the files need to merged, but it is recommended to start with the "seerabs.properties" file since it is the most global configuration file there is. After that it really does not matter which file is selected; it makes sense to handle a single record type at once (so for example, one would merge the abstract layout file, then the abstract extract script). The lookups file is also a very generic file and is a good candidate to be merged among the first files. Once the two files are opened, the screen will look like this:

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Follow these steps to merge the files:

1. Make sure the file on the left is the correct one (correct name and from the mirror configuration folder); red box #1 in the screenshot.
2. Make sure the file on the right is the correct one (correct name and from the original configuration folder); red box #2 in the screenshot.
3. Use the down arrow (red box #3) to go the next difference. If you want to accept all the changes, use the copy-right arrow (red box #4) to move the differences from the left to the right. If the change cannot be entirely accepted (for example it could conflict with changes that you did in your original configuration), cut and paste manually the changes from the left to the right. It is also possible to have a change that should not be accepted (for example a main configuration variable that has been customized).
4. Repeat steps 3 and 4 for every change. Note that some file might have so many changes, that it might be more convenient to start from the mirror file and re-create any registry-specific changed that are made to the original file. But when doing, keep in mind that at the end, the file that needs to be updated is the original file.
5. Once you are done, save the file and close it.
6. In a Window Explorer window, delete the file you just merged from the mirror configuration. That way when selecting your next file from that mirror configuration, you will be sure not to select that one again. Another way of doing this is to keep a list of files that need to be modified and cross their names as there are merged. Either way, the end result is to keep track of what has been merged and what still need to be merged.
7. Repeat these steps for every file that needs to be merged.