



Smartware Studio™

User's Guide

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1. Introduction / About This Guide

Smartware Studio is a sophisticated environment for use in all aspects of project development and engineering.

About This Guide

This guide is intended for all users of Smartware Studio. It describes most of the basics for using it to store and retrieve all types of information for Customer Sites and Job Projects, and how to work with the devices on the Network Tree.

Please refer to the table of contents for a complete list of chapters and topics.

Installing and Administering Smartware Studio

For complete details on how to install, setup and configure Smartware Studio, refer to the separate *Smartware Studio Setup and Administration Guide*.

The Estimating Module

For complete details on how to use the Smartware Studio Estimating Module, refer to the separate *Smartware Studio Estimating Module User's Guide*.

To Learn More about Smartware Studio

Many of the topics covered in this Guide are better illustrated through visual examples. To that end, our video training sessions are available for viewing and downloading from our web site. We encourage you to use these videos as part of your training.

To Contact Us

Our technical support team is available weekdays from 8 am to 5 pm eastern time at (716) 213-2222. You may also visit our web site at <http://www.smartwaretech.com> or e-mail us at techsupport@smartwaretech.com.

2. Smartware Studio Projects

All Smartware Studio Projects are similar in that they allow you to store all types of files and information in tree-based structures. Where they usually differ is in the type of information that is normally stored in the Project and some of the specific features that are available.

Types of Projects

There are four types of Projects:

- Customer Sites
- Jobs
- Estimates
- Libraries

A *Customer Site Project* is designed to represent an entire Client Facility, such as an entire school district, manufacturing plant or hospital system. A *Job Project* is intended to represent an accounting-level job or project.

- If the devices from multiple buildings are connected or integrated, they should be part of the same Customer Site project so that a single Network Tree can be used.
- If you have multiple jobs related to a Customer, you can create shortcuts to the Job projects within the Customer Site Project.

An Estimate Project is used with the *Smartware Studio Estimating Module*. Refer to the *Smartware Studio Estimating Module User's Guide* for more detail.

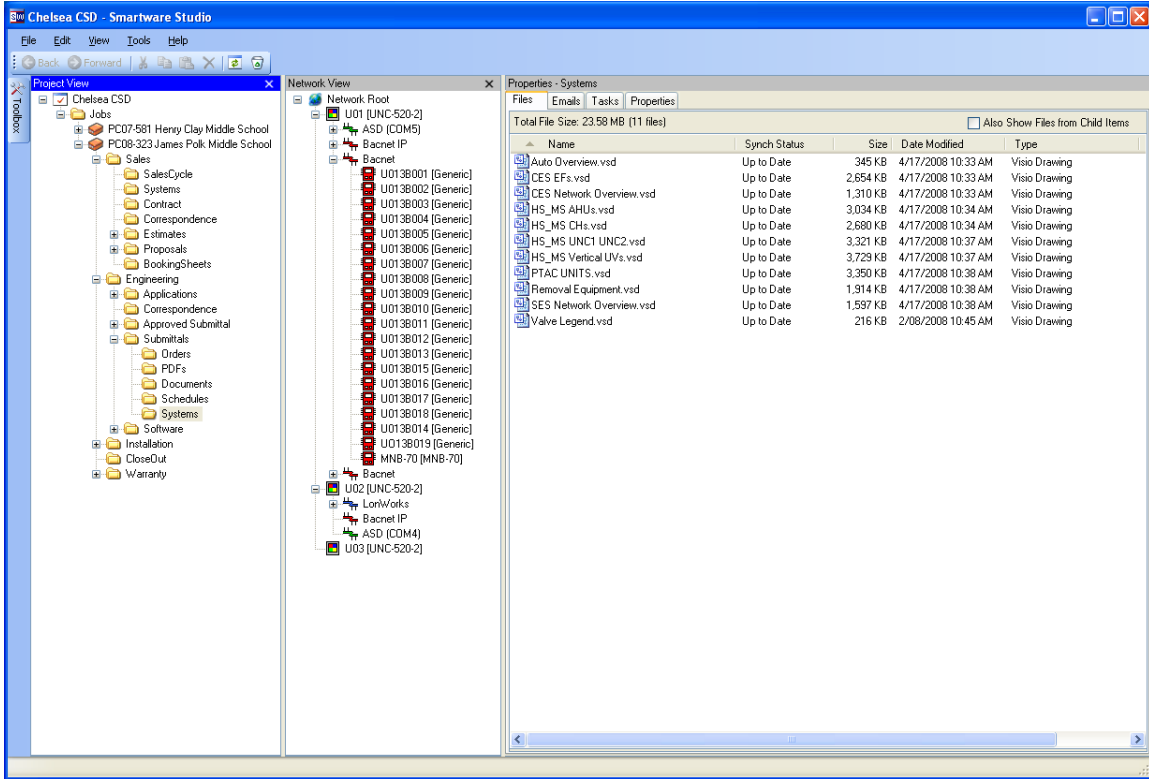
A *Library Project* is intended to be a repository for portions of project trees that you want to share and reuse.

What is Stored in a Project?

A Smartware Studio Project consists of two *tree-like* sets of information:

- *The Project View*, which for Customer Sites and Job is essentially the same as the folders and sub-folders in Windows. In an Estimate, the Project View contains the Estimate's Areas and Systems.
- *The Network View*, which allows you to model the physical layout of the devices in the facility or project.

As you select any item in either tree, a set of tab pages is shown on the right side of the application window:



For any item in either tree, you can store:

- Any type of *files*, which can be shared between users and automatically versioned.
- *E-mails* copied from Microsoft Outlook or forwarded from any e-mail program
- *Tasks* and *Notes*
- Additional *properties* specific to the item (e.g., the address of a device)

Not all the tabs may be visible at all times. To explicitly show a tab, select the item from the VIEW menu.

The Project View

The Project View is intended to store documents of all types.

- There are two main types of folders: *Folders* and *Job Folders*. They are essentially the same, though the Job Folder contains additional properties (e.g., *Job Number*) that will help Smartware Studio located specific jobs across multiple projects.

- There is a default folder in the Project View tree called *Jobs*, designed to contain separate Job Folders for each accounting-level job associated with the client facility.
- Each Job Folder can contain any number of sub-folders. A good practice is to have a standard folder structure to use for each job.
- You can import an entire folder structure with all its files from Windows. Right-click on a node and select TOOLS→IMPORT FOLDERS.
- You can export a folder structure with all its files to Windows. Right-click on a node and select TOOLS→EXPORT FOLDERS.

Refer to the later chapters *Working with Folders* and *Working with Files* for more details on these and other tasks.

Network View

The Network View is intended to model a complete facility and its network and devices.

- You can store device-specific information, such as addresses and configuration information with each device.
- You can store software application and backup files directly with the corresponding device nodes.
- The tree can be built by hand from stencils or imported from other devices, such as a Niagara UNC or a Network 8000 GCM.
- Smartware Studio contains advanced tools for working with WorkPlace Tech and generating Automation Overview diagrams.
- There are many customizable reports that can be run with detailed device information.

Refer to later chapters for more details on these and other tasks.

Local and Server Projects

All projects start as a local project, stored only on the workstation on which they were created.

Local projects can then be moved to the server so that all users can open and view them, and access and add files, e-mails and tasks.

Once on the server, Smartware Studio will automatically enable you to keep multiple versions of files, allow users to share and synchronize their files and data, and enable the Password Manager

Creating a New Local Project

To create a new Local Project:

- If the OPEN PROJECT dialog is not displayed, select the FILE→NEW PROJECT menu command.
- On the OPEN PROJECT dialog, click the NEW PROJECT button under the LOCAL PROJECTS list. You will be prompted to specify the *Project Type* and other information.

Moving a Local Project to the Server

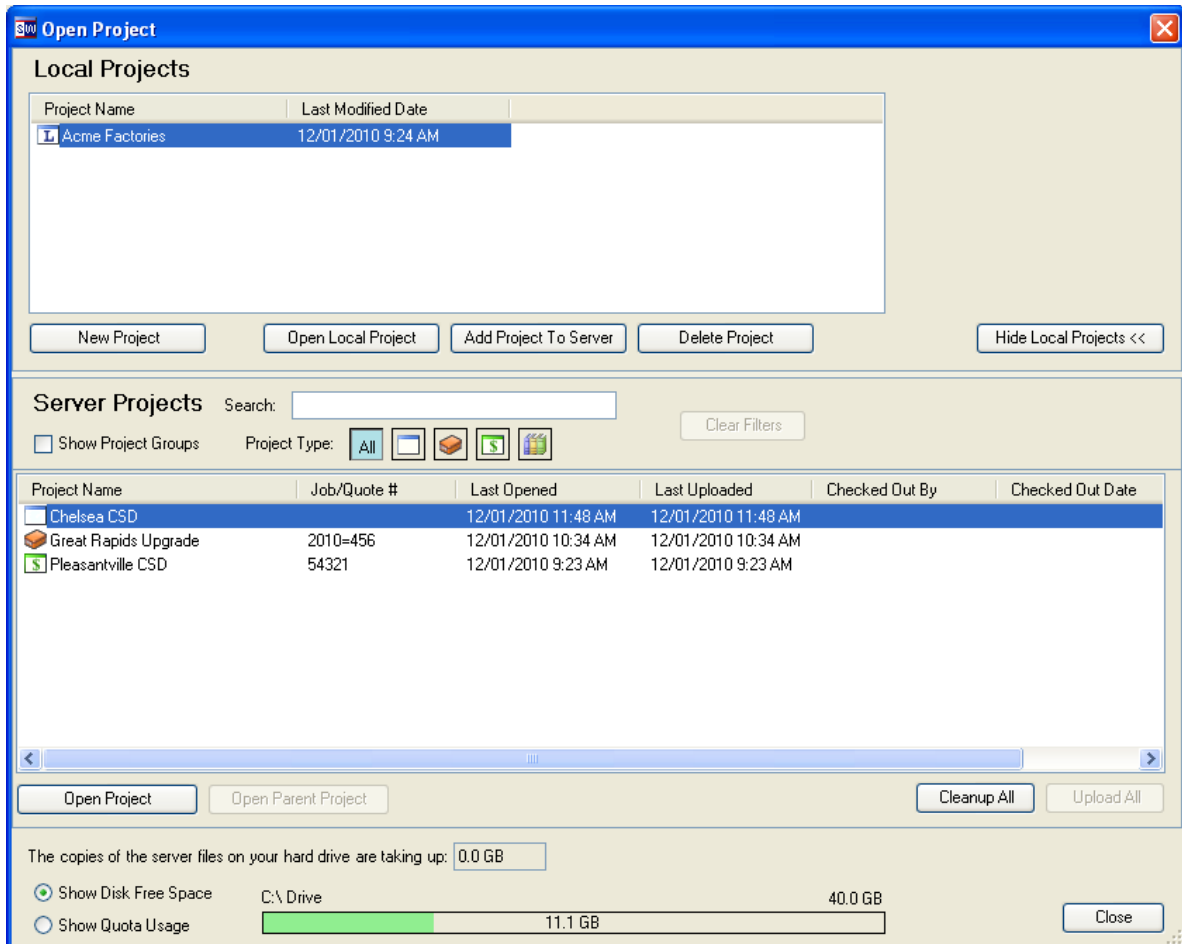
To move a local project to the server:

- From the OPEN PROJECT dialog, select the Local Project from the LOCAL PROJECTS list and click the ADD PROJECT TO SERVER button.
- Or, if the Project is open, select the FILE→ADD PROJECT TO SERVER menu command.

Working with Server Projects

There are a few options you should be aware of when opening and closing projects from the Server.

When Smartware Studio first opens, you will usually be presented with the OPEN PROJECT dialog:



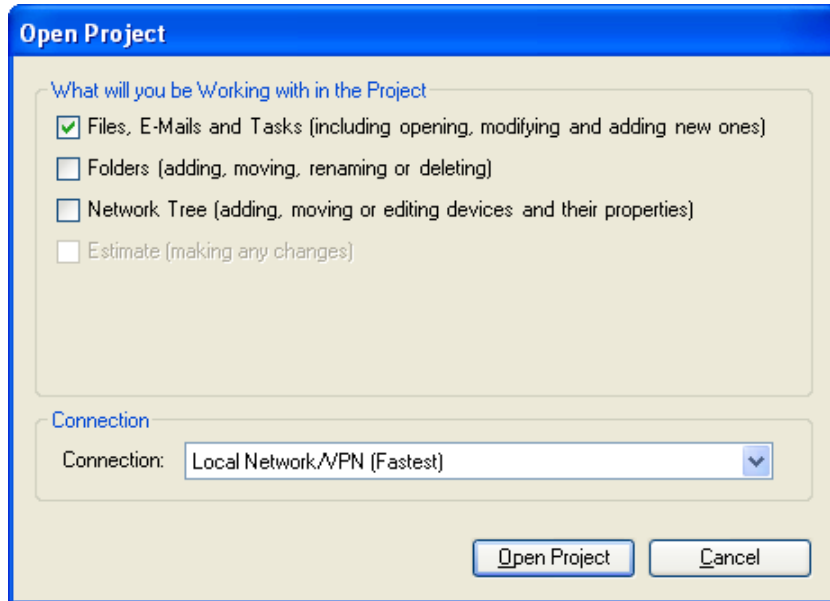
Opening a Server Project

To open a project from the server:

- On the OPEN PROJECT dialog, select the project from the Server Projects list and click the OPEN PROJECT button; or
- You can also double-click the project name in the Server Projects list.
- Type characters into the FILTER box to filter the list of Server projects to just those that contain the characters or keyword.

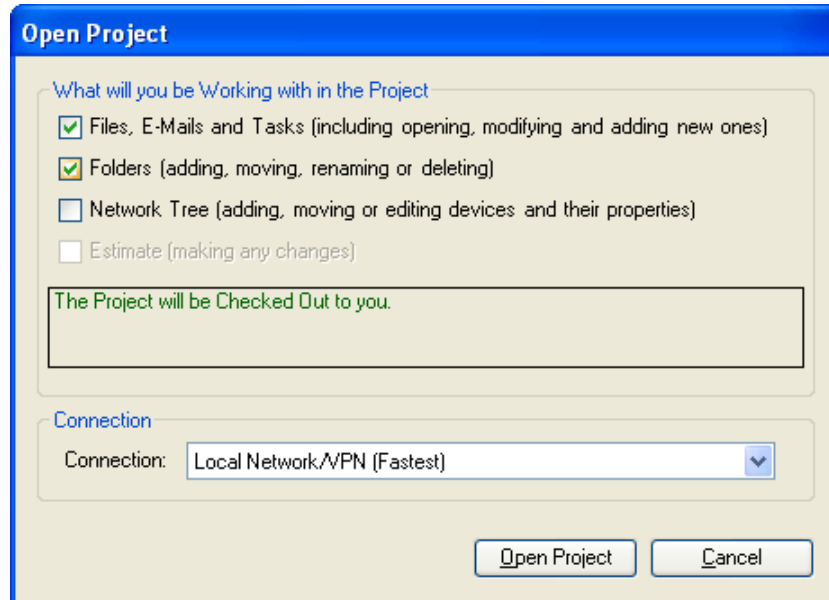
- Select one of the *Project Type* icon buttons to filter the list of Server projects to just those of that type.
- Click any of the column headings to sort the list by that column. For example, sorting by the *Last Opened* date will show you your most recently used projects.

When you open a Server project, you will be asked the following:



Checking Out a Project

If you want to create or edit folders in the Project View or make changes to the Network View tree, then check one of the boxes. When you do, you will be told that the project is being *Checked Out* to you.



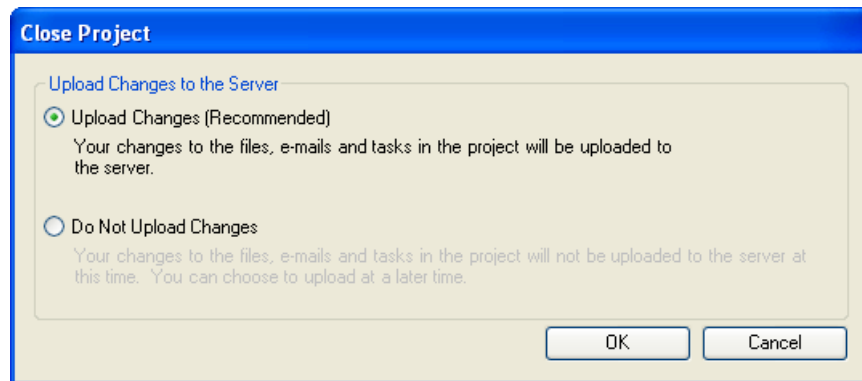
The project can only be checked out to one person at a time. This prevents two people from making changes to the tree structures at the same time, and allows someone to make these types of changes to a server project while not connected to the network.

- Nobody else can check out a project while it is checked out to you.
- If a project is checked out, the user name, computer name and date checked out will be displayed in the Open Project dialog.
- You will be prompted to check in the file (by default) when you close it.

Note: *If you are only working with the files or e-mails in a project – including adding or editing them – then you **do not** need to check out the project.*

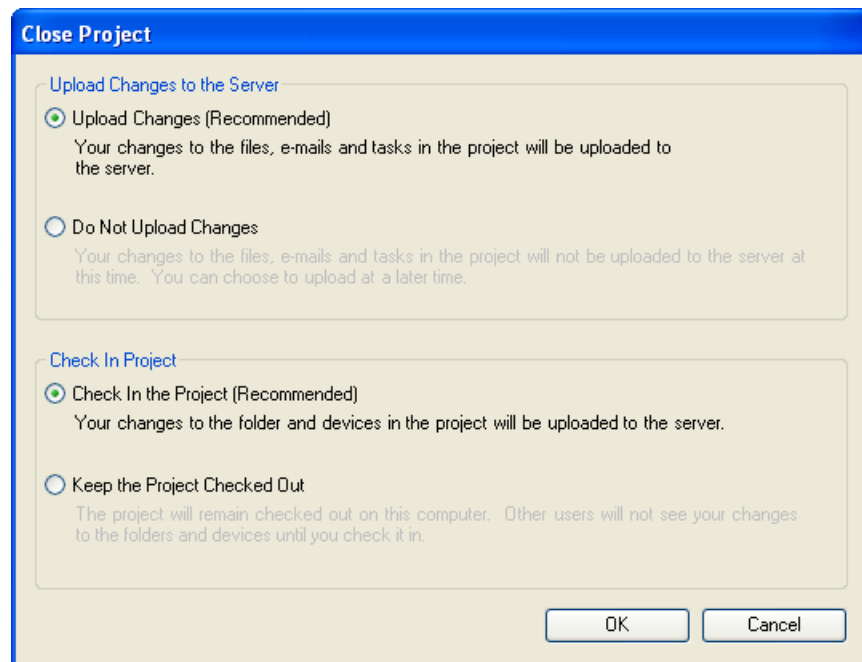
Closing a Project

When you close a Server Project, you will be prompted to upload your changes:



- Unless you have poor or slow connection, it is recommended that you upload your changes whenever you close your project.

If you had the project checked out, you will also be prompted to check it back in:



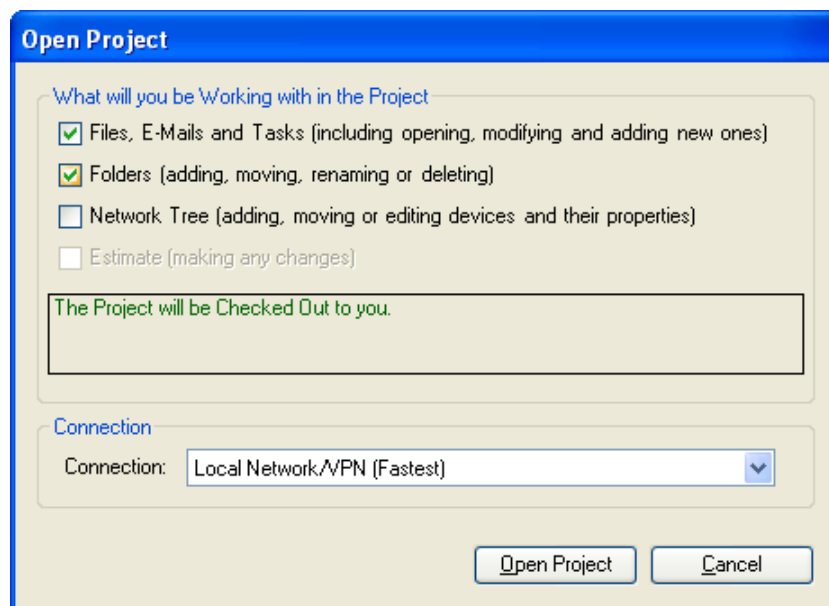
- If you keep the project checked out, you can continue to edit it the next time you open it, even if you are not connected to the server at that time.

3. Working with Folders

The Project View is the main place to store accounting and other business-related documents (as distinguished from software and backup files associated with the network devices).

Checking Out a Project

For Server Project, in order to make any changes to the Project View tree, such as adding, moving or renaming folders, you will need to *Check Out* the project when you open it:



You can also check out a project once it is open by selecting the FILE→CHECK OUT PROJECT menu command.

Working with the Project View Folders

The Project View is designed to look and feel as much like Windows Explorer as possible, so many of the actions you need are intuitive.

Selecting Folders

- To select a folder, simply click on it. The Properties tabs (such as Files and Emails) will be updated immediately with the files and data for that folder.
- To expand or contract a folder to view or hide its sub-folders, click on the plus or minus sign to the left of its name.

Creating Folders

To create a new folder:

- Right-click on the folder in which you want to add a new folder and select ADD from the context menu. You will be offered a choice of different types of folders (e.g., Job Folder) that can be added.
- Open the Toolbox, open the GENERAL stencil, and drag one of the folder types onto another folder in the tree.

Moving and Reordering Folders

You can move the folders around in a number of ways:

- To move a folder from one parent folder to another, simply click on it and drag it into the new parent folder.
- To cut and paste a folder from one parent folder to another, right click on the folders and select CUT and PASTE as you would in Windows.
- To reorder a folder within a set of sub-folders, click on it and slowly drag it until a thin line appears between the two folders in which you want to insert it.
- To reorder the folders automatically based on their names, right-click on the parent folder and select REORDER from the context menu.
 - You can reorder BY NAME (purely alphabetical) or BY NAME AND NUMBER, which sorts names such as *Folder2* and *Folder10* in proper numerical order.

Copying and Duplicating Folders

You can Copy and Paste folders as you would in Windows:

- To create a new copy of a folder in the same parent folder, right-click on the folder and select DUPLICATE. You will be prompted with any options in the same way as if you had selected COPY then PASTE.
- To create two or more copies of a folder, right-click on the folder and select DUPLICATE X. To rename the duplicated folders more easily, right-click on the parent folder and select PROPERTY SHEET AND REPORTS.

Renaming Folders

To rename a folder:

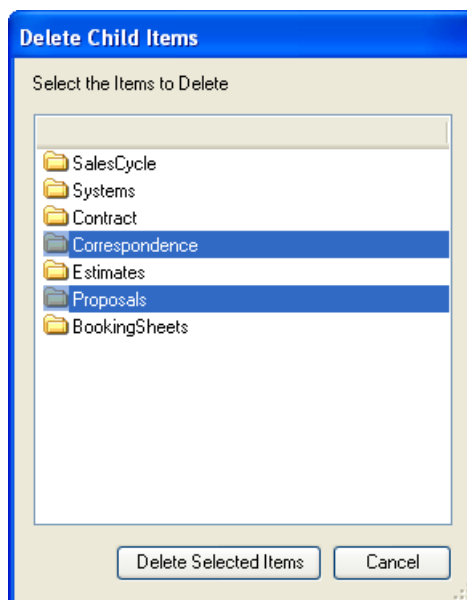
- Right-click on it and select **RENAME** from the context menu.
- Or, select the folder and hit the **F2** key.
- To rename multiple folders more easily, right-click on the parent folder and select **PROPERTY SHEET AND REPORTS**.

Deleting Folders

When you delete a folder, you will also delete its sub-folders and all the files, e-mails and tasks associated with it.

- To delete a folder, right-click on the folder and select **DELETE** from the context menu.
- You can also select a folder and press the **DELETE** key.

To quickly delete multiple folders, right-click on the parent folder and select **DELETE CHILD ITEMS** from the context menu. This will present the folders in a multi-selectable list box:



- You can select multiple items (**CTRL+CLICK** to select individual folders; **SHIFT+CLICK** to select a range of folders) and then click **DELETE SELECTED ITEMS** to delete them.

Deleted folders and the files contained in them can be recovered for some time by clicking the VIEW→RECYCLED ITEMS BIN menu command or clicking on the RECYCLED ITEMS BIN icon in the toolbar.

Importing Folders and Files from Windows

Very often you will want to bring in files and folders that already exist on a file server. Smartware Studio can import all the data with one command.

To import an entire folder structure and its files from Windows:

- Right-click on the parent folder where you want the new folder to be created and select TOOLS→IMPORT FOLDERS from the context menu.
- Browse to the folder you want to import and click OK.

All the data will be brought into the project. Depending on the amount of files, this could take a few minutes.

- If you import a folder using the pre-defined *Jobs* folder as the parent folder, the newly created folder will be converted to a Job Folder automatically.

Exporting Folders and Files to Windows

There may be times when you want to export a folder structure and its files to use or distribute outside of Smartware Studio.

To export an entire folder structure and its files to Windows:

- Right-click on the topmost folder you want to export and select TOOLS→EXPORT FOLDERS from the context menu.
- Browse to the folder where you want the exported folder to be saved and click EXPORT. You can also paste the folder path from Windows Explorer's address bar into the EXPORT TO box.

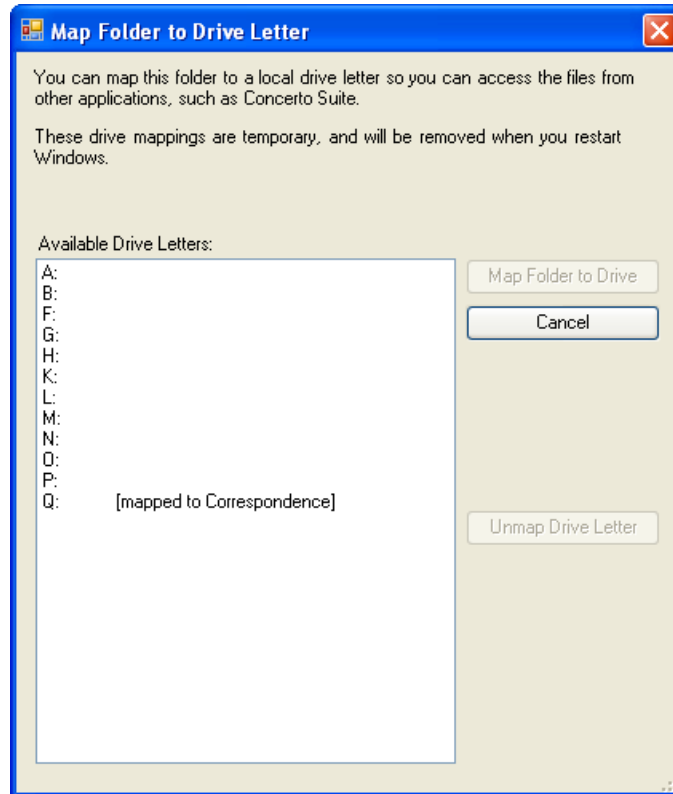
Mapping a Folder to a Drive Letter

The folder structure you see when viewing a project does not correspond to how the folders and files are stored in Smartware Studio. Therefore, there is no corresponding drive letter or path for navigating the Project View from outside of Smartware Studio.

However, there may be times when you want to provide Windows or other programs access to a single file, such as in order to open or save a file. In this case, you can temporarily map a Windows drive letter to a folder in an open project.

- Right-click on the folder you want to map, and select **MAP FOLDER TO DRIVE LETTER** in the context menu.

You will be given a list of the available drive letters:



Select a drive letter and click **MAP FOLDER TO DRIVE**. The drive letter will now be available to Windows and other programs.

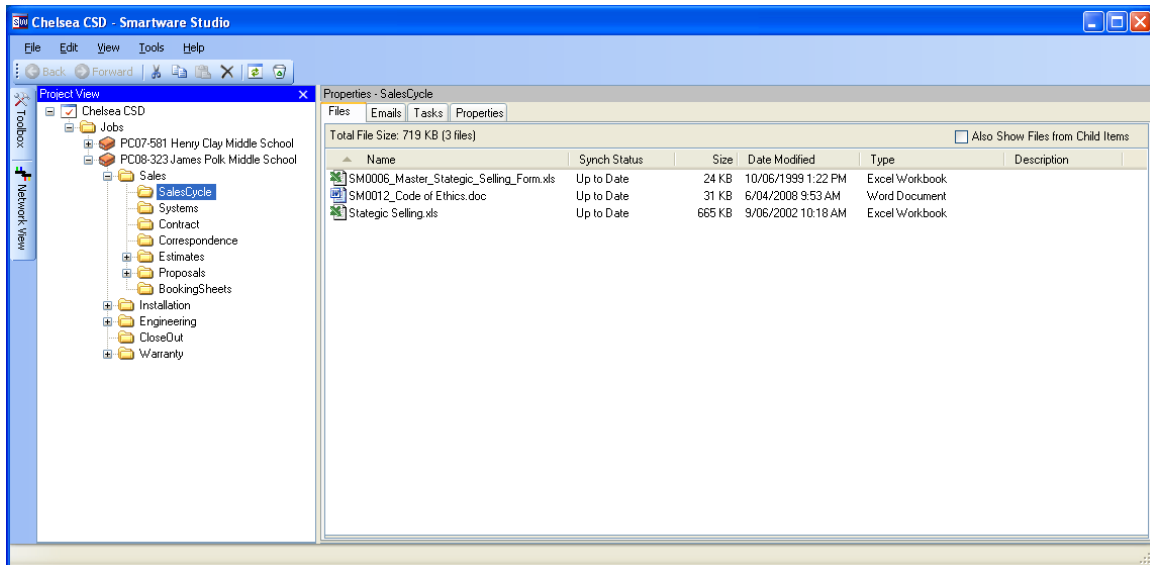
- These drive mappings are temporary, and will be removed when Windows restarts.
- These drive mappings may be removed when the project is closed in Smartware Studio.

4. Working with Files

Every Folder (actually, all items including Network Tree items) can be used to store all types of files.

The Files Tab

When you select a folder (or other item), you can select the Files tab in the Properties panel to see a list of the files in that folder.



- As you would expect, you can right-click on a file in the file list to see a menu of actions, such as OPEN, OPEN WITH..., RENAME, COPY and PASTE
- To see a list of files in a folder *and all its sub-folders*, click the ALSO SHOW FILES FROM CHILD ITEMS checkbox.
- There is a column called *Description* that is used to add additional comments to a file record (outside of the file itself). Right-click on the file and select PROPERTIES to bring up the form for editing the description.

Adding Files to a Folder

You can add files to the project from Windows by:

- Dragging and dropping one or more files from Windows Explorer or another program.
- Selecting the files in Windows, selecting COPY and then right-clicking in the Files Tab and selecting PASTE from its context menu.

A copy of the file will be added to the Smartware Studio project. The original files will not be removed from Windows, even if you have done a CUT and PASTE operation.

Moving Files between Folders

You can move a file around between folders in the project.

- Dragging and dropping the file from a file list onto another folder will move the file into that folder.
- You can also right-click on the file and select CUT or COPY from its context menu, then right-click on a folder and select PASTE from its context menu.

Copying Files Back to Windows

You can copy one or more files from the project to Windows by:

- Dragging and dropping one or more files from the Files Tab to Windows Explorer or another program.
- Selecting the files in the Files Tab, Windows, right-clicking and selecting COPY from the context menu, and then right-clicking in a folder in Windows and selecting PASTE from its context menu.

A copy of the file will be sent to Windows. The original files will not be removed from Smartware Studio, even if you have done a CUT and PASTE operation.

Adding Descriptions and Comments to a File

You can add a description to a file to show more information about it. This description is stored in the Smartware Studio database, and not in the file itself.

- Right-click on a file and select PROPERTIES from the menu.
- Fill in the DESCRIPTION field.

How Files are Stored Locally and On the Server (Synch Status)

For a local project, all the files are stored in folders that Smartware Studio maintains for each project.

For server projects, the master copy of the file is stored on the File Server. When the project is open, Smartware Studio gets a list of the files in each folder as needed, along with other information such as the file size and date modified.

When you need to access a specific file (e.g., to Open it or copy it to Windows), Smartware Studio downloads the latest version of the file to your workstation and then opens or copies it from there. This ensures that no two people are ever trying to modify the same file at the same time, or that one is changing a file while another is viewing it. This also allows the files to be used when you are not connected to the server, assuming that the file has been downloaded to the local machine at some earlier time.

The File Synch Status

When viewing the files for a server project, you will see an extra column labeled Synch Status. This column indicates how the local version (if any) of a file compares to the current version of the file on the server. The possible statuses are:

| | |
|---|---|
| <i>New File</i> | The file was added to this project on this workstation, and the project has not yet been uploaded. The file will be uploaded to the server when the project is closed (if the machine is currently connected) or the next time the connection is available. |
| <i>Only on Server</i> | The file has never been downloaded to this workstation. It will be downloaded automatically if you choose to open it. You can also download it explicitly. |
| <i>Up to Date</i> | The file on the local workstation is the same version that is on the server. |
| <i>New Version Available</i> | The file has been downloaded to the local workstation, but there is a newer version on the server. The newer version will automatically be downloaded if you open or otherwise access the file. |
| <i>Changed/Needs Uploading</i> | The local copy of the file that was downloaded to the workstation has been modified. The changes will be uploaded to the server (as a new version) when the project is closed. |
| <i>CONFLICT: File Changed Both Places</i> | The local copy of the file that was downloaded to the workstation has been modified, but somebody else has uploaded a new version to the server since your copy was downloaded. Refer to the section on <i>File Conflicts</i> for more details. |

Downloading Files

To open or otherwise work with a file on your workstation, Smartware Studio will download a copy from the server to the local machine. This happens automatically when the file is accessed.

Once downloaded, the file will still be accessible and editable on the local machine if the project is accessed when not connected to the server (e.g., on a laptop taken onto a job site).

If a set of files will need to be accessed in an off-line scenario (or in a situation where the connection speed will not be ideal), it will be necessary to download these files explicitly while connected.

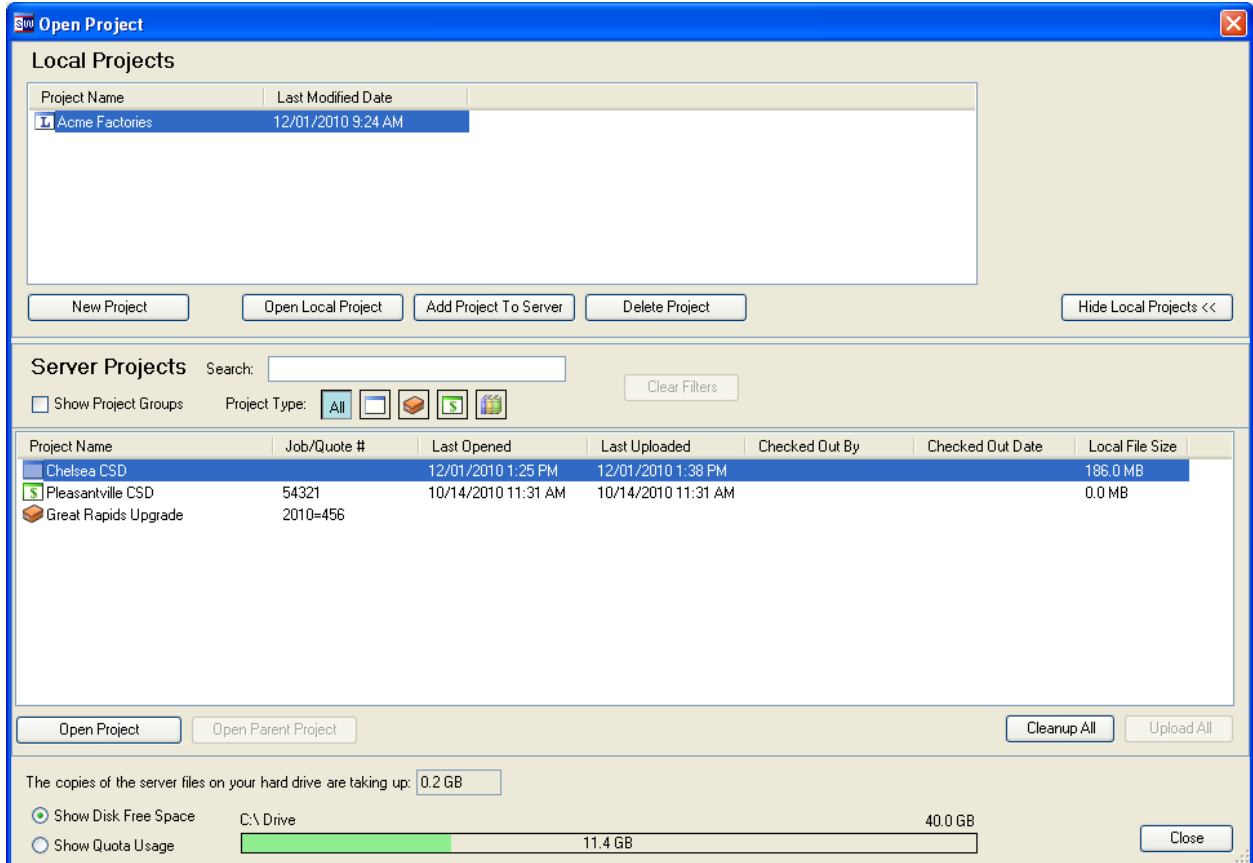
- To download a single file, right-click on the file and select **DOWNLOAD LATEST** from the context menu. This happens automatically if you open a file.
- To download multiple files from a list, multi-select the files, right-click on the selected group, and select **DOWNLOAD LATEST** from the context menu.
- To download the files in an entire folder (and all its sub-folders), right-click on the folder and select **DOWNLOAD ALL FILES**.
- To download all the files in an entire project, right-click on the project in the Server Projects list in the **OPEN PROJECT** dialog and select **DOWNLOAD ALL FILES**.
- When downloading entire folders or projects, you will be told exactly how much data will be downloaded and asked to confirm your action (in case the amount of data is exceptionally large).

Managing Local Files

Since every file you access or explicitly download is stored on the workstation's local hard drive, it is likely that a large amount of data will accumulate on the machine. This is especially true if you work with a large number of projects or a large number of files.

Since the latest version of all files is stored on the server, you can safely remove the local copies of any files you no longer need, knowing that they will be downloaded again if a future need arises.

To view how much local space is being used, go to the OPEN PROJECT dialog.



The total size of all the local files for each project is shown in the last column.

- To determine which projects are using the most space, click on the LOCAL FILE SIZE column in the Server Projects list to sort by that column.
- The total size of all the local files in all the projects is shown in the bottom section.
- To clean up a local project and delete all the local copies, right-click on the project in the Server Projects list in the OPEN PROJECT dialog and select CLEAN UP LOCAL FILES.
- To clean up all the local files for all the server projects, click the CLEANUP ALL button beneath the Server Projects list.
- To clean up a selected portion of the local files in a project, open the project, right-click on any folder and select CLEAN UP LOCAL FILES. This will clean up only the local files in that folder and its sub-folders.

Setting a Local File Quota

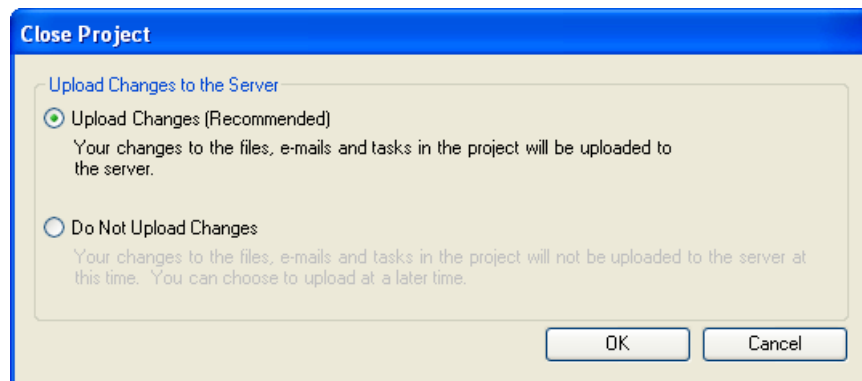
To help alert you that you may need to clean some projects, you can set a Quota for the amount of space you consider reasonable.

- To set the quota, click the SET QUOTA... button on the OPEN PROJECT dialog.
- The QUOTA USAGE meter will indicate how much of your quota space is being used by the local files.
- The meter will turn yellow and then red as you near the quota.
- The quota space is not reserved, does not prevent the space from being used by other application and may not actually be available on your hard drive.
- The quota is soft and will not be enforced. It is therefore possible to exceed the quota without any warning other than the meter turning red.

Uploading Files

If you add or change files in a server project, Smartware Studio will want to automatically upload these new and modified files to its file server, making them available to all other users as the latest version of the file.

When you close a project while connected to the server, you will be prompted to upload your changes as the default action:



You should always upload your changes when you close a project unless your connection speed would make it prohibitive. In that case, you should explicitly upload your changes then next time you have a good connection.

Uploading Files at a Later Time

If you don't upload the changes when you close the project, you can upload them explicitly when you can.

- You can determine which projects need to be uploaded by viewing the OPEN PROJECT dialog. For the projects that need uploading, the FILES LAST UPLOADED date in the server project list will be shown in red.
- To upload the changes in a project from the OPEN PROJECT dialog, right-click on the project and select UPLOAD CHANGES from the context menu.
- To upload the changes for all projects that need to be uploaded, click the UPLOAD ALL button beneath the server projects list in the OPEN PROJECT dialog.
- To upload the changes in a project while it is open, choose the FILE → UPLOAD CHANGED FILES TO SERVER menu command.

Ignoring Changes to a File

If you have modified a file but do not want your changes to be saved to the server, you can tell Smartware Studio to ignore your changes.

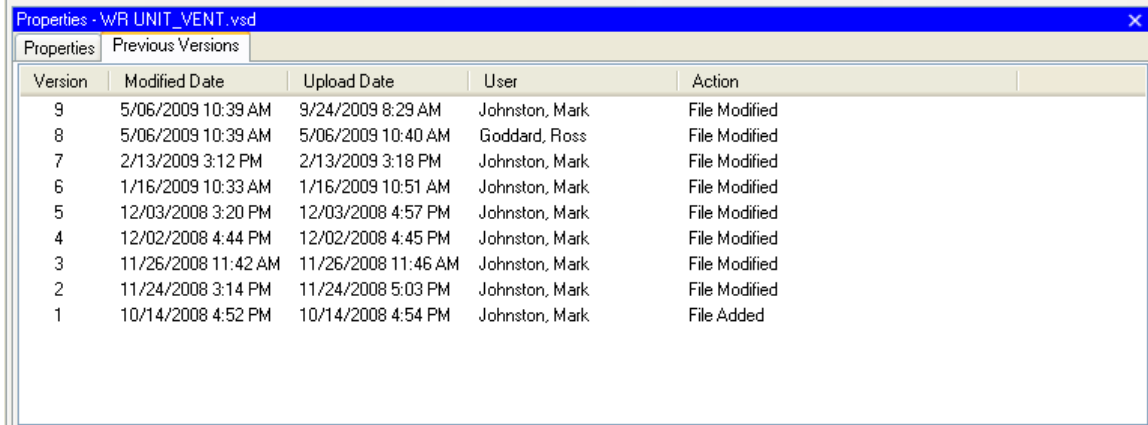
- Right-click on the file and select IGNORE CHANGES.
- The most recent version from the server will be downloaded and all your changes will be lost.

Previous Versions of Files

When you upload a new version of a file in a Server Project, Smartware Studio does not delete the previous version immediately. Instead, depending on the settings for your server, it makes one or more of the previous versions available as well. This allows you to “go back in time” in case a file has been modified in a negative way by a user or if you want to see who made certain changes and when.

- To see a list of the Previous Versions of a file that are available, right-click on the file and select PREVIOUS VERSIONS.

The list numbers the versions sequentially:



| Version | Modified Date | Upload Date | User | Action |
|---------|---------------------|---------------------|----------------|---------------|
| 9 | 5/06/2009 10:39 AM | 9/24/2009 8:29 AM | Johnston, Mark | File Modified |
| 8 | 5/06/2009 10:39 AM | 5/06/2009 10:40 AM | Goddard, Ross | File Modified |
| 7 | 2/13/2009 3:12 PM | 2/13/2009 3:18 PM | Johnston, Mark | File Modified |
| 6 | 1/16/2009 10:33 AM | 1/16/2009 10:51 AM | Johnston, Mark | File Modified |
| 5 | 12/03/2008 3:20 PM | 12/03/2008 4:57 PM | Johnston, Mark | File Modified |
| 4 | 12/02/2008 4:44 PM | 12/02/2008 4:45 PM | Johnston, Mark | File Modified |
| 3 | 11/26/2008 11:42 AM | 11/26/2008 11:46 AM | Johnston, Mark | File Modified |
| 2 | 11/24/2008 3:14 PM | 11/24/2008 5:03 PM | Johnston, Mark | File Modified |
| 1 | 10/14/2008 4:52 PM | 10/14/2008 4:54 PM | Johnston, Mark | File Added |

- To view a previous version, right-click the version in the list and select VIEW.
- To make a previous version the current version, right-click the version in the list and select MAKE CURRENT.

If there was a conflict with the file (refer to the next section on *File Conflicts*), the conflicted version would be shown in red if the conflict was not resolved. The Action column would also indicate what the conflict was and how it was resolved.

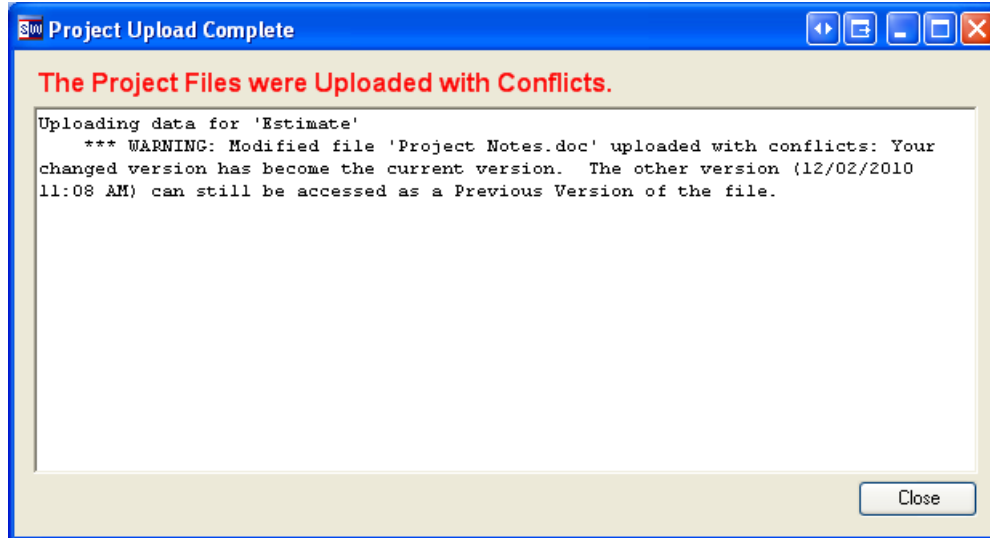
File Conflicts

One of the most important features of Smartware Studio is its ability to ensure that one person doesn't inadvertently overwrite the changes of another when they both modify the same file.

Consider the following scenario:

- A file exists in a Server project. The latest version is Version 2.
- Person A (John Smith) opens the file, automatically downloading Version 2 to their workstation.
- Person B (Larry Burns) also opens and downloads Version 2.
- Person A modifies and saves the file. He uploads his changes, which become Version 3.
- Person B modifies and saves his version of the file. He uploads his changes, which become Version 4.

The problem that would occur in a normal file server situation is that Person B has overwritten the changes that Person A has made. Smartware Studio, however, tracks the versions of the files that are downloaded to each machine, so when Person B uploads their version, they will receive this message:



As indicated, all three versions are stored on the server. This is apparent in the File Versions list:

| Properties - Project Notes.doc | | | | | |
|--------------------------------|---------------------|---------------------|-----------------|--|--|
| Previous Versions | | | | | |
| Version | Modified Date | Upload Date | User | Action | |
| 4 | 12/02/2010 11:08 AM | 12/02/2010 11:08 AM | Burns, Larry | File Modified | |
| 3 | 12/02/2010 11:08 AM | 12/02/2010 11:08 AM | Smith, John | This file was changed, but another changed version (Version 4) has superseded these changes. | |
| 2 | 12/02/2010 10:38 AM | 12/02/2010 10:38 AM | Engle, Paul | File Modified | |
| 1 | 6/28/2006 3:41 PM | 6/28/2010 12:01 PM | Williams, Sally | File Added | |

The important things to note are:

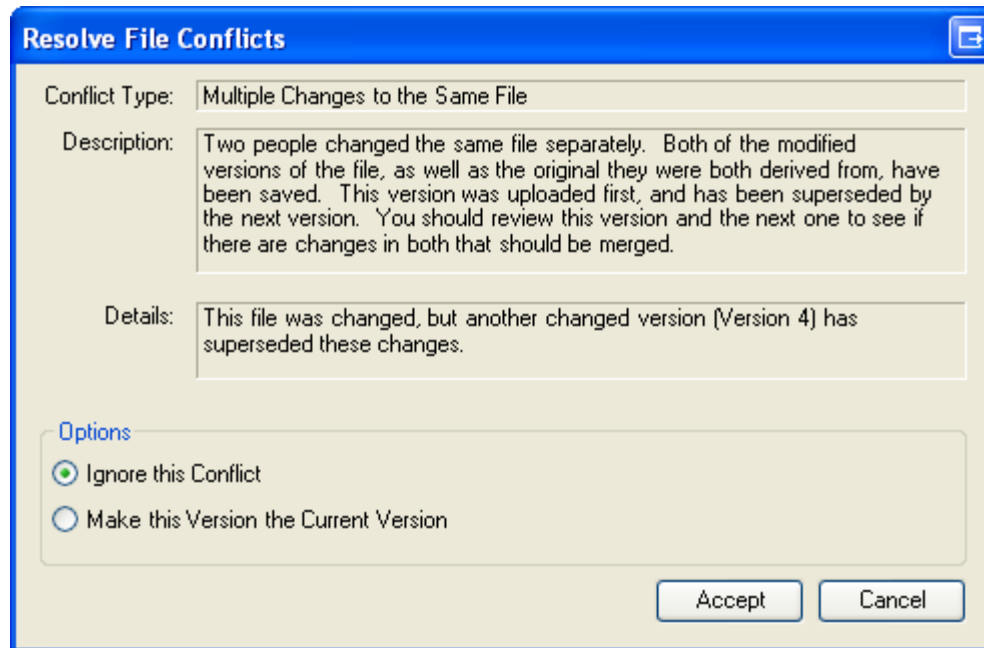
- Person A's changes (Version 3) are still available to view.
- Person B's changes (Version 4) are considered the current version.
- If nobody does anything else, Version 4 will remain the current version until the next person modifies and uploads the file.

The best way to resolve this conflict is for the two people to speak and determine what changes were made, whether either set of changes can be ignored, or if the changes need to be merged by hand.

There are therefore three ways to resolve this conflict:

1. Do nothing, leaving Version 4 as the latest and losing Version 3's changes.
2. Make Version 3 the latest, overwriting and losing Version 4's changes.
3. Merge the changes manually and create Version 5. Versions 2, 3 and 4 are all available on the server to help make this possible.

To review and resolve the conflict, right-click on the conflicted version shown in red in the Previous Versions list (in our example, this would be Version 3):



5. Working with E-Mails

In addition to files, every folder (actually, all items including Network Tree items) can also be used to store e-mails.

The Emails Tab

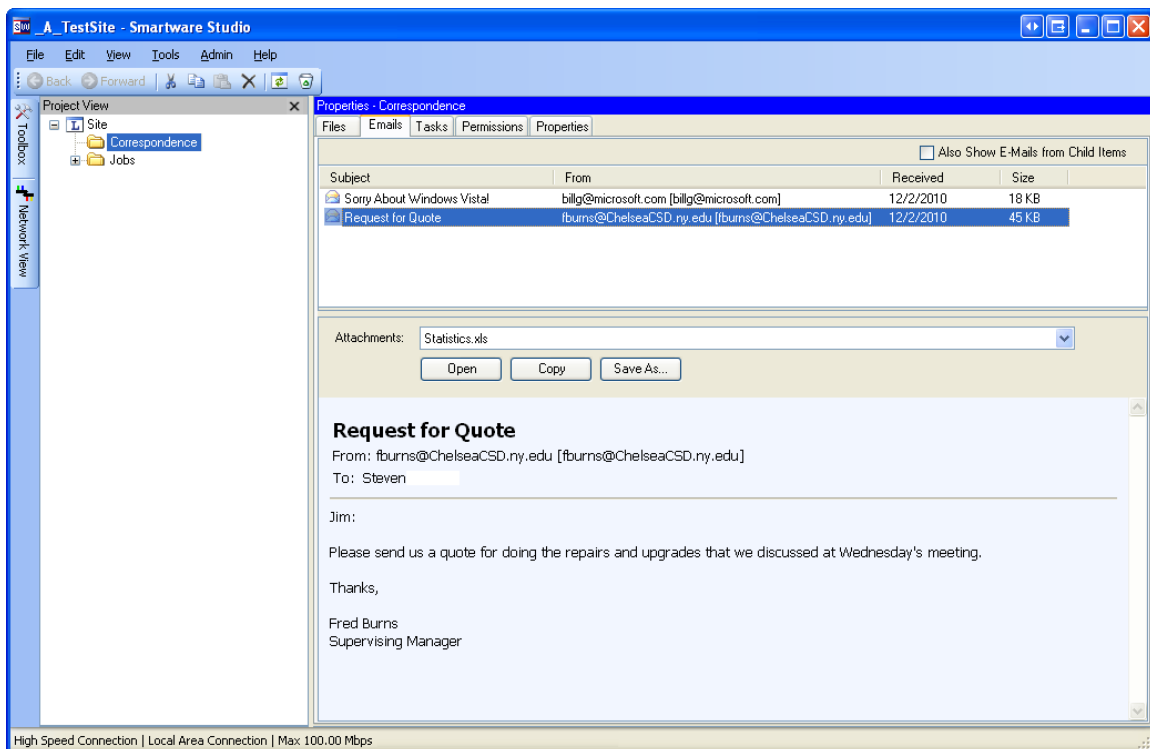
When you select a folder (or other item), you can select the Email tab in the Properties panel to see a list of the e-mails in that folder.

- Some items in the tree may not have the Email tab visible by default. If not, you can show it by selecting **VIEW→EMAILS TAB**.

It is most common to create a folder named *Correspondence* to store all the e-mails, or one Correspondence folder per Job.

Viewing Emails and Attachments

To view the content of an e-mail, select it in the list:



- To print the e-mail, right-click the e-mail in the list and select **PRINT** or **PRINT PREVIEW**.
- To view the contents of an attachment, select it in the list and click **OPEN**.
- To extract an attachment, select it in the list and click **COPY** (and Paste it to your desktop or other Windows folder) or click the **SAVE AS** button.

Forwarding E-mails

You can use Microsoft Outlook to forward an e-mail directly from the Smartware Studio project to someone else.

- With Outlook open, right-click on the e-mail in the list and select **OPEN**. The e-mail will open in an Outlook window with all options (Forward, Reply, etc.) available.

Copying E-mails into Smartware Studio

You can copy e-mails directly from Microsoft Outlook into your Smartware Studio project. When you do, the format of the message will generally include most of the formatting and the attachments.

To copy an e-mail from Outlook (not all methods are available in all versions of Outlook):

- Select the e-mail in Outlook and from the Edit menu select **COPY**. Right-click in an empty area of the Smartware Studio e-mail list and click **PASTE**.
- Right-click on the e-mail in Outlook and select **COPY**, then right-click in an empty area of the Smartware Studio e-mail list and click **PASTE**.
- Drag the e-mail from the list on Outlook and drop it in the e-mail panel in Smartware Studio.

Depending on the version of Outlook and your security settings, Outlook may prompt you for explicit permission to copy the e-mail.

Forwarding E-mails into a Smartware Studio Project

If properly configured, you can assign a unique e-mail address to each Correspondence folder in each project (e.g. *ChelseaCSD@studio.yourcompany.com*). You can then forward or carbon copy e-mails to this address from any e-mail program and they will automatically be routed to the appropriate project and folder.

Note: *This feature requires some additional setup and configuration that requires advanced IT experience. Refer to the chapter The E-Mail Forwarding Service in the Smartware Studio Setup and Administration Guide.*

The e-mail addresses for the projects will be based on a sub-domain address defined by your Administrator. If your company's normal e-mail address is *@yourcompany.com*, the Smartware Studio e-mail address will be something like *@studio.yourcompany.com*.

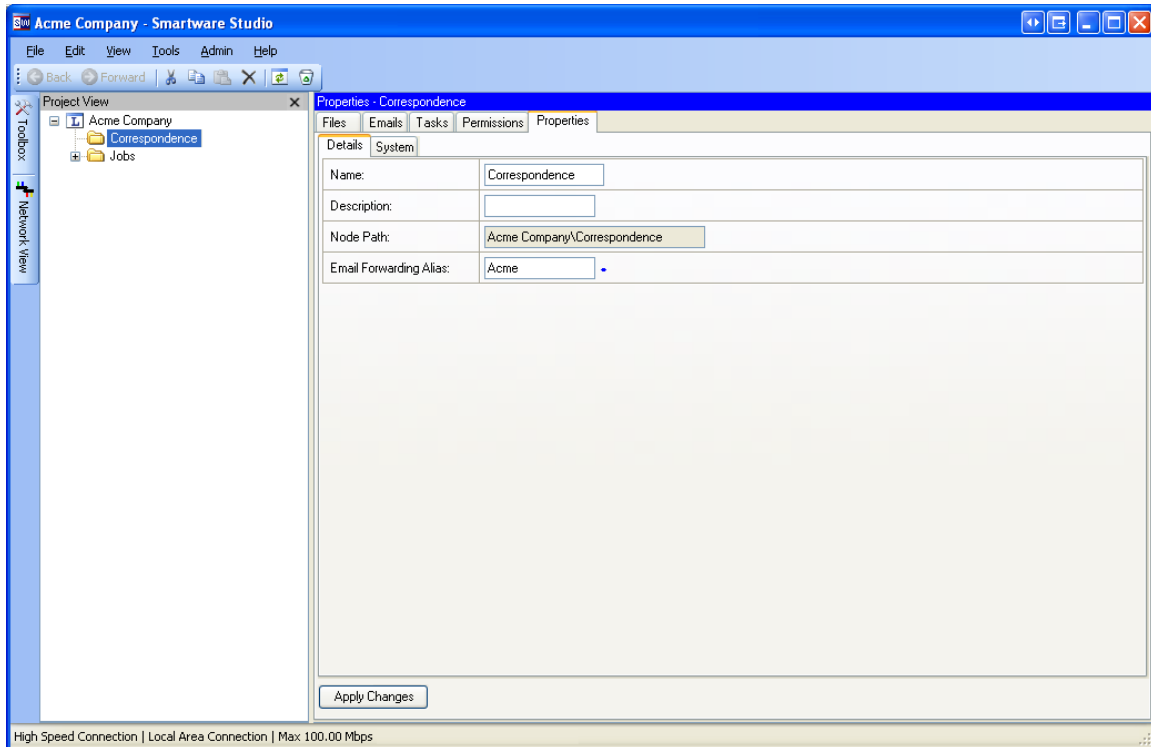
Specifying an E-Mail Alias for a Folder

Any folder in any project in Smartware Studio can be configured with an e-mail address to receive e-mails through the service.

- All the e-mail addresses will end with the sub-domain name created by your Administrator (e.g., *@studio.yourcompany.com*).

To create a new e-mail address, specify the E-MAIL FORWARDING ALIAS property of the folder.

- With the project checked out, create and select the *Correspondence* folder in the project tree.
- On the right side, select the PROPERTIES tab.
- On the DETAILS sub-tab, fill in the E-MAIL FORWARDING ALIAS.



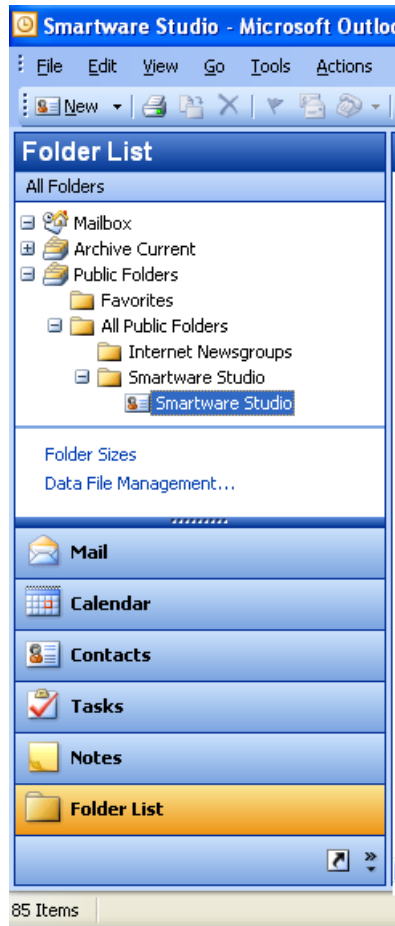
- The full e-mail address for this folder will be *Acme@studio.ourcompany.com*

Accessing a Shared Contact List in Microsoft Outlook

Your Administrator can generate a Contact List with all the aliases in the system and make this contact list available through Microsoft Outlook.

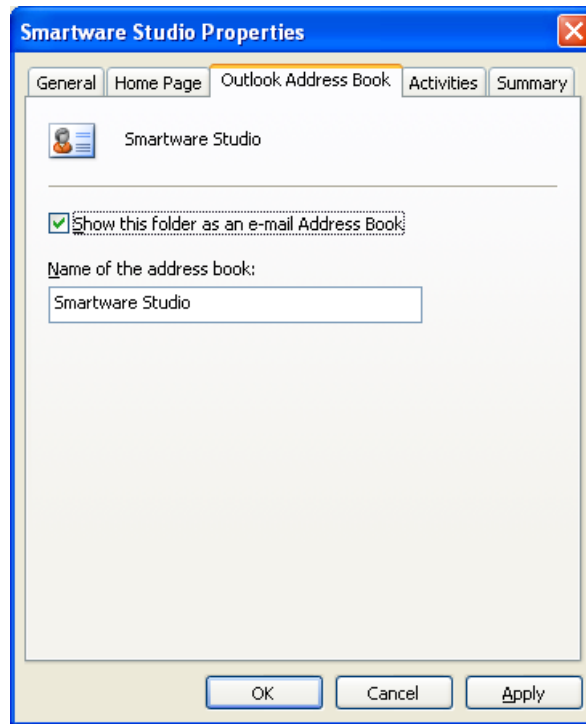
To make the shared contact list available in Outlook, do the following:

- Go to the Folder List pane by:
 - Selecting the GO→FOLDER LIST menu command, or
 - Clicking on the FOLDER LIST panel in the Navigation Pane



- Navigate to the *Public Folders* → *All Public Folders* → *Smartware Studio* folder.
- Right-click on the *Smartware Studio* contact list and select **PROPERTIES** from the menu.

- Select the OUTLOOK ADDRESS BOOK tab

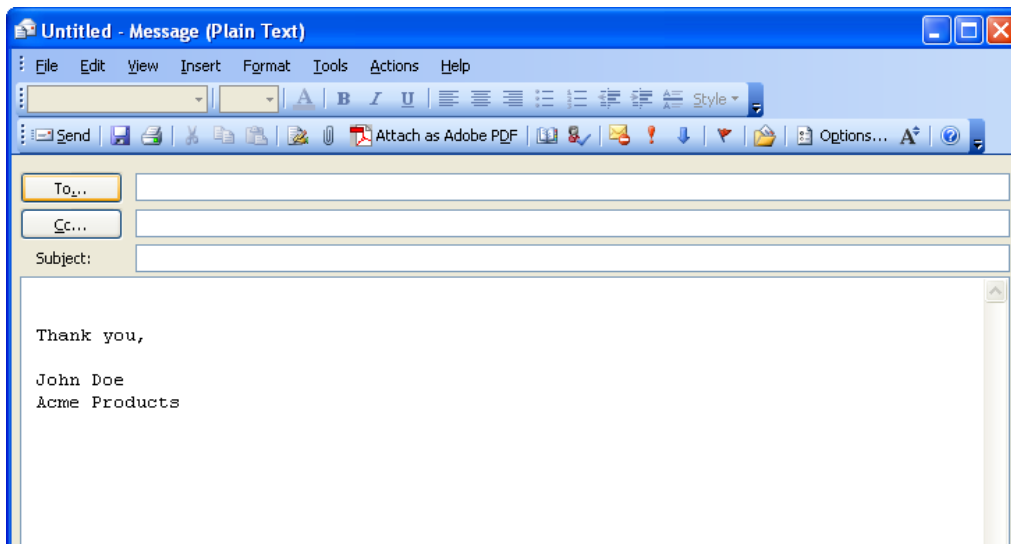


- Check the SHOW THIS FOLDER AS AN E-MAIL ADDRESS BOOK checkbox

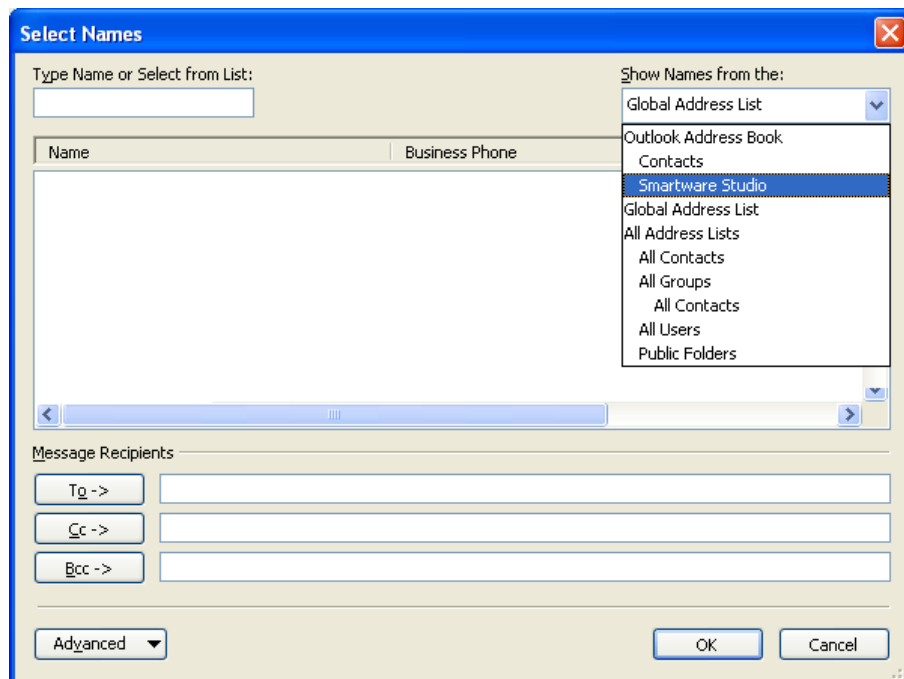
Selecting an E-mail Address from the Smartware Studio Contact List

Once the shared folder has been configured, you can access the contact list whenever you are composing, forwarding or replying to an e-mail.

- When composing an e-mail, click on the TO... button next to the field for entering the sender's e-mail address:



- In Outlook's SELECT NAMES dialog, drop down the SHOW NAMES FROM THE list and select the shared folder:



The complete list of defined alias for Smartware Studio projects will be displayed for you to browse and search.

6. The Network Tree

The Network Tree is designed to help you model various types of physical device networks, including

- HVAC Controller Systems
- PC Networks

Once created, it provides a number of significant features:

- Organized storage of Software Files for each device
- Storage of device passwords
- Generation of Automation Overview diagrams
- Generation of Device Reports
- Tools for specific software tools, such as Schneider Electric's *WorkPlace Tech*.
- Tools for specific devices, such as Niagara R2 backups.

Viewing the Network Tree

The Network Tree is a part of all Smartware Studio projects. If not already visible, you can make it visible by:

- Selecting EDIT → NETWORK VIEW
- Clicking the NETWORK VIEW tab on the left side of the Smartware Studio window

Checking Out the Project

When you open a server project in Smartware Studio, you will be asked if you want to check out the project.

- If you are only going to work with the files on the network tree (including adding, editing or modifying the files) you do not need to check out the project.
- If you are going to add, remove or move the devices in the network tree you must check out the project.
- If you are going to change the properties of the devices in the network tree, such as the network addresses, you must check out the project.

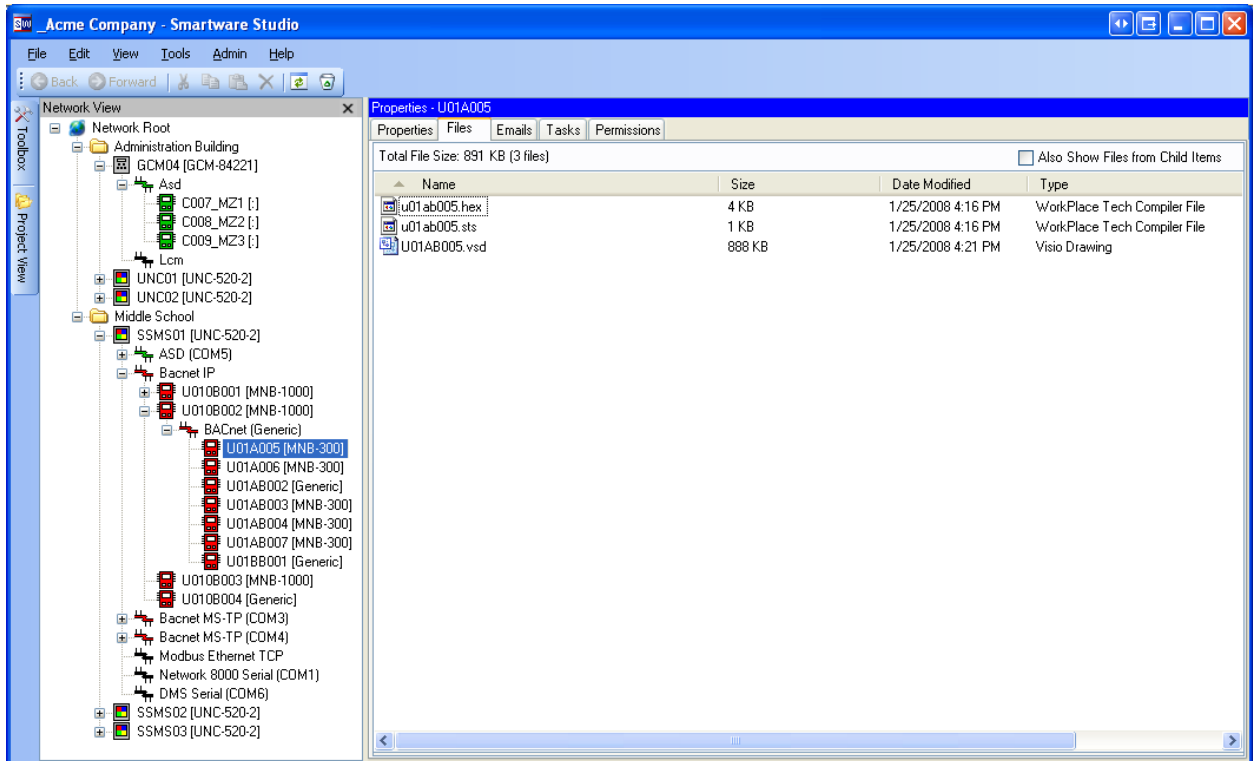
Refer to the earlier chapter on *Smartware Studio Projects* for more information.

The Structure of the Network Tree

The Network Tree includes three types of items:

- Devices
- Buses
- Folders

Here is sample tree with all three types of items:



- The *Network Root* can contain Devices and Folders.
- *Folders* can be added to Devices and other Folders.
- *Buses* exist underneath Devices, but cannot be added directly. They are turned on or off from the Device's property tabs.
- *Devices* can be added to Folders or compatible Buses.

Each type of item and each type of Device can have different information and functionality. You can access these from:

- The specific *Property Tabs*.
- The *Context Menu* (right-click the item in the tree)

For example, a Niagara UNC device has additional tabs for BUS CONFIGURATION and STATION BACKUPS. Buses have a context menu command for TOOLS→DUPLICATE AND DISTRIBUTE SOFTWARE FILES. The specific tabs and commands for each type of device are described in more detail in the next two chapters.

Device Properties

While the exact list of properties will vary from device to device, most share a similar list on three tabs: *Details*, *Network* and *Software*.

The *Details* tab contains general properties:

| Properties - U01A005 | |
|---|---|
| Properties Files Emails Tasks Permissions | |
| Details Network Software | |
| Name: | U01A005 |
| Description: | RTU2 |
| Node Path: | Network Root\Middle School\SSMS01 [UNC-520-2]\B |
| Part Information | |
| Manufacturer: | TAC |
| Part Number: | MNB-300 |
| Location Information | |
| Location Installed: | NE Corner of Gym |
| Location Served: | D Wing |
| Purchase Information | |
| Vendor Order Number: | |
| Purchase Order Number: | |
| Automation Overview | |
| Physical Order: | 7 |
| Include Terminator: | False |
| FTP Forwarding | |
| FTP Forwarding Alias: | |
| <input type="button" value="Apply Changes"/> | |

- The *Physical Order* and *Include Terminator* properties are used to control the generation of the *Automation Overview* diagrams described later in this chapter.
- The *FTP Forwarding Alias* property allows you to create an alias for automatic forwarding of files to this device's file list from an external folder or FTP site. Refer to the chapter *The E-Mail Forwarding Service* in the *Smartware Studio Setup and Administration Guide* for more information.

The *Network* tab contains properties related to the device's network addresses:

| Properties - U01A005 | |
|---|------------------------------|
| Properties Files Emails Tasks Permissions | |
| Details Network Software | |
| Niagara Station Swid: | /SSMS01/MstpU010B002/U01A005 |
| Bacnet Instance Number: | 110005 |
| Bacnet Network Number: | 110 |
| MAC Address: | 05 |
| Show BACnet MS/TP Bus: | False |
| Private Ethernet Address | |
| Private Host Name: | |
| Private DHCP: | False |
| Private IP Address: | 192 . 168 . 2 . 15 |
| Private Port Number: | 0 |
| Private Subnet Mask: | 255 . 255 . 255 . 0 |
| Private Default Gateway: | 192 . 168 . 0 . 1 |
| Public Ethernet Address | |
| Has Public Ethernet Address: | False |
| Apply Changes | |

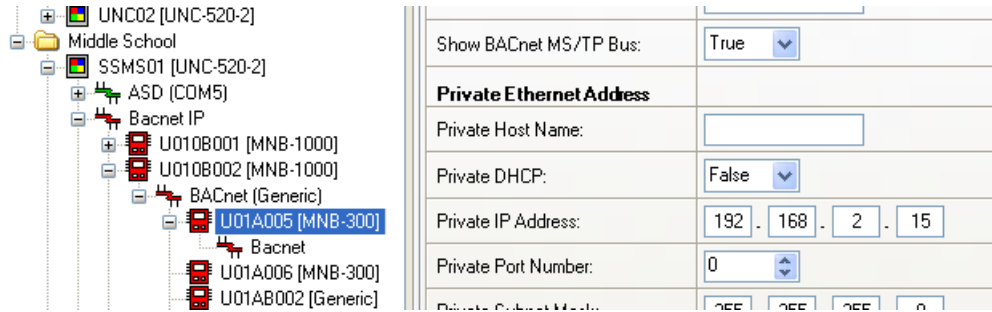
- These properties will vary from device to device.
- Some of these properties are filled in when the Network Tree is built automatically from global controller backups (e.g., GCM, Niagara UNC) or from scanned software files (e.g., WorkPlace Tech).

Some properties, when accepted, will make other properties of buses appear.

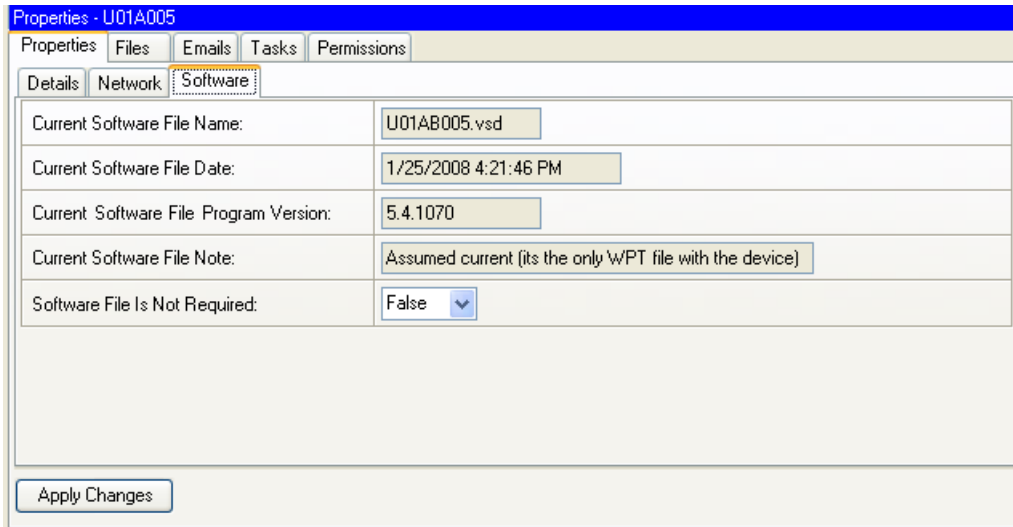
- If you change *Has Public Ethernet Address* to True, the specific properties for the public address will appear.

| | |
|--------------------------------|---------------------|
| Private Subnet Mask: | 255 . 255 . 255 . 0 |
| Private Default Gateway: | 192 . 168 . 0 . 1 |
| Public Ethernet Address | |
| Has Public Ethernet Address: | True |
| Public Host Name: | |
| Public DHCP: | False |
| Public IP Address: | . . . |
| Public Port Number: | 0 |
| Public Subnet Mask: | . . . |
| Public Default Gateway: | . . . |

- If you change *Show BACnet MS/TP Bus* to True, the bus will appear beneath the device node.



The *Software* tab contains properties related to the software files stored with the device:



- Device Software Files are described in more details in the later chapter.

Building the Network Tree

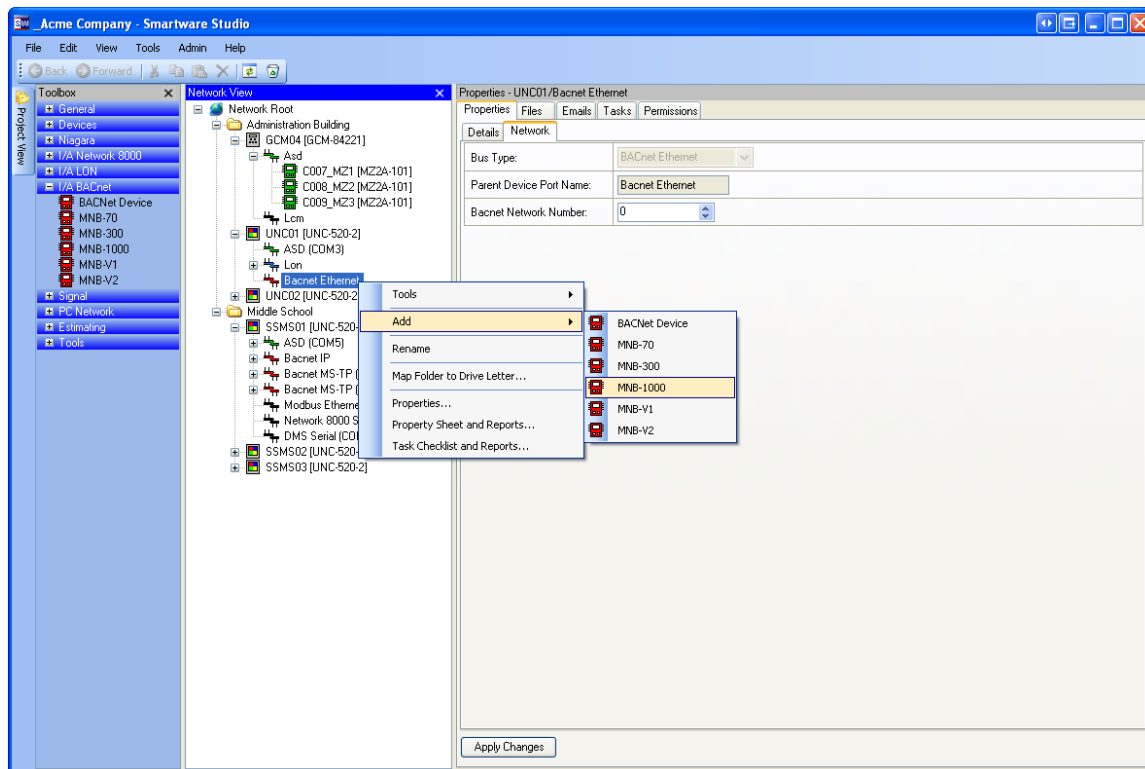
The Network Tree is generally built in a combination of two methods: *manually* or *automatically*.

- When you build a portion manually, you add devices from the toolbox to the appropriate folder or bus. You can then configure the devices to show the appropriate buses beneath them, adding devices to these sub-networks as needed.
- Some global controllers (such as the GCM and Niagara UNC) have utilities that allow you to import a backup of the controller which contains enough information about the devices on its bus to build the network tree and fill in some of their properties. Refer to the later chapter on the specific devices for more information.

Remember, if you are going to edit the Network Tree structure, the project must be *checked out*.

Adding Devices to the Network Tree

You can add a device to the Network Tree in one of two ways:



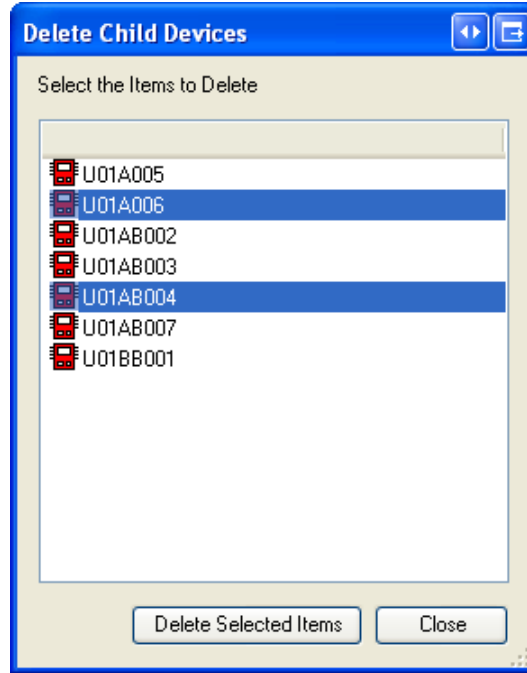
- Open the *Toolbox*, select the appropriate stencil with the device you want, and drag it onto the parent folder or bus. Only compatible devices can be put on a bus.
- Right-click on the parent folder or bus and select the **ADD** menu. A list of compatible devices will be shown.

If you want to quickly add more than one device of the same type, you can do the following:

- Add the first instance of the device.
- Right-click the new device and select **DUPLICATE X** to add the additional instances.
- Right-click on the parent folder or bus and select **PROPERTY SHEET AND REPORTS** to quickly rename the new instances. Refer to the later section in this chapter for more detail.

Deleting Multiple Devices from the Network Tree

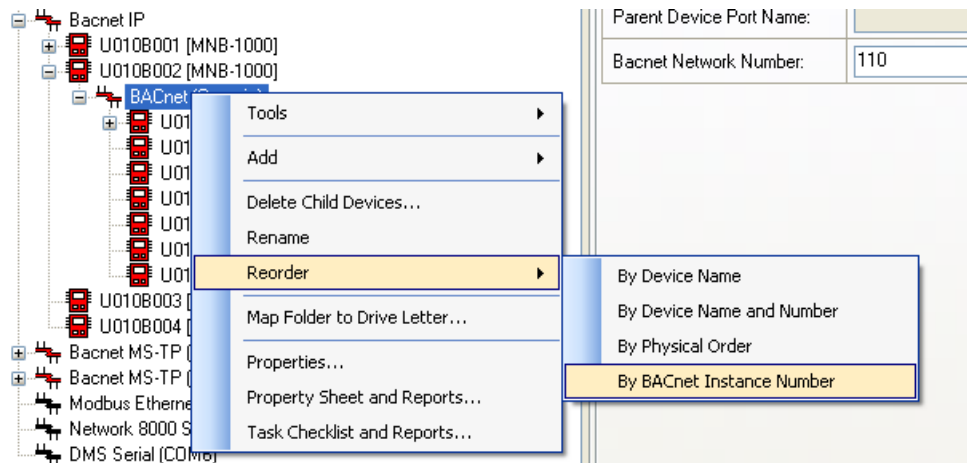
To remove multiple devices from a bus or folder on the Network Tree at once, right-click on the parent folder or bus and select **DELETE CHILD DEVICES**. This will present the devices in a multi-selectable list box:



- You can select multiple items (CTRL+CLICK to select individual folders; SHIFT+CLICK to select a range of folders) and then click **DELETE SELECTED ITEMS** to delete them.

Reordering Devices

To reorder the devices based on their names or addresses, right-click on the parent folder or bus and select **REORDER** from the context menu.



You can reorder:

- BY DEVICE NAME (purely alphabetical)
- BY DEVICE NAME AND NUMBER (which sorts names such as *RTU2* and *RTU10* in proper numerical order.
- BY PHYSICAL ORDER (based on the *Physical Order* property on the Details tab; used by the Automation Overview diagrams described later in this chapter)
- By Device Address (e.g. BACnet Instance Number)

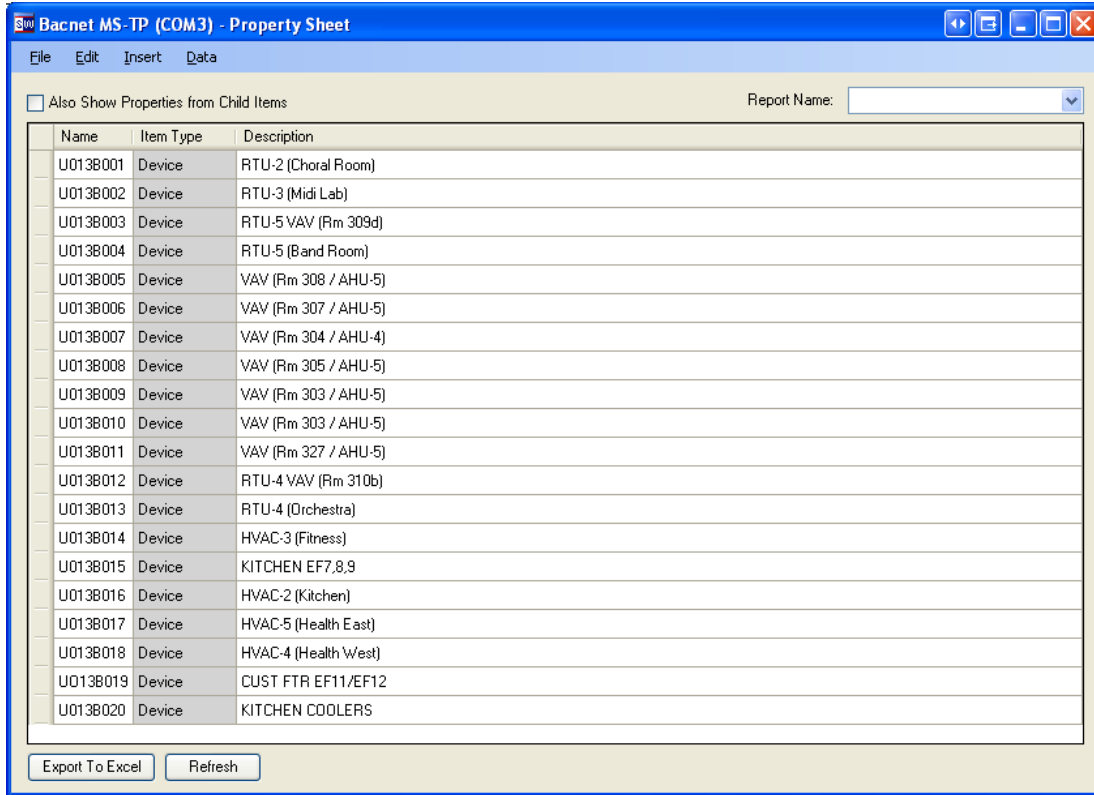
Property Sheets and Reports

Property Sheets and Reports and a utility that can be used to:

- Quickly rename a set of devices
- Quickly view and edit the same property across a set of devices
- Generate and export a report of device properties

A Property Sheet is essentially a spreadsheet, with each row representing a single object (e.g., device) in the network tree, and each column representing a specific property (e.g., *Name, Description, and BACnet Instance Number*).

To create a Property Sheet, right-click on a parent node of the items you want in the report and select **PROPERTY SHEET AND REPORTS**. For example, to generate a Property Sheet of the devices in a single bus, select the menu command from the bus:



- You can edit any of the properties with a white background. Gray background columns are read-only.
- The default Property Sheet report includes just the basic *Name* and *Description* properties that all items share. This is a quick way to rename a set of items or update their descriptions.

Property Sheet Reports

To view additional properties, select a specific Report from the list in the upper-right corner. For example, here is the same list using the *Devices* report:

| Name | Part Number | Description | Location Installed | Location Served | Physical Order | Include Terminator |
|----------|-------------|----------------------|--------------------|-----------------|----------------|-------------------------------------|
| U013B001 | MNB-300 | RTU-2 (Choral Room) | | Choral Room | 20 | <input checked="" type="checkbox"/> |
| U013B002 | MNB-300 | RTU-3 (Midi Lab) | | Midi Lab | 19 | <input type="checkbox"/> |
| U013B003 | MNB-V2 | RTU-5 VAV (Rm 309d) | | Band Room | 16 | <input type="checkbox"/> |
| U013B004 | MNB-300 | RTU-5 (Band Room) | | Band Room | 15 | <input type="checkbox"/> |
| U013B005 | MNB-V2 | VAV (Rm 308 / AHU-5) | | Room 308 | 14 | <input type="checkbox"/> |
| U013B006 | MNB-V2 | VAV (Rm 307 / AHU-5) | | Room 307 | 13 | <input type="checkbox"/> |
| U013B007 | MNB-V2 | VAV (Rm 304 / AHU-4) | | Room 304 | 12 | <input type="checkbox"/> |
| U013B008 | MNB-V2 | VAV (Rm 305 / AHU-5) | | Room 305 | 11 | <input type="checkbox"/> |
| U013B009 | MNB-V2 | VAV (Rm 303 / AHU-5) | | Room 303 | 10 | <input type="checkbox"/> |
| U013B010 | MNB-V2 | VAV (Rm 303 / AHU-5) | | Room 302 | 9 | <input type="checkbox"/> |
| U013B011 | MNB-V2 | VAV (Rm 327 / AHU-5) | | Room 327 | 8 | <input type="checkbox"/> |
| U013B012 | MNB-V2 | RTU-4 VAV (Rm 310b) | | Orchestra Room | 18 | <input type="checkbox"/> |
| U013B013 | MNB-300 | RTU-4 (Orchestra) | | Orchestra Room | 17 | <input type="checkbox"/> |
| U013B014 | MNB-300 | HVAC-3 (Fitness) | | Fitness | 3 | <input type="checkbox"/> |
| U013B015 | MNB-300 | KITCHEN EF7,8,9 | | | 7 | <input type="checkbox"/> |
| U013B016 | MNB-300 | HVAC-2 (Kitchen) | | Kitchen | 6 | <input type="checkbox"/> |
| U013B017 | MNB-300 | HVAC-5 (Health East) | | Health (East) | 1 | <input type="checkbox"/> |
| U013B018 | MNB-300 | HVAC-4 (Health West) | | Health (West) | 2 | <input type="checkbox"/> |
| U013B019 | MNB-300 | CUST FTR EF11/EF12 | | | 5 | <input type="checkbox"/> |
| U013B020 | MNB-300 | KITCHEN COOLERS | OUTSIDE KITCHEN | KITCHEN COOLERS | 4 | <input type="checkbox"/> |

- If you want to report on items from more than one parent, start with an item higher up in the tree and check the **ALSO SHOW PROPERTIES FROM CHILD ITEMS** checkbox.
- When you select a specific Report, only the items of that type will be included. For example, if you run a report from a Niagara UNC with multiple bus types and select the *Lon Devices* report, the report will be filtered to include only Lon Devices.
- In general, a report will show all the properties that all the items of that type have in common. More specific reports show more properties.

Here is the *BACnet Devices* report for the same items. Note the addition of the *Bacnet Instance Number* and *Bacnet Network Number* properties:

The screenshot shows a software window titled "Bacnet MS-TP (COM3) - Property Sheet". It contains a table with the following data:

| Name | Part Number | Description | Bacnet Instance Number | Bacnet Network Number | Location Installed | Location Served | Physical Order | Include Terminator |
|----------|-------------|----------------------|------------------------|-----------------------|--------------------|-----------------|----------------|-------------------------------------|
| U013B001 | MNB-300 | RTU-2 (Choral Room) | 103001 | 103 | | Choral Room | 20 | <input checked="" type="checkbox"/> |
| U013B002 | MNB-300 | RTU-3 (Midi Lab) | 103002 | 103 | | Midi Lab | 19 | <input type="checkbox"/> |
| U013B003 | MNB-V2 | RTU-5 VAV (Rm 309d) | 103003 | 103 | | Band Room | 16 | <input type="checkbox"/> |
| U013B004 | MNB-300 | RTU-5 (Band Room) | 103004 | 103 | | Band Room | 15 | <input type="checkbox"/> |
| U013B005 | MNB-V2 | VAV (Rm 308 / AHU-5) | 103005 | 103 | | Room 308 | 14 | <input type="checkbox"/> |
| U013B006 | MNB-V2 | VAV (Rm 307 / AHU-5) | 103006 | 103 | | Room 307 | 13 | <input type="checkbox"/> |
| U013B007 | MNB-V2 | VAV (Rm 304 / AHU-4) | 103007 | 103 | | Room 304 | 12 | <input type="checkbox"/> |
| U013B008 | MNB-V2 | VAV (Rm 305 / AHU-5) | 103008 | 103 | | Room 305 | 11 | <input type="checkbox"/> |
| U013B009 | MNB-V2 | VAV (Rm 303 / AHU-5) | 103009 | 103 | | Room 303 | 10 | <input type="checkbox"/> |
| U013B010 | MNB-V2 | VAV (Rm 303 / AHU-5) | 103010 | 103 | | Room 302 | 9 | <input type="checkbox"/> |
| U013B011 | MNB-V2 | VAV (Rm 327 / AHU-5) | 103011 | 103 | | Room 327 | 8 | <input type="checkbox"/> |
| U013B012 | MNB-V2 | RTU-4 VAV (Rm 310b) | 103012 | 103 | | Orchestra Room | 18 | <input type="checkbox"/> |
| U013B013 | MNB-300 | RTU-4 (Orchestra) | 103013 | 103 | | Orchestra Room | 17 | <input type="checkbox"/> |
| U013B014 | MNB-300 | HVAC-3 (Fitness) | 103014 | 103 | | Fitness | 3 | <input type="checkbox"/> |
| U013B015 | MNB-300 | KITCHEN EF7,8,9 | 103015 | 103 | | | 7 | <input type="checkbox"/> |
| U013B016 | MNB-300 | HVAC-2 (Kitchen) | 103016 | 103 | | Kitchen | 6 | <input type="checkbox"/> |
| U013B017 | MNB-300 | HVAC-5 (Health East) | 103017 | 103 | | Health (East) | 1 | <input type="checkbox"/> |
| U013B018 | MNB-300 | HVAC-4 (Health West) | 103018 | 103 | | Health (West) | 2 | <input type="checkbox"/> |
| U013B019 | MNB-300 | CUST FTR EF11/EF12 | 103019 | 103 | | | 5 | <input type="checkbox"/> |
| U013B020 | MNB-300 | KITCHEN COOLERS | 0 | 0 | OUTSIDE KITCHEN | KITCHEN COOLERS | 4 | <input type="checkbox"/> |

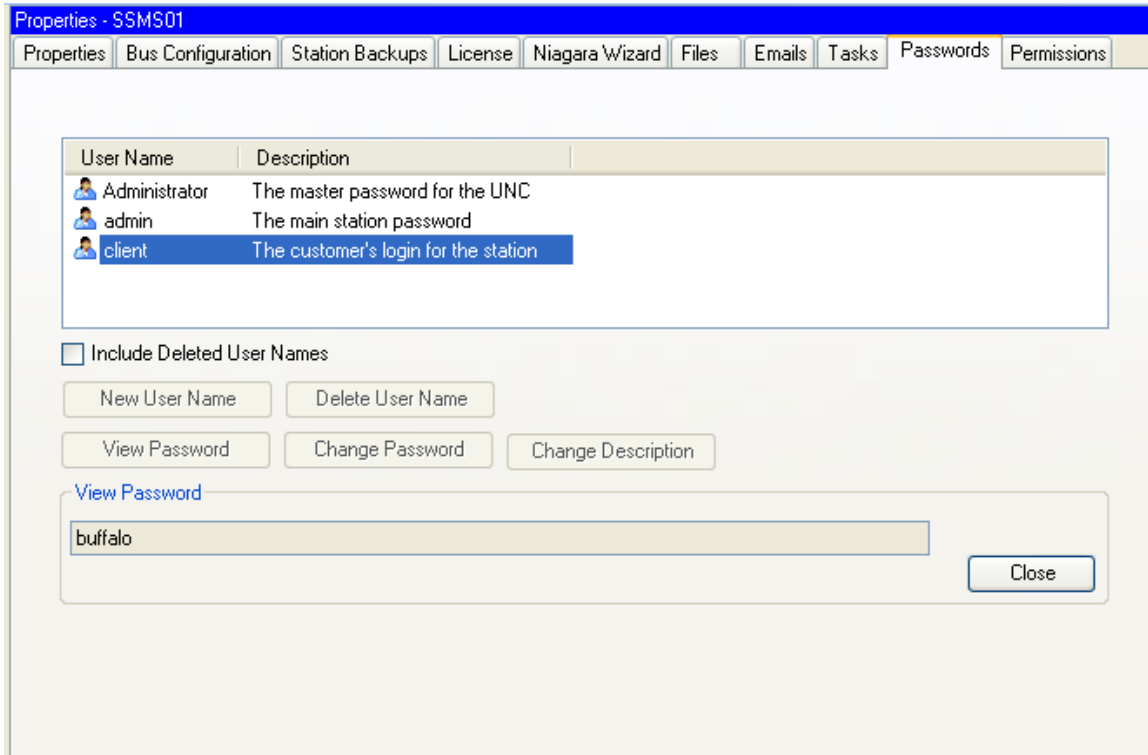
Importing and Exporting Property Sheet Data

You can move data into and out of the Property Sheets in a number of ways:

- To export the entire Property Sheet to Excel, click the EXPORT TO EXCEL button or select FILE → EXPORT TO EXCEL.
- If you want to paste data from an external spreadsheet into the Property Sheet:
 - Highlight the cells in the external spreadsheet
 - Select COPY
 - In the Property Sheet, click in the first cell to paste into and select the entire cell (not just the text).
 - Select PASTE
- If you want to fill the same value down into multiple cells, highlight all the cells and select EDIT → FILL → DOWN. The top value will be copied into the other cells.

The Passwords Tab

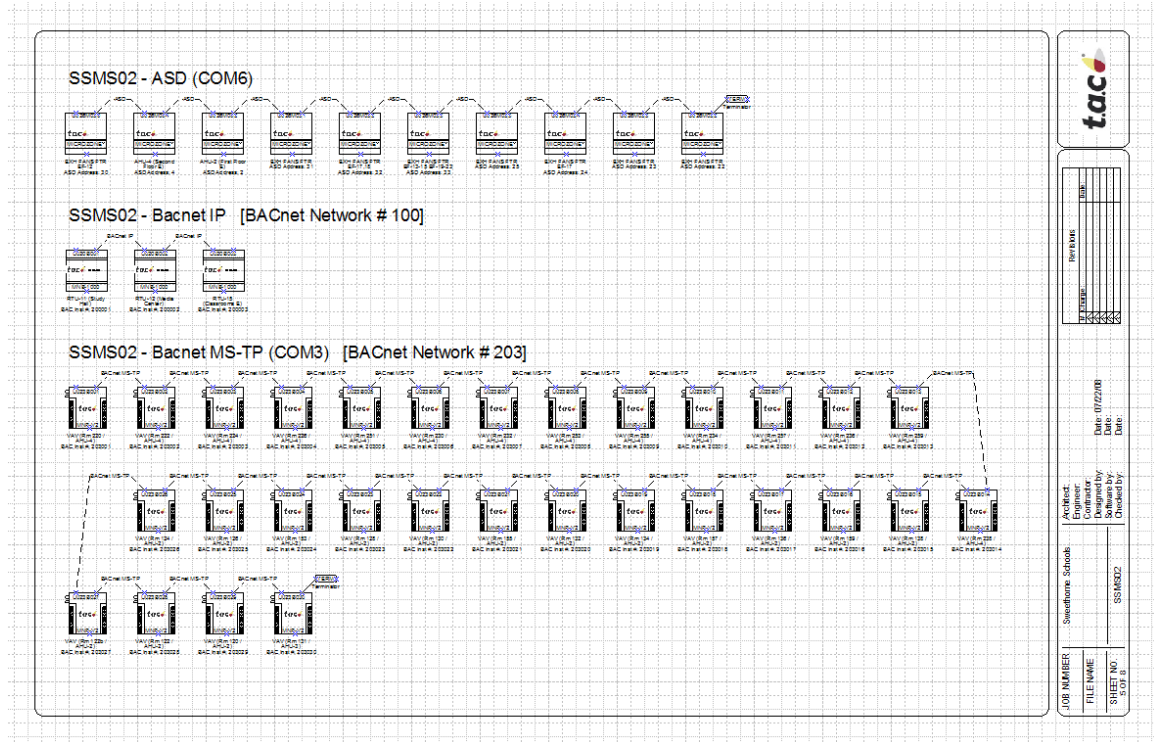
For a server project, each device has a Passwords tab that can be used to store the User Names and Passwords for accessing the device:



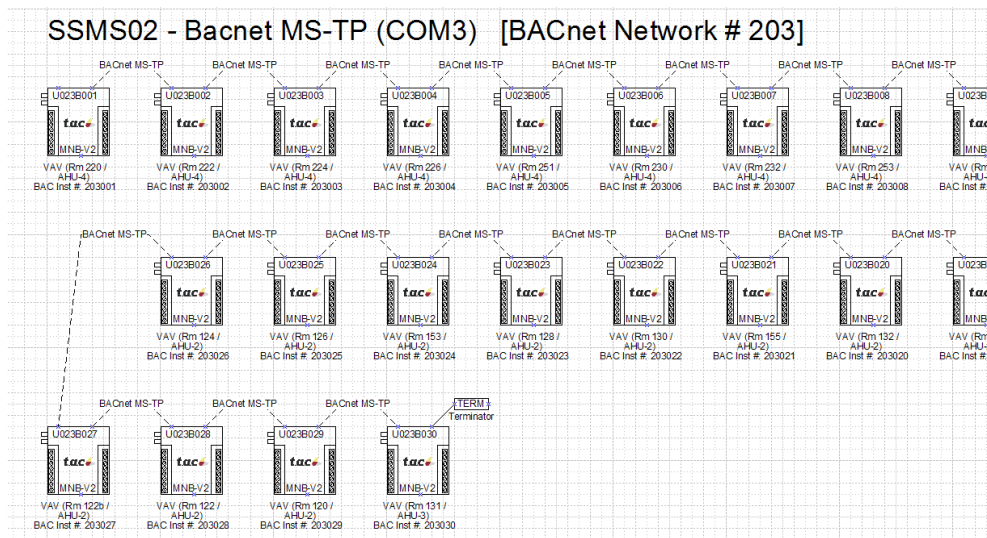
- The passwords are stored and encrypted in the server's database, and are never stored on a local workstation. This guarantees that a lost machine won't reveal these passwords, but also requires that the workstation be connected to the server in order to view a password.
- You can store multiple User Name and Password combinations on the same device.

Automation Overview Diagrams

Once you've created a Network Tree you can generate an Automation Overview diagram, which is a Visio drawing showing how the devices on each bus are organized and ordered.

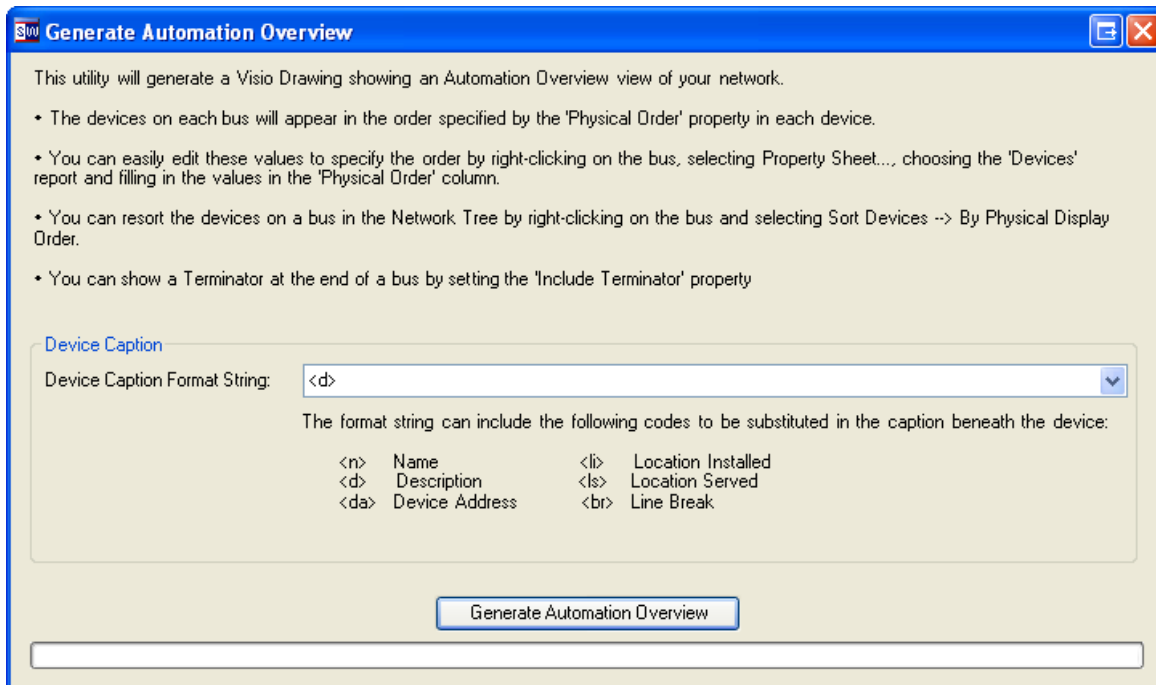


- Each bus is shown in a separate group.
- You can specify what information is shown below each device.



Generating an Automation Overview Diagram

To generate the diagram, right-click on the Network Root or a Folder in the Network Tree and select TOOLS → GENERATE AUTOMATION OVERVIEW.



- You must have Visio installed on your workstation to generate the diagrams.
- When you create the Overview, the Visio file will automatically be saved on the Network Root or Folder that you selected.
- The devices on a bus are ordered by the *Physical Order* property of the device. You can edit these values on the Properties tab of each device or as a group by using a Property Sheet (refer to the earlier section).
- To show a Terminator at the end of a bus, set the *Include Terminator* property of the last device to True.

Device Display Format

You can adjust what values are shown beneath each device in the diagram. The Device Caption Format String is used to define the format, with substitution codes used to fill in the values.

Some examples, assuming a device with the following properties:

| | |
|-------------------------|--------|
| Name: | C007 |
| Description: | RTU2 |
| Bacnet Instance Number: | 203030 |

| Format String | Generated Caption |
|----------------------|----------------------------|
| <n> | C007 |
| Name : <n> | Name: C007 |
| <n> : <d> | C007 : RTU2 |
| <n> <d> | C007 RTU2 |
| <n> <da> | C007 BAC Inst #: 203030 |

- The substitution code
 can be used to force a line break. Longer lines will wrap automatically.
- The Device Address is formatted automatically depending on the device.

7. Network Tree Software Files

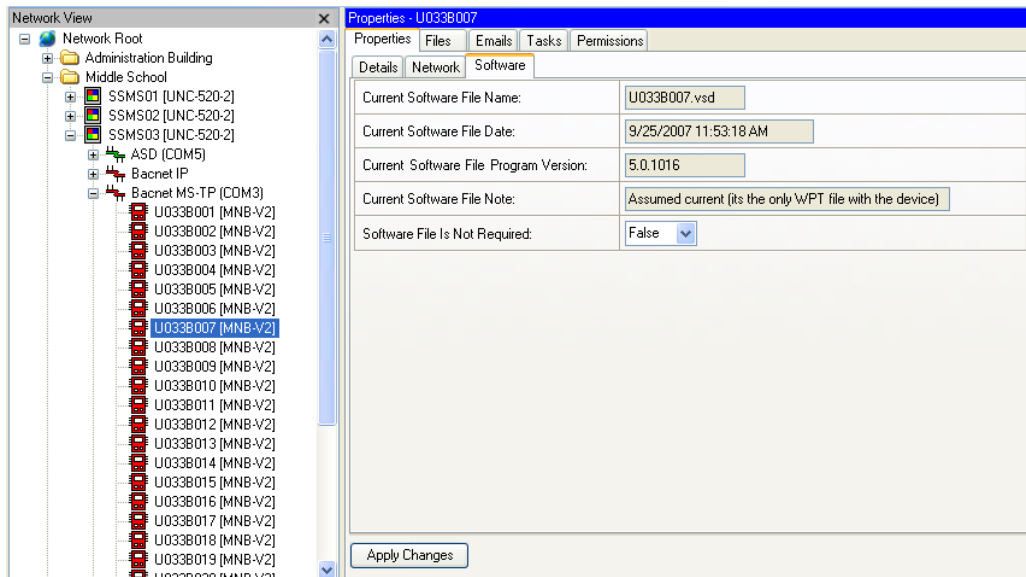
The Smartware Studio Network Tree is ideal for storing the software files and backups that are associated with the device. These files often include:

- Source Files (in Visio, text, custom binary or other format)
- Compiler Files
- Backups from the Field (in zip, xml, binary or other format)
- Documentation and Notes

You can store any number or type of file on the Files tab of the device. Each device is programmed to know the name or file extension of its source files, and in some situations (such as with Visio files, which are used by a number of different applications) will scan the file to confirm or determine its contents. You can then run a report of the devices and their latest software file to ensure that all the devices are properly backed up, or to determine what backups need to be obtained.

The Software File Properties

All devices have a sub-tab named Software on its Properties tab.



The first four show what the device has determined to be its *Current Software File*.

- The File's *Name* and *Date* are shown
- If it's applicable and known, the *Program Version* (e.g., WorkPlace Tech 5.0.1016) that was used to create the source file. Having this value filled in may require that the file has been *scanned*. Refer to the later section for more detail.
- The *Note* lets you know if Smartware Studio has determined there to be a good backup, and how it came to that conclusion.

Software Files Report

You can easily run a report to show all the devices on a bus or in a building showing the information about the software files and backups in the system.

To run the Software Files Report:

- Right-click on the bus, folder or global controller device that contains the devices on which you want to report.
- Select the PROPERTY SHEETS AND REPORTS menu command.
- In the REPORT NAME list, select *Software Files*.

| Name | Current Software File Name | Current Software File Date | Current Software File Program Version | Current Software File Note | Software File Is Not Required |
|----------|----------------------------|----------------------------|---------------------------------------|---|-------------------------------------|
| U033B001 | U033B001.vsd | 9/25/2007 11:38:58 AM | 5.0.1016 | Assumed current (its the only WPT file with the device) | <input type="checkbox"/> |
| U033B002 | U033B002.vsd | 9/25/2007 11:41:18 AM | 5.0.1016 | Assumed current (its the only WPT file with the device) | <input type="checkbox"/> |
| U033B003 | | | | | <input type="checkbox"/> |
| U033B004 | U033B004.vsd | 9/25/2007 11:46:12 AM | 5.0.1016 | Assumed current (its the only WPT file with the device) | <input type="checkbox"/> |
| U033B005 | U033B005.vsd | 11/21/2007 1:51:08 PM | 5.0.1016 | Assumed current (its the only WPT file with the device) | <input type="checkbox"/> |
| U033B006 | U033B006.vsd | 9/25/2007 11:51:18 AM | 5.0.1016 | Assumed current (its the only WPT file with the device) | <input type="checkbox"/> |
| U033B007 | n/a | | | No software file required | <input checked="" type="checkbox"/> |
| U033B008 | U033B008.vsd | 9/25/2007 11:56:22 AM | 5.0.1016 | Assumed current (its the only WPT file with the device) | <input type="checkbox"/> |
| U033B009 | U033B009.vsd | 9/25/2007 12:57:16 PM | 5.0.1016 | Assumed current (its the only WPT file with the device) | <input type="checkbox"/> |
| U033B010 | U033B010.vsd | 9/25/2007 1:02:16 PM | 5.0.1016 | Assumed current (its the only WPT file with the device) | <input type="checkbox"/> |
| U033B011 | U033B011.vsd | 9/25/2007 1:04:26 PM | 5.0.1016 | Assumed current (its the only WPT file with the device) | <input type="checkbox"/> |
| U033B012 | U033B012.vsd | 9/25/2007 1:06:14 PM | 5.0.1016 | Assumed current (its the only WPT file with the device) | <input type="checkbox"/> |
| U033B013 | U033B013.vsd | 9/25/2007 1:08:28 PM | 5.0.1016 | Assumed current (its the only WPT file with the device) | <input type="checkbox"/> |
| U033B014 | | | | | <input type="checkbox"/> |
| U033B015 | U033B015.vsd | 9/25/2007 1:13:02 PM | 5.0.1016 | Assumed current (its the only WPT file with the device) | <input type="checkbox"/> |
| U033B016 | U033B016.vsd | 10/8/2007 3:53:12 PM | 5.0.1016 | Assumed current (its the only WPT file with the device) | <input type="checkbox"/> |
| U033B017 | U033B017.vsd | 10/8/2007 4:34:04 PM | 5.0.1016 | Assumed current (its the only WPT file with the device) | <input type="checkbox"/> |
| U033B018 | U033B018.vsd | 9/25/2007 1:20:12 PM | 5.0.1016 | Assumed current (its the only WPT file with the device) | <input type="checkbox"/> |
| U033B019 | U033B019.vsd | 9/25/2007 1:22:34 PM | 5.0.1016 | Assumed current (its the only WPT file with the device) | <input type="checkbox"/> |
| U033B020 | U033B020.vsd | 9/24/2007 5:02:28 PM | 5.0.1016 | Assumed current (its the only WPT file with the device) | <input type="checkbox"/> |
| U033B021 | U033B021.vsd | 9/25/2007 1:34:36 PM | 5.0.1016 | Assumed current (its the only WPT file with the device) | <input type="checkbox"/> |

If Software File Is Not Required

In cases where a software file is not required for a device, you can set the *Software File Is Not Required* field in the Properties tab or in the Property Sheet. Doing so changes the File Name to “n/a” and the Note to “No software file required.” This fills in the spot on the report to make it easier to find the devices that are missing their backups in the Software Files report.

Scanning Files

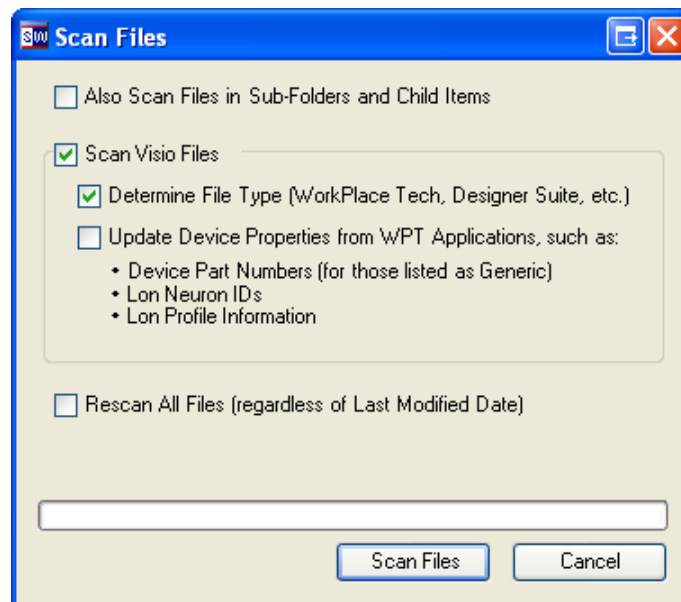
In some cases Smartware Studio can glean additional information by opening up a software file and reading some information, or *scanning* it. Doing so allows Smartware Studio to determine:

- The correct type of the file and what program (and version) is used to open and edit it (e.g. WorkPlace Tech for Visio files)
- Detailed properties, such as device addresses and point configurations.

If Smartware Studio is taking an action that requires the file to be scanned (e.g., launching WorkPlace Tech), it will be scanned automatically.

You can explicitly scan the files for a device or a set of devices:

- Right-click on a device, bus or folder that contains the devices with files you want to scan.
- Select the **TOOLS**→**SCAN FILES** command.



- If you selected a folder, bus or global controller, check the ALSO SCAN FILES IN SUB-FOLDERS AND CHILD ITEMS checkbox to include the files in child items in the scan.
- For WorkPlace Tech Visio files, you can optionally choose to have the address and other values read from the file saved to the Properties tab of the device by checking the UPDATE DEVICE PROPERTIES FROM WPT APPLICATIONS checkbox.

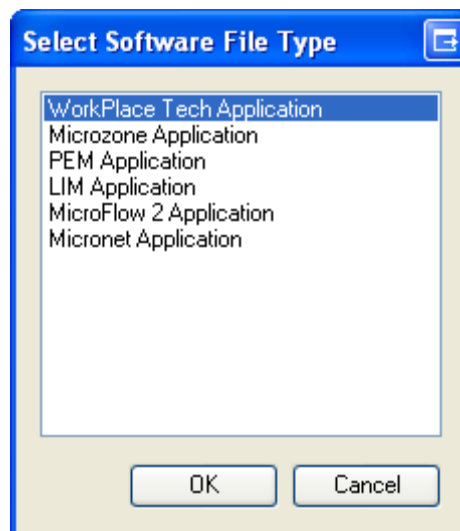
Copy Software Files to Devices

After you first create a network tree for an existing network, you will likely have a set of software files somewhere on your server, laptop or USB drive that you want to copy onto the devices. Smartware Studio includes a utility to make it easier than dragging and dropping each file one by one.

To distribute an existing set of software files among the corresponding devices on the network tree:

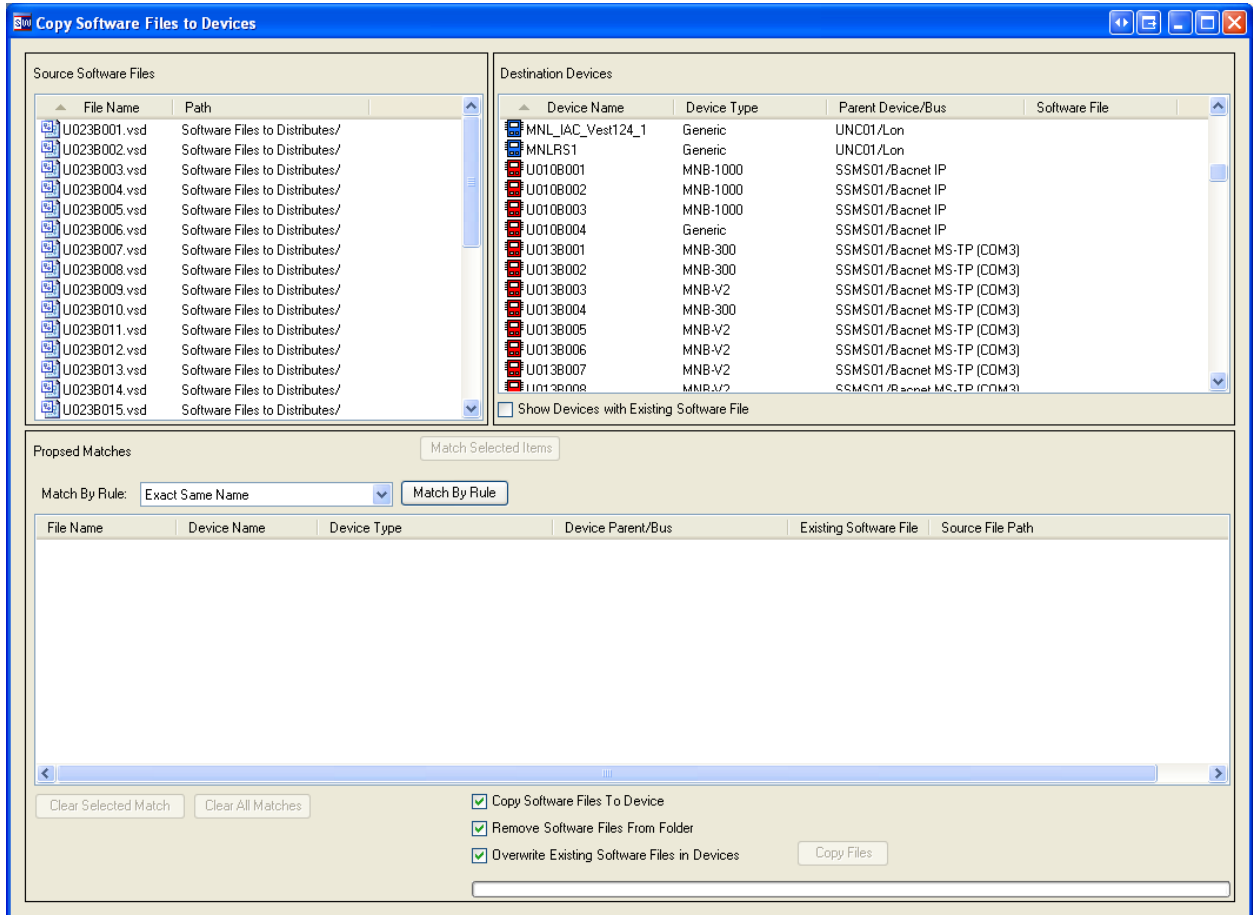
- Create a folder on the Network Tree (or Project Tree)
- Copy all the software files to distribute from the outside location into this folder.
- Right-click on the folder and select TOOLS→COPY SOFTWARE FILES TO DEVICES.

You will be prompted for the type of software files to work with. You can only work with one type at a time:



- If necessary, the files may be scanned. This might take a minute or two.

After scanning, the software files to distribute and the devices without software files are shown in two lists:



- The left list (SOURCE SOFTWARE FILES) shows all the files in the folder you selected.
- The right list (DESTINATION DEVICES) shows all the devices in the network tree that are compatible with the selected software type and that do not currently have software files.
- To include devices that may already have software files, check the SHOW DEVICES WITH EXISTING SOFTWARE FILE checkbox

The goal now is to pair up the source files with the appropriate device and then copy the files to the devices. You can pair up files in two ways:

- Select a file in the left list and a device in the right list and click the **MATCH SELECTED ITEMS** button. The new match will appear in the lower list and the selected items will be removed from the upper lists.
- Choose a rule for the **MATCH BY RULE** setting (e.g., *Exact Same Name*) and click the **MATCH BY RULE** button. All matches that can be made using the rule will appear in the lower list (and will be removed from the upper lists).

You can undo a single match by selecting it in the lower list and clicking **CLEAR SELECTED MATCH**. You can undo all the matches and start over by clicking **CLEAR ALL MATCHES**.

When all the matches have been made, choose the appropriate options and click the **COPY FILES** button. The files will be copied to the devices and optionally removed from the source folder.

Duplicating a Single Software File among Multiple Devices

Here is another common scenario:

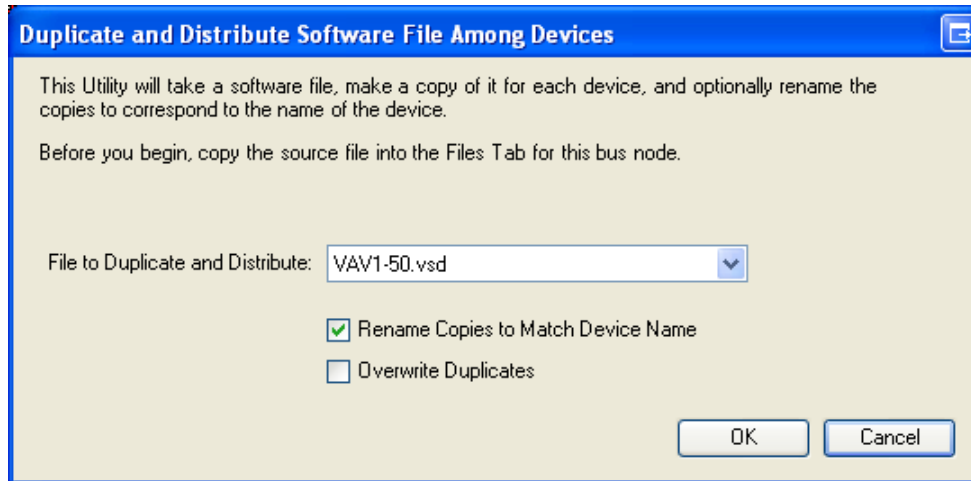
- You have a set of devices (e.g. VAV) on a bus that will all use the same software file.
- Each device needs its own copy of the source file to upload to the device, as the source will be updated and resaved with the specifics of the device address when the device is commissioned.

You therefore want to:

- Copy the source file to each device individually
- Possibly rename each copy to match the device's name.

There is a utility that will do just that. To use it:

- Copy the source file onto the Files tab for the bus that contains all the devices.
- Right-click on the bus and select the **TOOLS** → **DUPLICATE AND DISTRIBUTE SOFTWARE FILE** command.



- If there are custom versions of the software already on one or more devices, uncheck the **OVERWRITE DUPLICATES** checkbox unless you want them overwritten.

Working with WorkPlace Tech

While most files can be opened individually in their host application (e.g., double-click an Excel spreadsheet (.xls) file and it opens up in Excel), WorkPlace Tech works somewhat differently.

WorkPlace Tech uses its own Project (.wtp) file to group together a set of Applications, which are Visio (.vsd) files. The project file does not really contain any required information, it just organizes the files. Different software programmers will group their applications together in different ways, such as by function (Exhaust Fans) or by area (C Wing), that do not necessarily correspond to how Smartware Studio encourages you to organize the devices on the network tree.

The best way to store the WorkPlace Tech files in Smartware Studio is to put each individually Application (.vsd) File on the Files tab of the corresponding device in the network tree. This makes it clear and simple for software programmers and technicians to store and find the latest version of the file for each device.

To facilitate this organization, Smartware Studio allows you to open one or multiple WorkPlace Tech Application files directly from the network tree. When you do, the following occurs:

- All the relevant Application Files are downloaded from the server, if they aren't already.
- The Application Files are copied to a temporary folder.
- A WorkPlace Tech Project (.wtp) File is created from scratch for the selected Application Files.
- WorkPlace Tech is launched and told to open this temporary project.

You can then work with the applications in WorkPlace Tech as normal, editing and saving the files as needed. When you shut down WorkPlace Tech, Smartware Studio detects the shutdown and compares the files in the temporary folder to the originals on the devices on the network tree. If any files have been changed or added, they will be copied back to the appropriate devices.

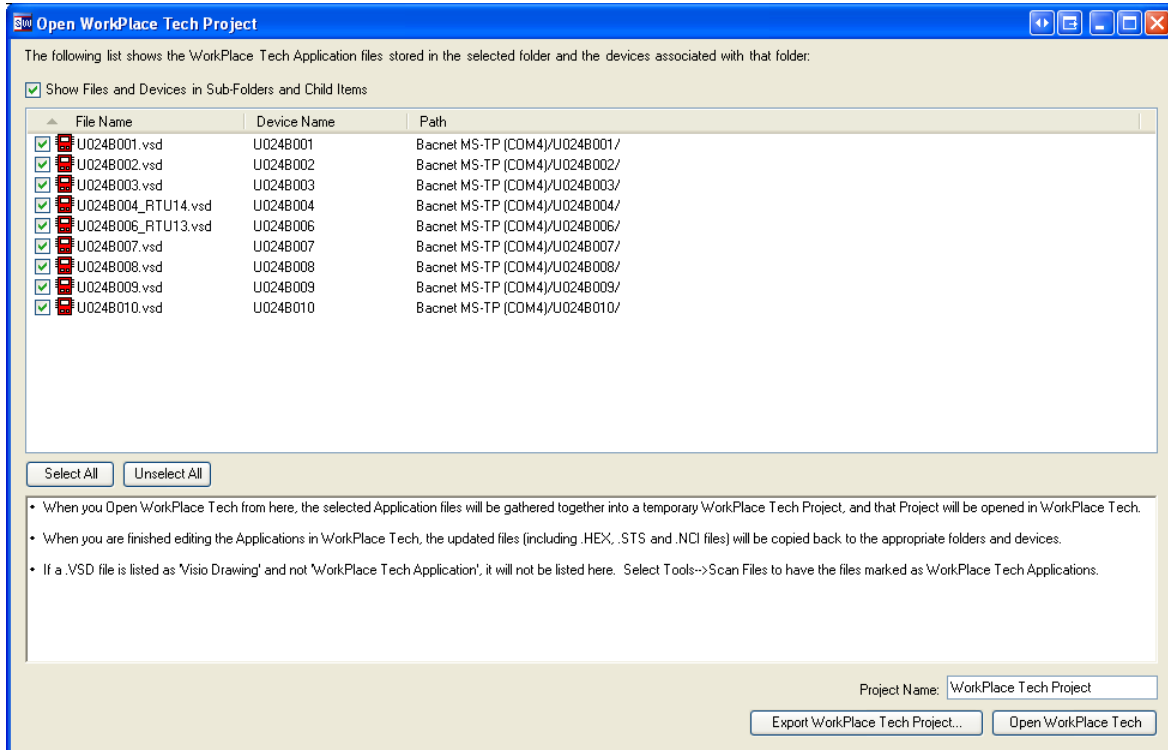
Opening WorkPlace Tech

To create and open a temporary WorkPlace Tech project with one or more Application Files, do one of the following:

- Right-click on a device, bus or folder containing devices and select the TOOLS→OPEN WORKPLACE TECH menu command.
- Double-click on a single WorkPlace Tech Application (.vsd) File in the Files tab of a device.

If there are any Visio files in any of the devices that have not been scanned, they will be scanned now to determine if they are WorkPlace Tech Application Files. Refer to the earlier section on *Scanning Files* for more detail.

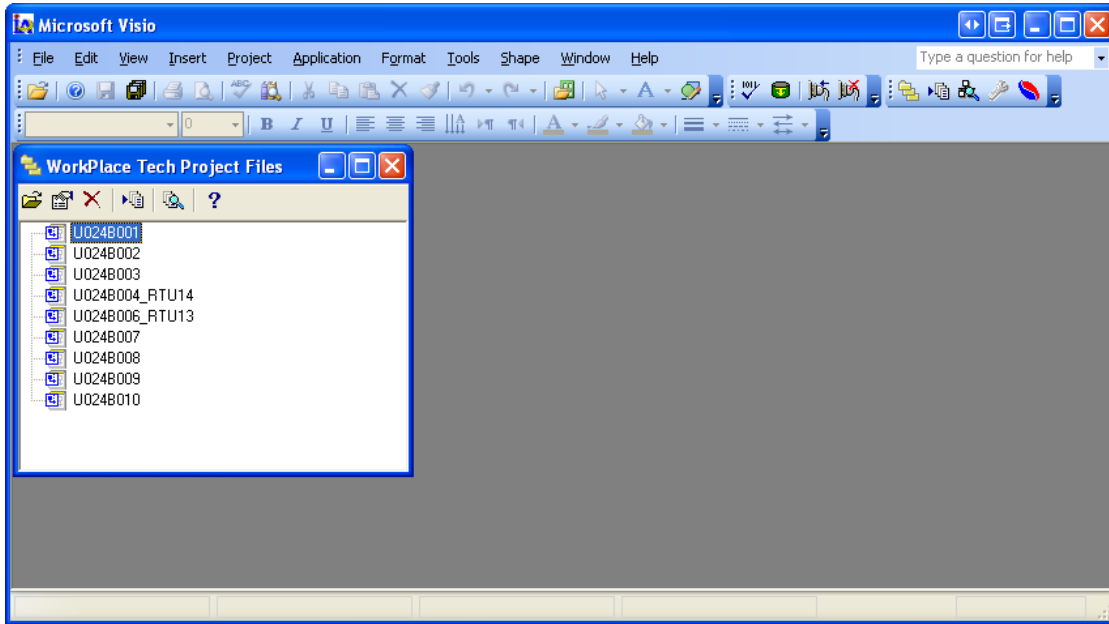
You will then be shown a list of all the devices under the selected node in the tree that have WorkPlace Tech files:



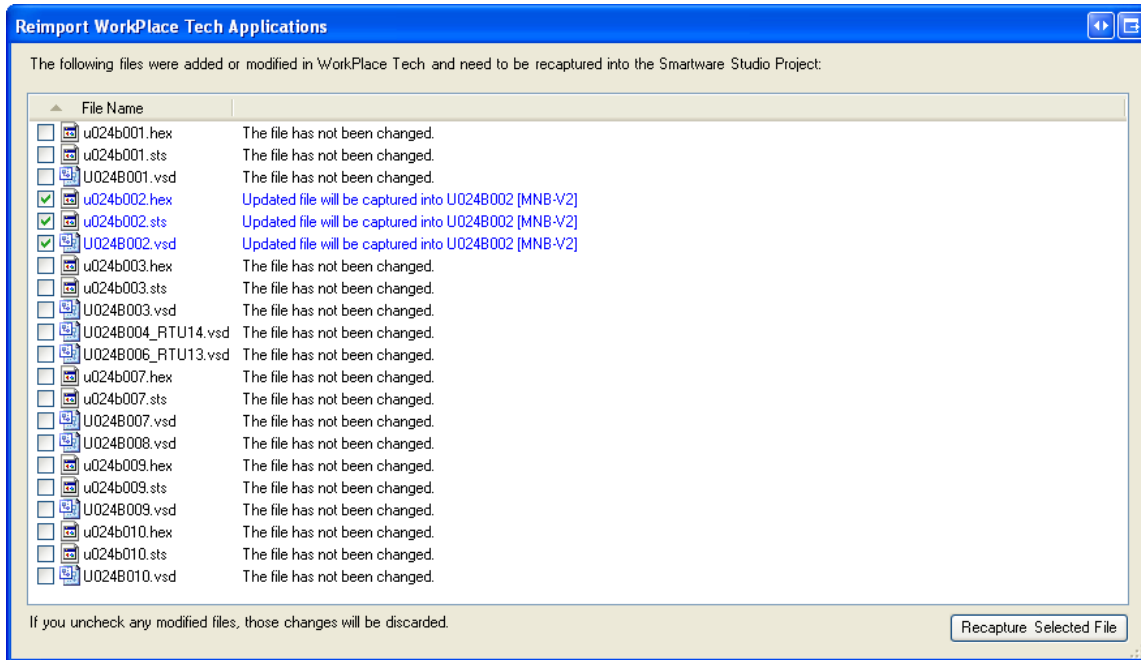
- To include any child devices in the list, check the **SHOW FILES AND DEVICES IN SUB-FOLDERS AND CHILD ITEMS** checkbox.
- You can specify a different **PROJECT NAME** as needed.

Select the files you want to be included in the WorkPlace Tech project and click the **OPEN WORKPLACE TECH** button.

WorkPlace Tech will then open with the temporary project and selected Application Files:



Leave Smartware Studio and its project open while you work with WorkPlace Tech. When you are done, shut down WorkPlace Tech as you normally do. Smartware Studio will detect the shut down and present a list of the files that have changed:



- Click the **RECAPTURE SELECTED FILES** button to copy the changed files back onto the corresponding devices in the network tree.

Creating New Application Files within WorkPlace Tech

If you create a new Application File while in WorkPlace Tech, Smartware Studio will recapture that file as well. Where it saves it depends on what part of the network tree you selected when you chose to open WorkPlace Tech.

- If you selected a bus or folder with child devices, the new file will be saved on that selected bus or folder.
- If you selected a single device or WorkPlace Tech file, it will be saved on that device.

In either case, Smartware Studio will indicate where it will be saved as it's brought back in. You will likely want to create a device node on the network tree and relocate the file to its Files tab.

Exporting the Temporary WorkPlace Tech Project

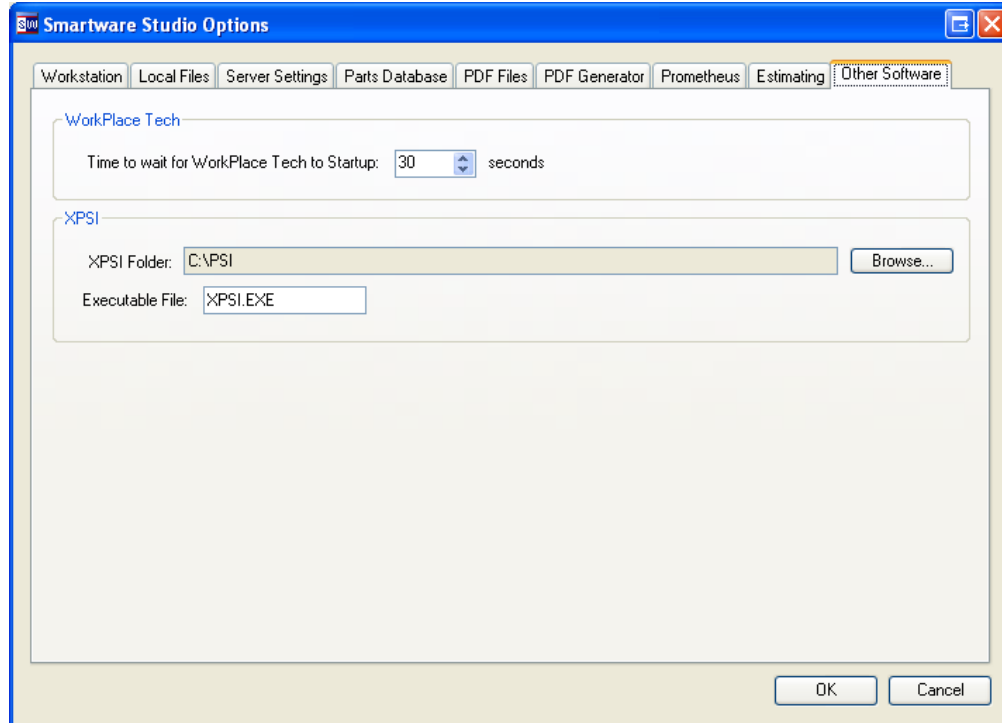
If the need arises, you can choose to export the temporary WorkPlace Tech Project and collected Application Files that Smartware Studio creates.

- From the Open WorkPlace Tech dialog, choose the Application Files and click EXPORT WORKPLACE TECH PROJECT.
- Specify the PROJECT NAME, which will also be used for the folder name.
- You will be prompted to browse to the folder in which to save the project.
- This project folder can then be copied to an external location and opened by itself without Smartware Studio.

Note: *When you export the project, Smartware Studio makes the copies but does not monitor for any changes. Any modified Application files will have to be copied back to Smartware Studio manually.*

Configuring the WorkPlace Tech Settings

By default, Smartware Studio will wait 30 seconds for WorkPlace Tech to finish its startup tasks. On slower machines this may not be enough time and you might receive error messages that direct you to the **TOOLS**→**OPTIONS** dialog and the *Other Software* tab.



- Increase the **TIME TO WAIT FOR WORKPLACE TECH TO STARTUP** value as necessary.

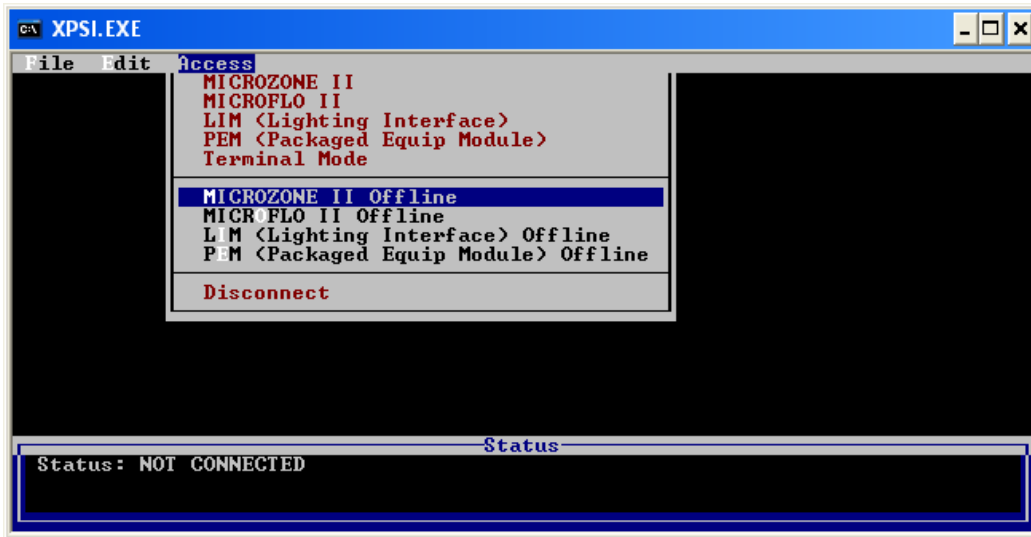
Working with XPSI

Devices in the Schneider Electric Network 8000 product line use an older DOS-based program called XPSI. While the program is often used to manipulate the software file in the controller while directly connected to it, it can also be used to edit an offline, binary version of the software file. Smartware Studio makes it easier to edit such an offline file stored with a device in the network tree.

When you double-click a Network 8000 backup file (i.e., an .MZ2 file for a MicroZone II or a .PEM file for a PEM-1), the following occurs:

- The file is copied into the appropriate sub-folder of the XPSI application folder.
- XPSI is launched

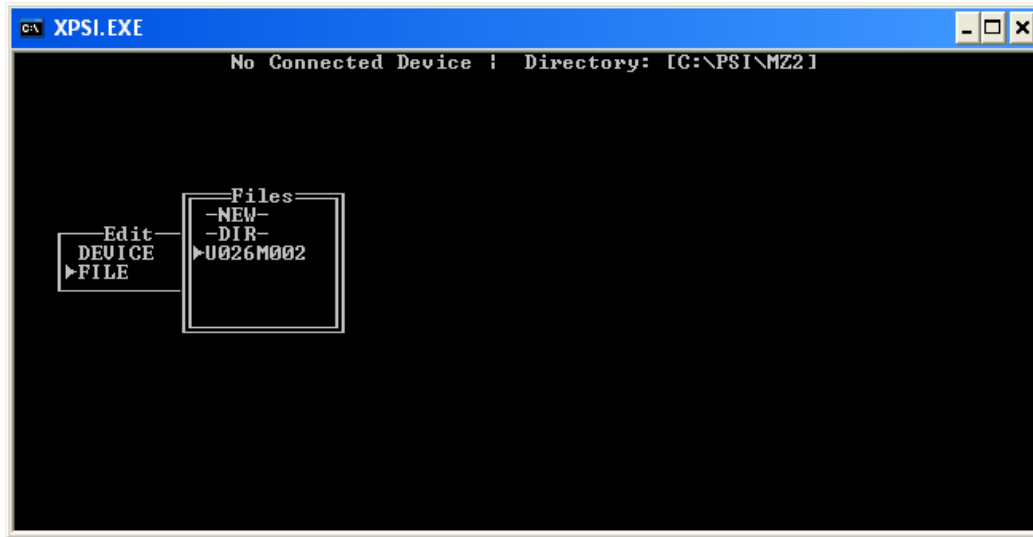
To edit the file, go to the ACCESS menu and select the appropriate OFFLINE command for the type of device (e.g. MICROZONE II OFFLINE):



From the FUNCTIONS menu, select EDIT:

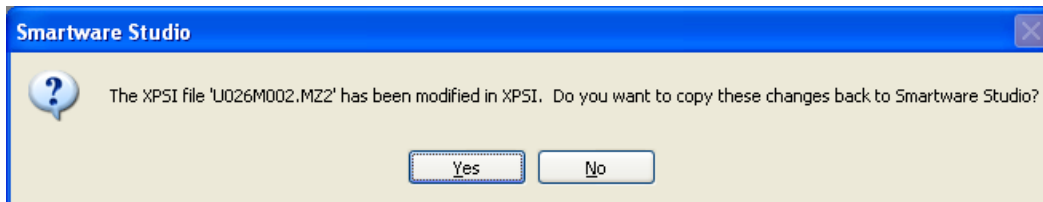


Then from the EDIT menu select FILE:



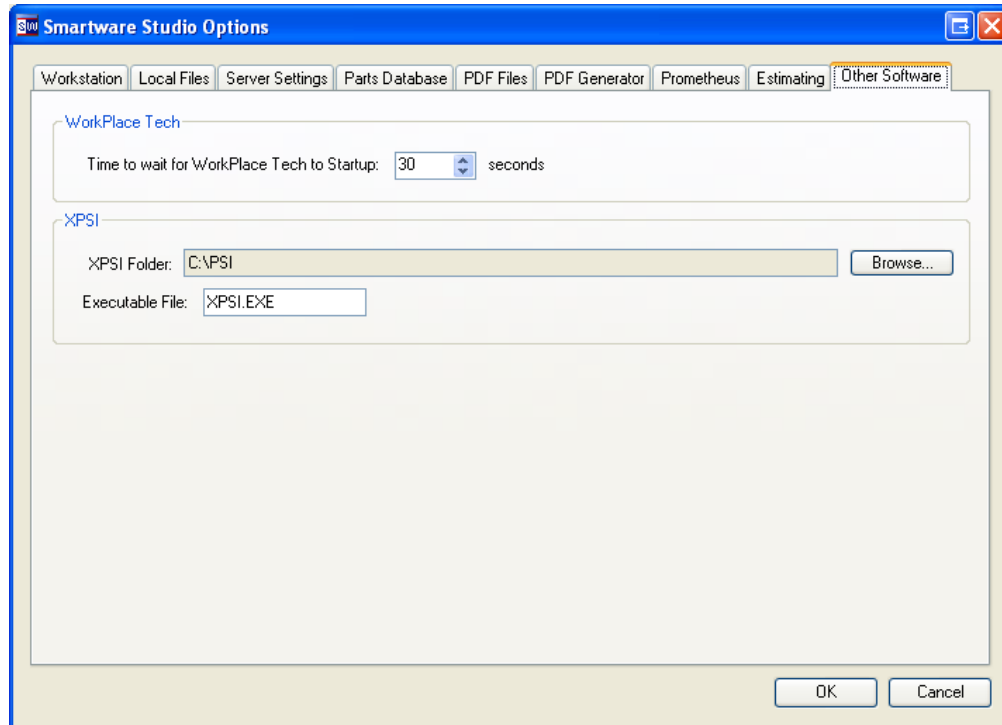
Finally, select the software file and begin editing. When you are done, save the file and exit XPSI.

If you made any changes, Smartware Studio will detect these changes and offer to copy the file back into Smartware Studio:



Configuring the XPSI Program Settings

To launch Smartware Studio, XPSI needs to know where the program is located. To modify these settings, select the **TOOLS**→**OPTIONS** menu command and go to the *Other Software* tab:



- By default Smartware Studio looks in *C:\PSI* for the application *XPSI.EXE*.

8. Network Tree Devices

There are many different types of devices in the world, and Smartware Studio models the specifics of each by providing sets of specific objects that can be added to the network tree. As described in the earlier chapter on the *Network Tree*, all devices share certain common properties and functionality, while others provide advanced and sophisticated utilities.

Most of the properties are self-explanatory and can be understood by reviewing the properties tab of the device.

This chapter will highlight the advanced features and utilities available on certain types of devices.

I/A Network 8000: GCM Devices

The Network 8000 GCM (Global Control Module) and its derivatives are designed primarily to communicate with and provide global logic to a set of field devices on its ASD bus.

On the Network Tree, the device automatically includes an ASD bus.

- Depending on the variation of the GCM, it also include an LCM bus (GCMs), a Lon bus (LNCs) or a generic third-party bus (SIMs).

An active GCM includes a database of blocks at attributes that are used by the GCM to interact with the devices on its buses. If you capture this database from a GCM, you can use the information to automatically populate the devices on its buses in the network tree. The information can also prove useful in engineering and programming situations where it would otherwise be necessary to use another program to get at the data.

Backing Up the GCM Block Database

Although a GCM can be backed up using several older tools (such as Signal or Eclipse), Smartware Studio requires that the block data be captured directly using the free *Smartware Network 8000 Communications Utility*.

- You can download the utility and the instructions on how to use it from the Smartware web site:

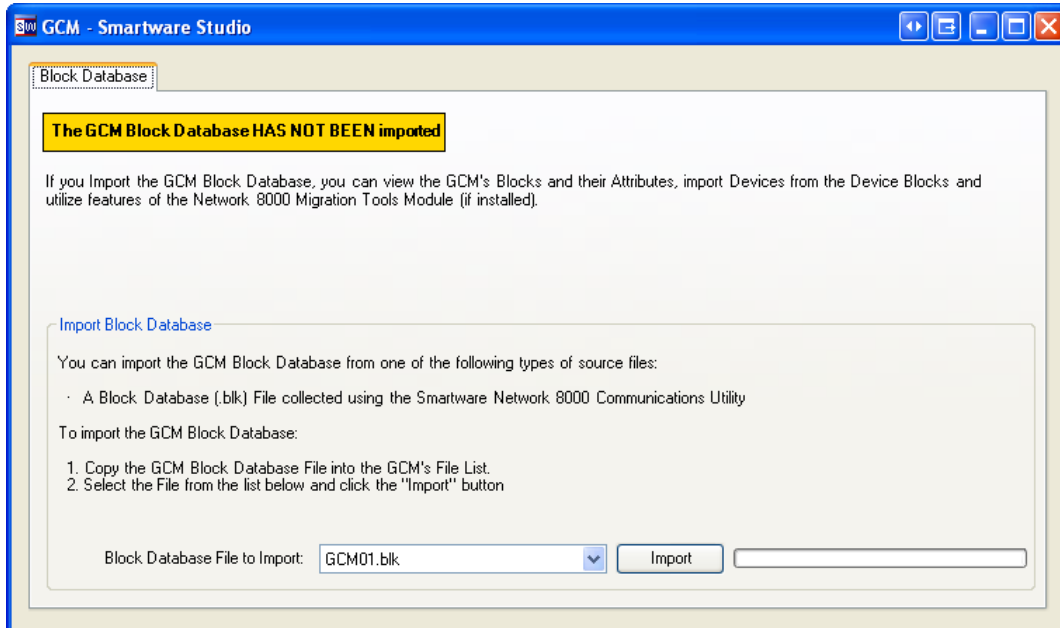
<http://www.smartwaretech.com/Nw8kConversionService.aspx>

- The resulting backup will be in a custom Block (.BLK) format.

Importing the GCM Block Database

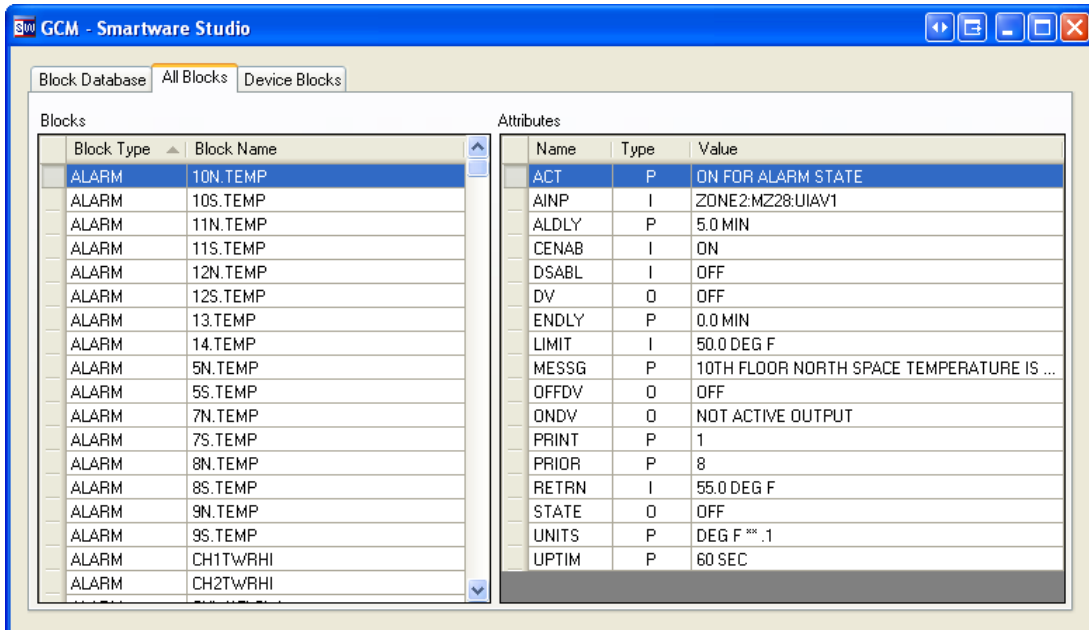
To import the block data into the GCM device:

- From the *I/A Network 8000* stencil in the toolbox, add a GCM object to the Network Tree.
- Copy the block database (.BLK file) to the Files tab of the GCM.
- Select the Blocks tab on the GCM and click the OPEN GCM BLOCK DATABASE WIZARD button.



- The .BLK file name should appear in the BLOCK DATABASE FILE TO IMPORT list. Click the IMPORT button.

- The LOAD BLOCK DATA button should appear. Click it to load the block database onto two additional tabs: *All Blocks* and *Device Blocks*.

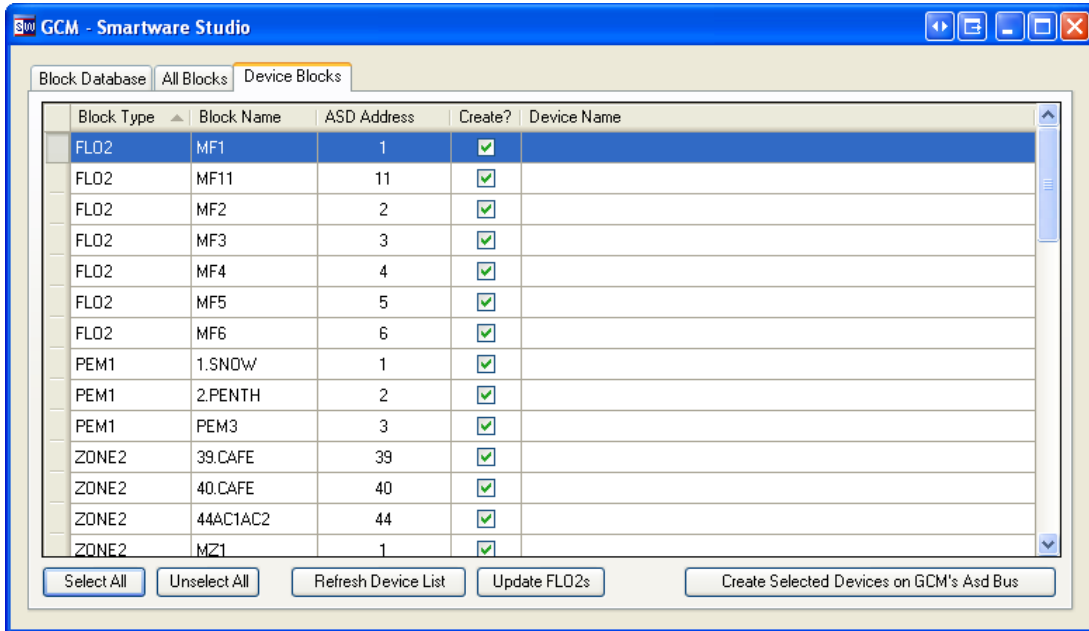


- The *Network Number* and *GCM Number* properties will be filled in on the GCM's Network tab.
- The *All Blocks* tab shows a list of all the blocks in the GCM. As you select a block, the Attributes list on the right side will update to show the values of the inputs, outputs and parameters of the block.

Automatically Building the Network Tree from the GCM Database

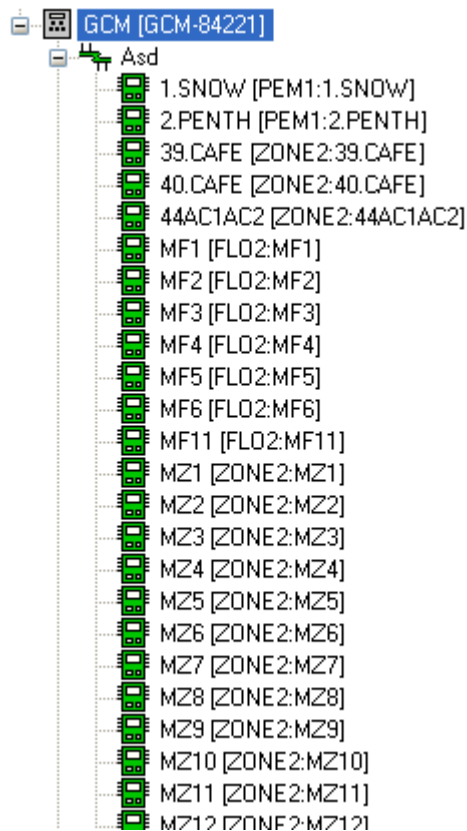
Once imported, you can use the block information in the GCM to populate the devices beneath it on the Network Tree.

- Select the *Device Blocks* tab. A list of the blocks that represent devices (e.g. ZONE2, PEM1, FLO2, LIM and SIM) will be shown with their ASD Address.



- Select the devices to import. In most cases, you will want to **SELECT ALL**.

- Click THE CREATE SELECTED DEVICES ON GCM'S ASD BUS button. The devices will be created on the GCM's *Asd* bus.



LNC Devices

An LNC (LON Network Controller) Device is a GCM that also has a *Lon* bus. Lon devices are represented by SIM blocks, which contain certain amount of information about how the inputs and outputs are mapped to the Network Variables (NVs) of the devices. The block database does not, however, contain information about the Lon Profile and SNVT types.

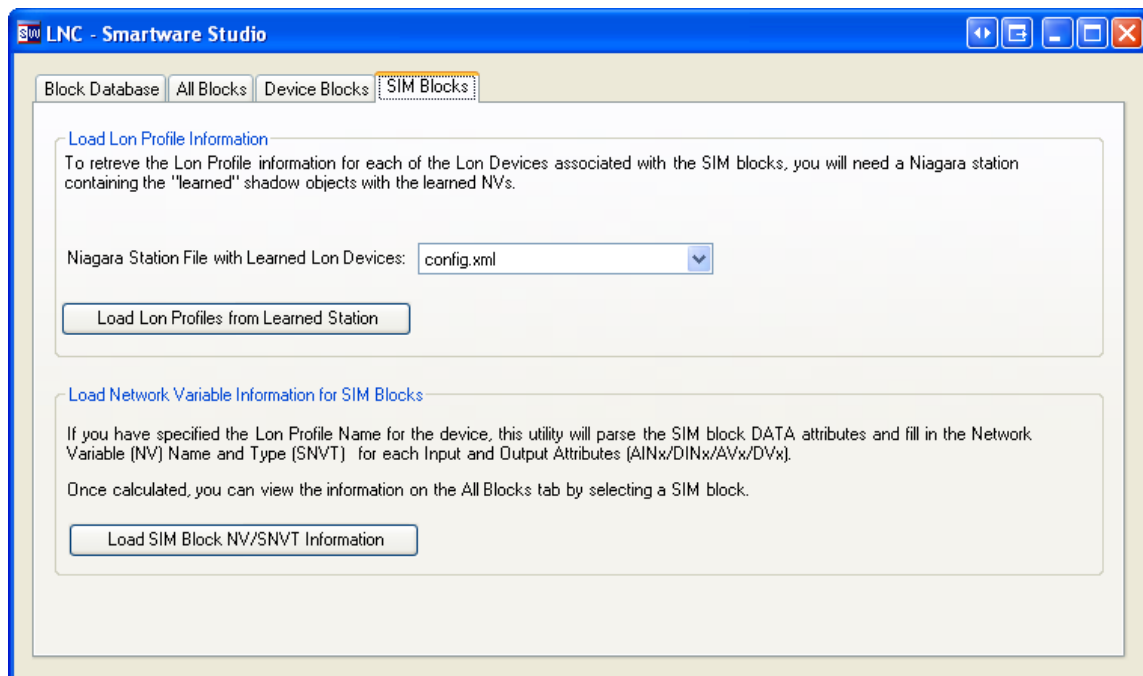
- You can import the block database and populate the Network Tree in the same way as a regular GCM. In fact, if there are SIM blocks in the database you will be warned that you must use the LNC device object instead of the GCM.
- Once imported, the *Device Blocks* tab will show the *Lon Subnet ID* and *Node ID* for each SIM device.

If you want to import additional information about the profiles and SNVTs, you can use WorkPlace Pro to create a Niagara R2 station from the Lon bus and import that as well. This temporary station will include the shadow objects for the Lon Devices.

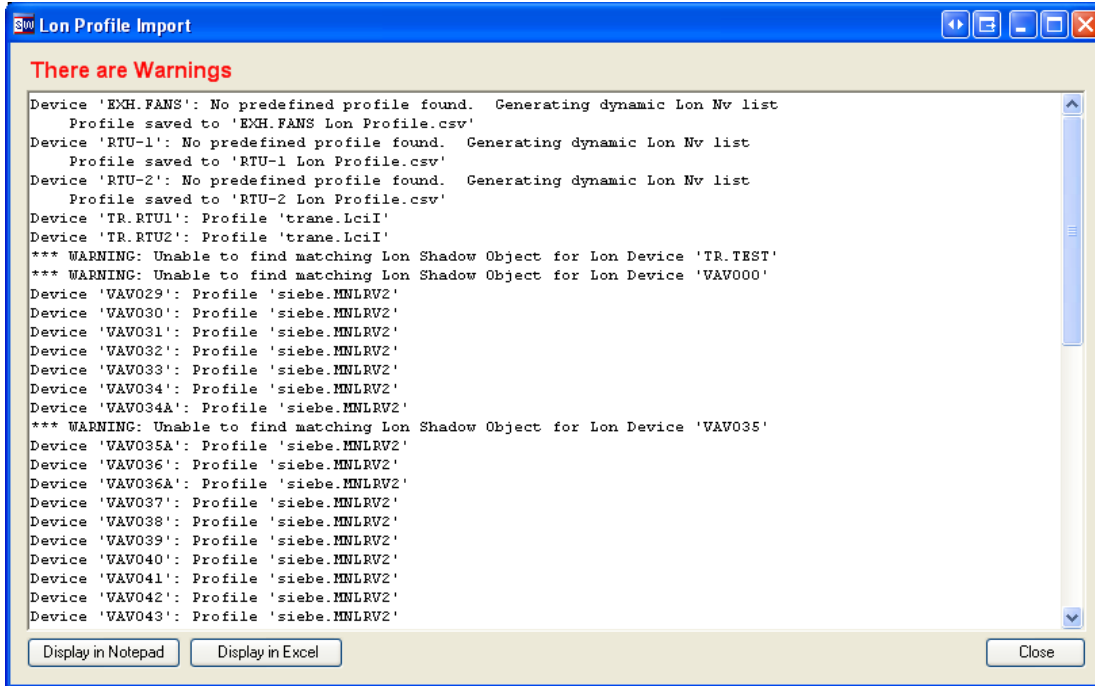
To generate the temporary station, follow this generate procedure:

- Disconnect the Lon bus from the LNC.
- Connect the Lon bus to a laptop running WorkPlace Pro.
- Use the *LonDeviceManager* in the *LonWorksService* to "learn" a station that contains a shadow object for all the Lon Devices. You must also learn all the Network Variables. Refer to the *Niagara LonWorks Integration Guide* for more information.
- Save the generated station as a *config.xml* file.

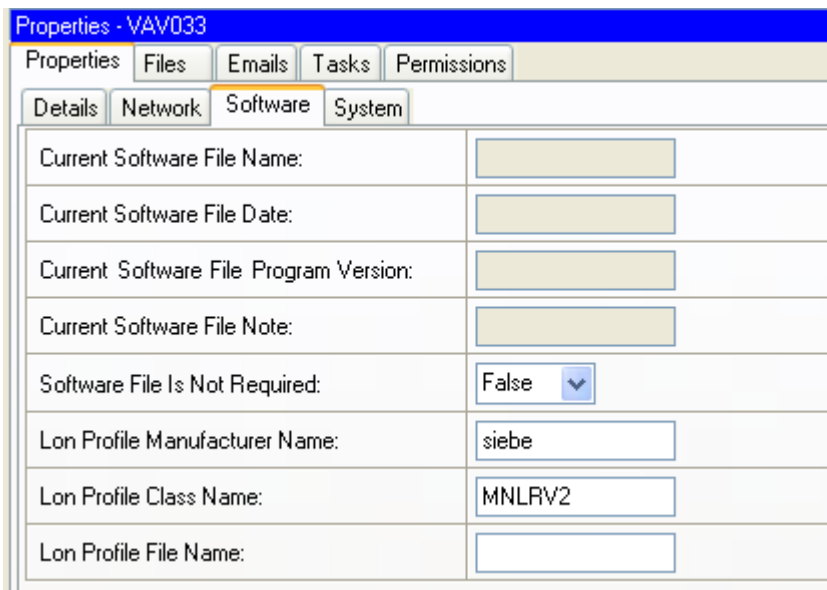
Copy the *config.xml* file to the LNC's File tab and open up the LNC Block Database Wizard. The LNC contains a separate tab named *SIM Blocks*.



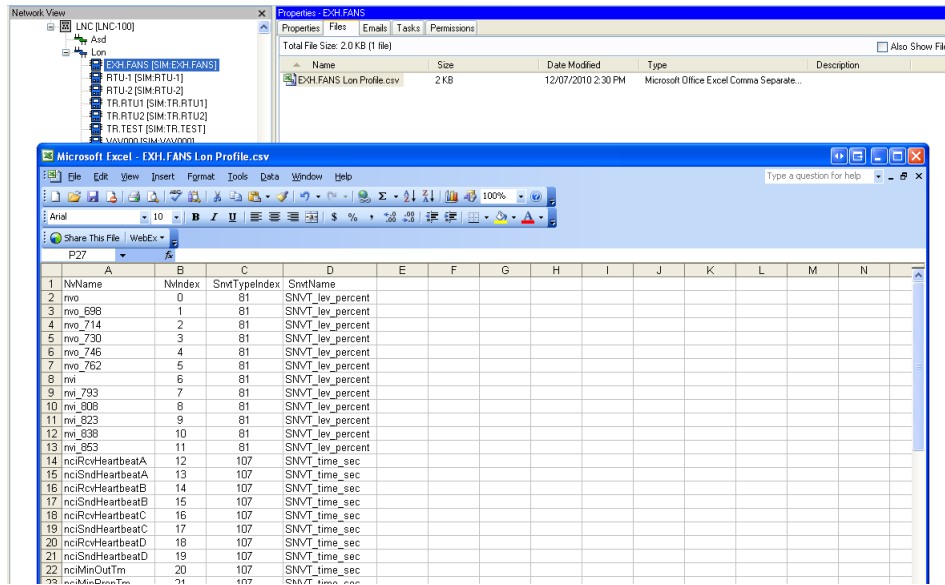
Click the LOAD LON PROFILES FROM LEARNED STATION button. Smartware Studio will match up the shadow objects in the *config.xml* file with the devices in the network tree based on the *Lon Node IDs* and extract the profile and SNVT information. Any exceptions or missing information will be reported:



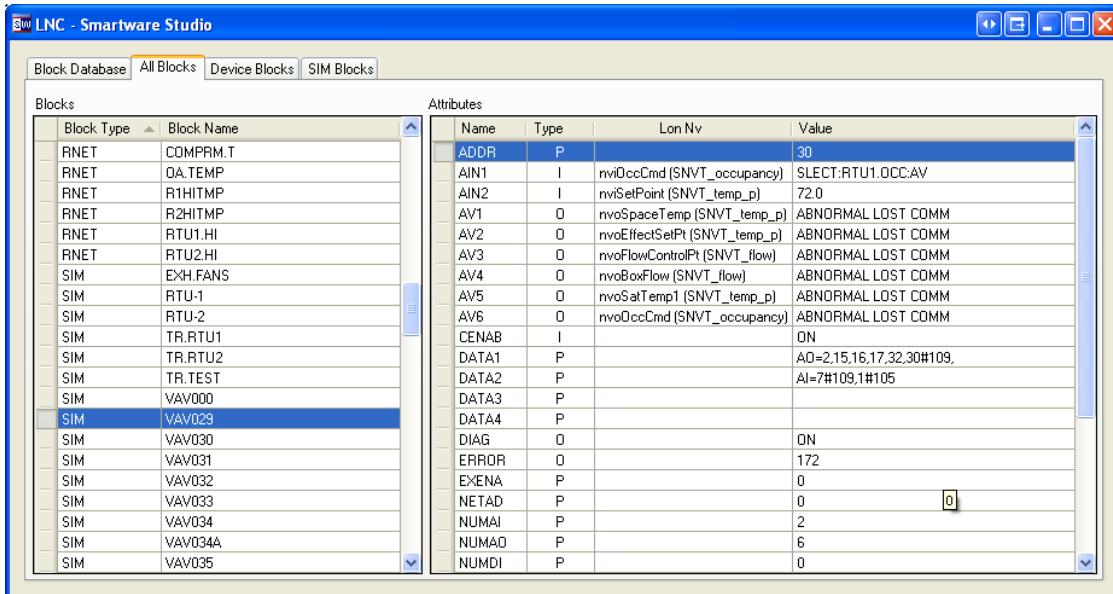
- If a shadow object is not found, it often represents a device that has been decommissioned in the field but not removed from the LNC.
- For *LonMark* devices, the profile is extracted and will be available on the Software tab of the device.



- For LonWorks devices without a profile, the SNVT information is gathered into a text file name *[Device] Lon Profile.csv* that is stored on the device.



After loading the profile information, click the **LOAD SIM BLOCK NV/SNVT INFORMATION** button to load the profile information into the devices for viewing. Go to the **All Blocks** tab and select a SIM block. The attributes that map to NVs will show their name and type.



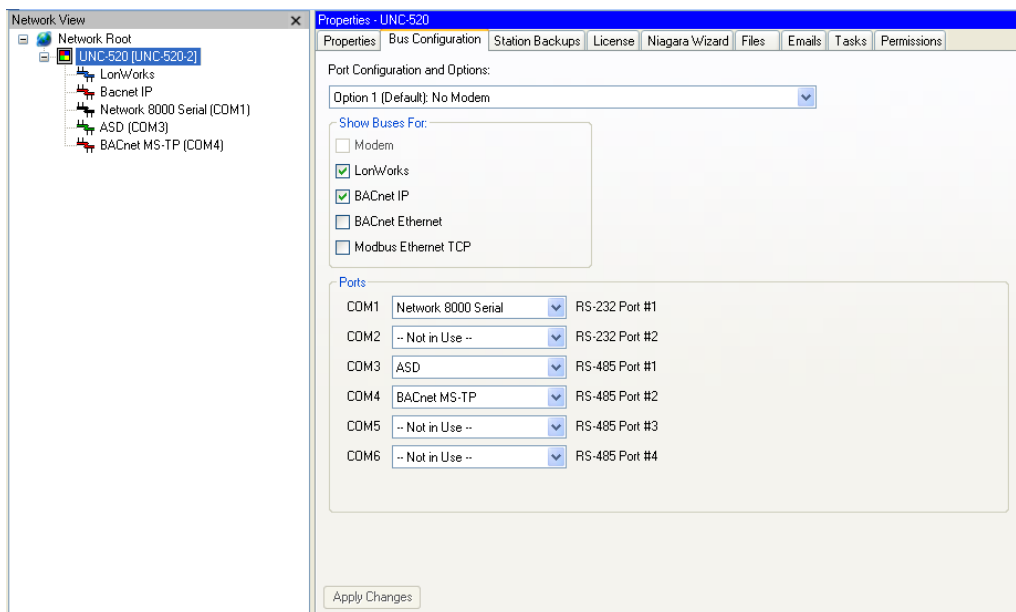
Niagara R2 Devices

There are a number of additional properties, tools and utilities associated with the Niagara R2 Devices, including:

- Bus Configuration
- Station Backups and Conversions
- License Properties
- View Station Tree
- Import and Resynch Devices

Bus Configuration Tab

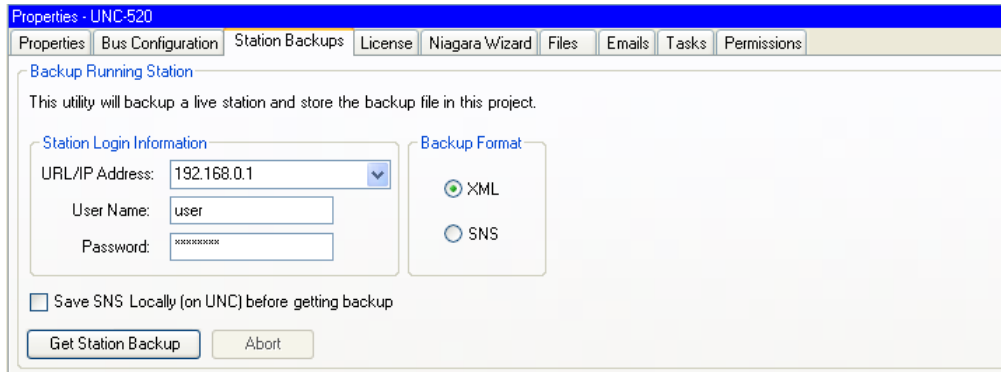
The *Bus Configuration* tab allows you to select the options (depending on the model of the UNC/JACE) and configurations of the communication ports. Doing so causes the appropriate buses to appear on the UNC device in the Network Tree.



Backing Up a Stations

If the Niagara device is accessible over your network and it has the *WebUI* service installed, you can use Smartware Studio to back it up directly.

Select the *Station Backups* tab:

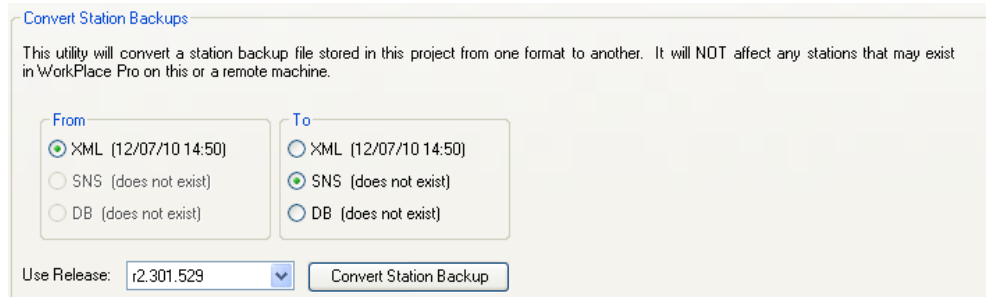


- If not already specified in the device’s properties, fill in the IP ADDRESS of the device, along with the USER NAME and PASSWORD of the station.
- Select the download format: XML or SNS.
- Optionally check the SAVE SNS LOCALLY (ON UNC) BEFORE GETTING BACKUP checkbox.
- Click the GET STATION BACKUP button. The backup will download and be saved as *config.xml* or *config.sns* on the device’s Files tab.

Converting a Station Backup to a Different Format

If *WorkPlace Pro* is installed on the same workstation, you can use the *Convert Station Backups* utility to convert the downloaded backup from one format to another. This utility directly accesses the *WorkPlace Pro* Admin tool, but saves the effort of copying the backup to and from the *Niagara* folder on your workstation.

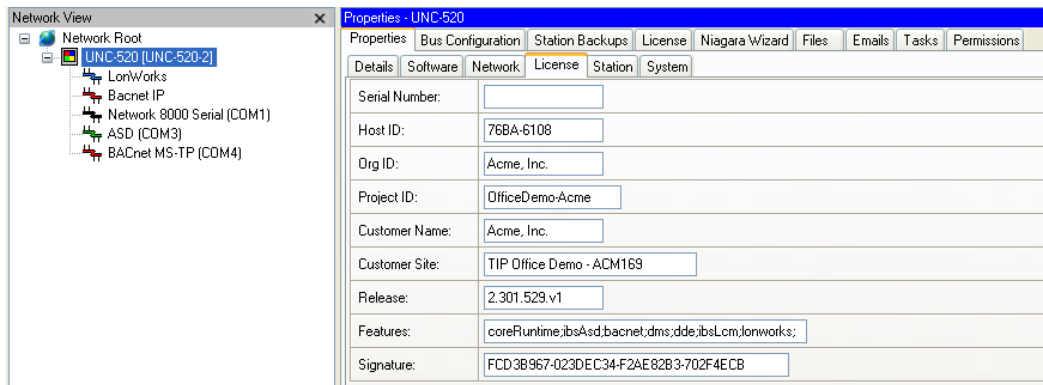
Select the *Station Backups* tab to view the *Convert Station Backups* section:



- You can only convert files that are currently on the device's Files tab. The converted file will be saved there as well.
- You can only convert using versions of Niagara that are installed on your workstation.

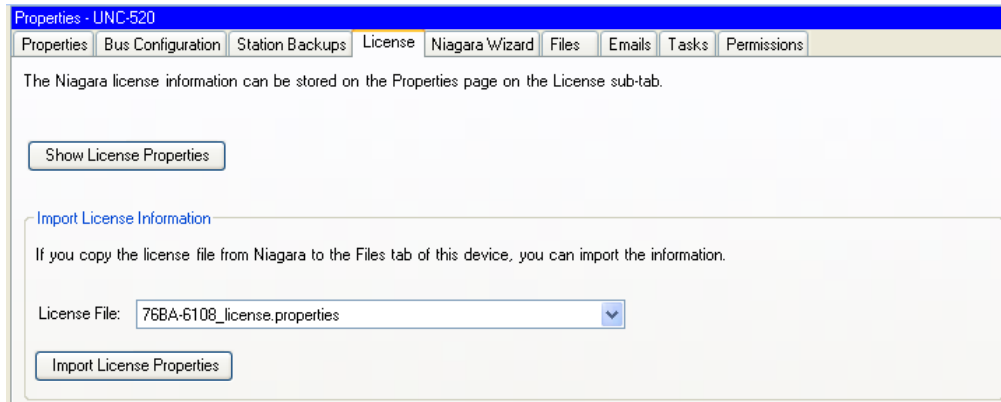
License Properties

For reference purposes it may be useful to store the License Properties of a Niagara device on the Network Tree. These values are available on a separate Properties tabs:



You can import these values directly from the license file.

- Copy the license file to the Files tab of the device.
- Select the *License* tab from the top-level list of tabs.

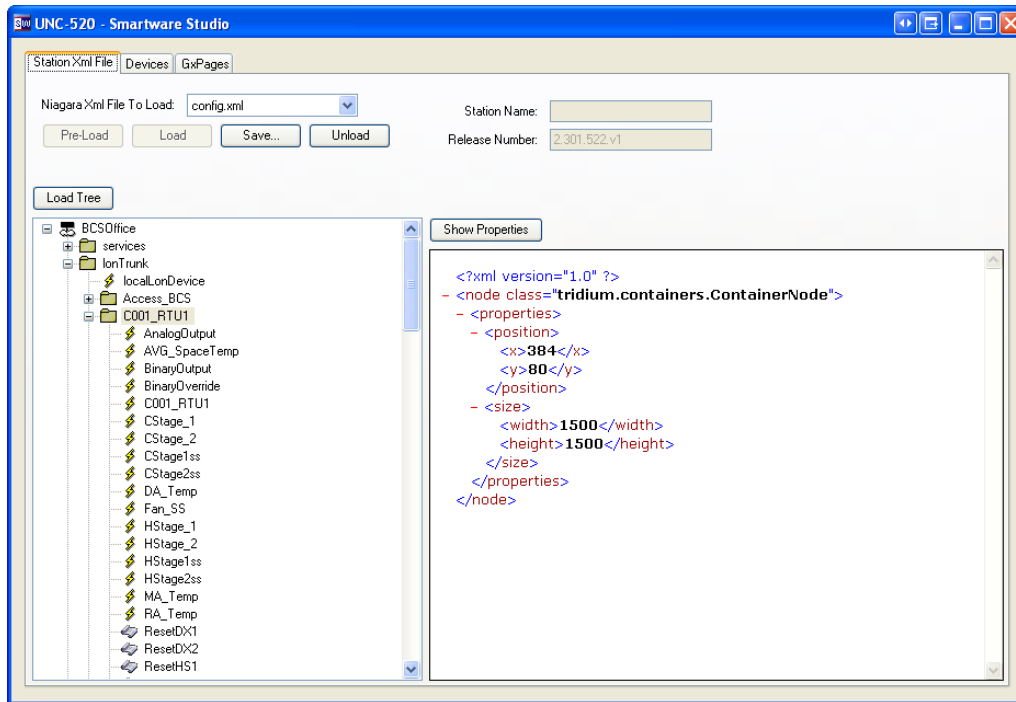


- Click the **IMPORT LICENSE PROPERTIES** button.

View Station Tree

Once you have a backup of the station in the XML format (*config.xml*), you can use this view this data and use it help build the Network Tree.

- Use the *Backup Utility* or otherwise get the *config.xml* file onto the devices Files tab.
- From the *Niagara Wizard* tab, click the OPEN NIAGARA STATION WIZARD button.
- Click the LOAD button, and then click LOAD TREE.



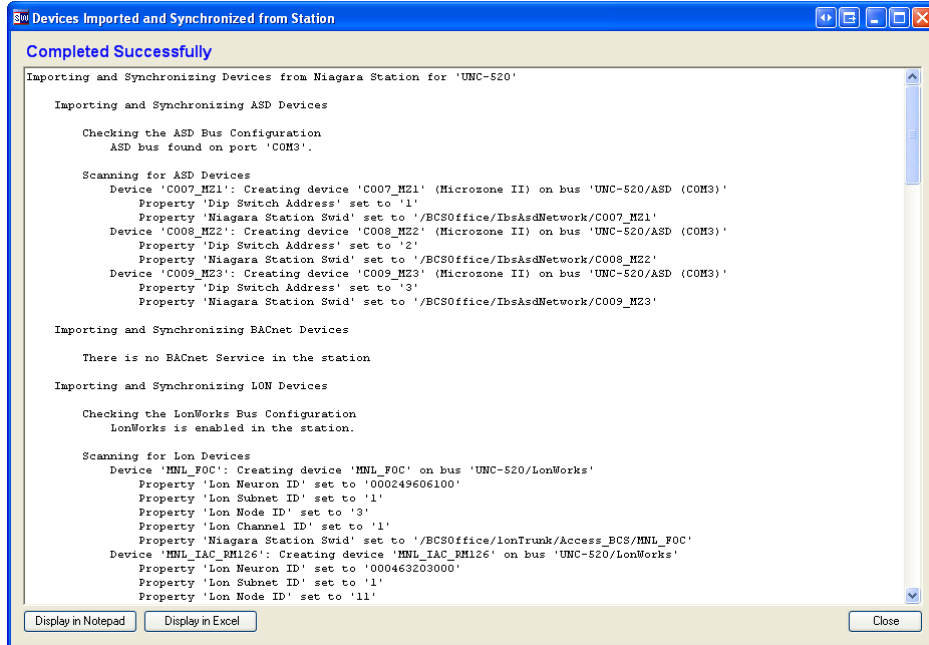
- This is a read-only view of the station backup.

Import and Resynch Devices

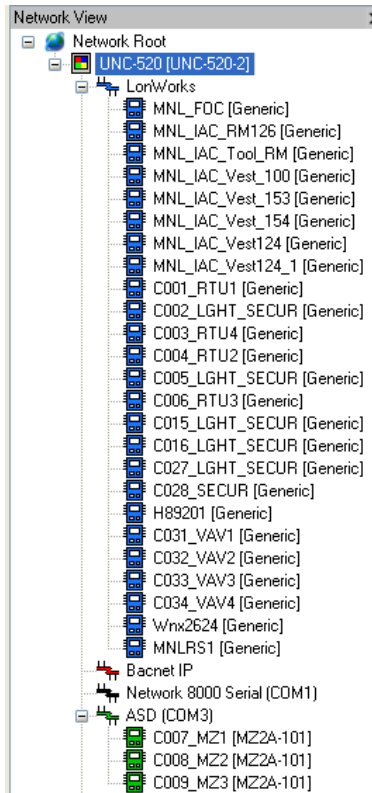
The most powerful use of the station backup is to use the data to add the devices to the Network Tree.

- Use the *Backup Utility* or otherwise get the *config.xml* file onto the devices Files tab.
- From the *Niagara Wizard* tab, click the OPEN NIAGARA STATION WIZARD button.
- Click the LOAD button.
- Go to the Devices tab and click IMPORT AND RESYNCH DEVICES.

The output window will indicate what devices were found on the *Asd*, *Lon* and *BACnet* buses:



The devices will appear on the appropriate buses on the network tree:



PC Network

The PC Network stencil contains shapes for modeling the portion of a network dedicated to servers (file, web, mail, etc.) and workstations, along with the associated internet routing equipment.

The stencil contains shapes for a variety of devices:

| | |
|-----------------|---|
| Computers | <i>Workstation, Server, Laptop</i> |
| Peripherals | <i>Printer/Fax/Copier, Modem, External Storage Device, VOIP Phone</i> |
| Routing Devices | <i>Ethernet Router, Firewall, Wi-Fi Access Point</i> |
| Remote Devices | <i>Software Remote Connection</i> |

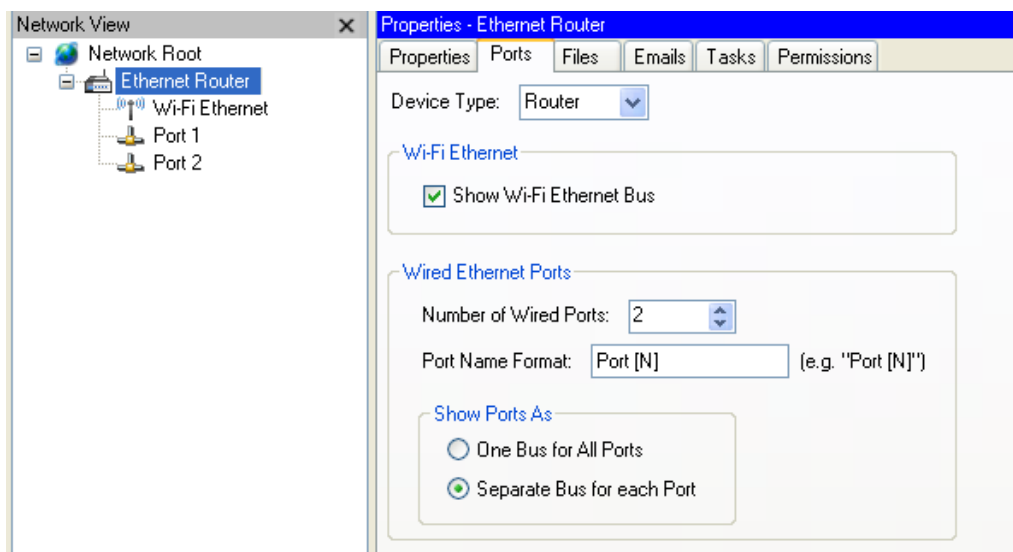
The various devices have different buses:

Ethernet, Usb, Serial Port, Parallel Port

The Ethernet Router

There are a number of different types of Ethernet routing devices, including switches and hubs. The *Ethernet Router* shape is used to represent most of them.

You can adjust the shape to represent a variety of port configurations. The *Ports* tab shows these properties:



- Select the appropriate options to make one or more buses show on the router.
- You can rename the Router or any of the buses to better describe the devices and connections.

Remote Connection

The Remote Connection object is useful for storing the addresses, passwords and files needed to create a VPN or other type of remote connection to an external system.

The screenshot displays the 'Properties - Remote Connection' dialog box in Smartware Studio. The left pane shows a network tree with 'Remote Connection' selected under 'Ethernet Router'. The right pane is divided into tabs: 'Properties', 'Files', 'Emails', 'Tasks', and 'Permissions'. The 'Network' tab is active, showing the following configuration fields:

| | |
|--------------------------------|--------------------|
| Connection Type: | VPN |
| VPN Client: | |
| Public Ethernet Address | |
| Public Host Name: | vpn.customer.com |
| Public DHCP: | False |
| Public IP Address: | 111 . 22 . 33 . 44 |
| Public Port Number: | 0 |
| Public Subnet Mask: | |
| Public Default Gateway: | |
| Other Information: | |
| Compatible Applications | |
| Remote Desktop: | True |
| PC Anywhere: | False |
| Internet Explorer: | False |
| XPSI: | False |
| Terminal: | False |
| WorkPlace Pro: | True |
| WorkPlace Tech: | False |
| Niagara Tunneling: | True |