
Pro/ENGINEER to/from SolidWorks Data Translator User's Guide

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Elysium Inc.

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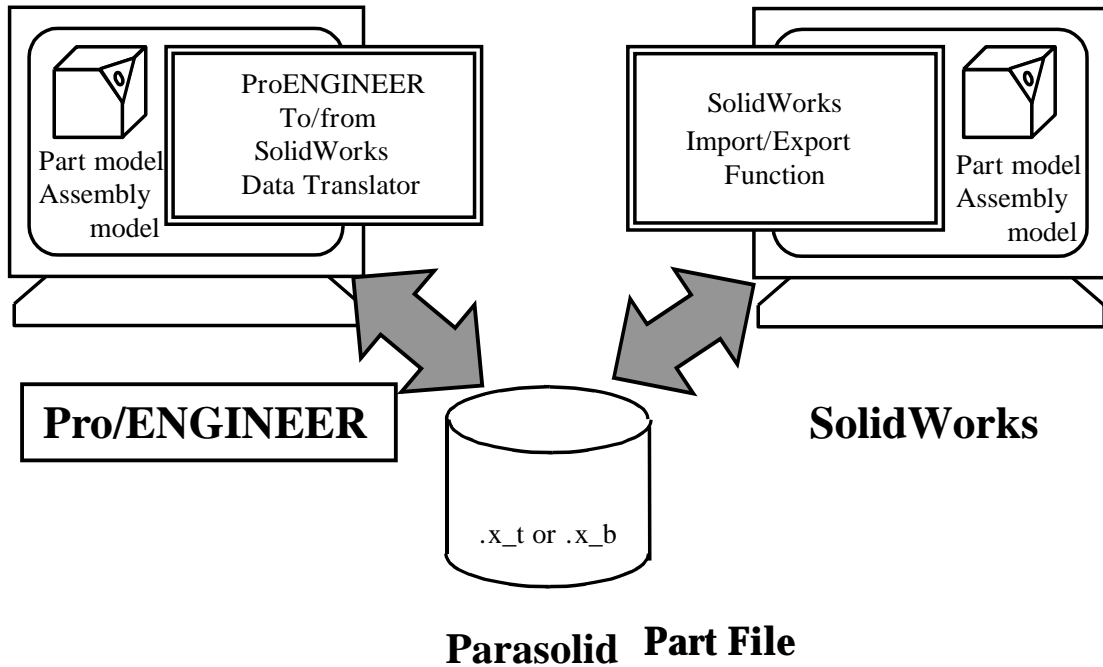
About this manual

This manual describes how to install and run the Elysium ProSW translator. It was written for both system administrators and end-users, although the installation instructions require some familiarity with basic Unix or NT systems administrations tasks and general networking concepts.

For more information about installing, configuring, and running the Elysium License Server software, see the Elysium License Server User's Guide.

About ProSW

Elysium ProSW is an application used to translate Pro/ENGINEER solid models into Parasolid files (.xmt files). ProSW runs as a Pro/ENGINEER application, so you need to have Pro/ENGINEER installed and properly licensed in order to use the ProSW translator.



Getting started with ProSW

Requirements

ProSW is supported on the following platforms:

HP-RISC/HP-UX

SGI/Irix

IBM/AIX

Sun SPARC/Solaris

Windows NT (Intel)

Pro/ENGINEER version 2000i or 2000i², with manufacturing code 1999390 or later. Versions with earlier manufacturing codes may import data inconsistently. The Pro/ENGINEER manufacturing code is printed on the Pro/ENGINEER CD. Alternatively, you can check the manufacturing code while running Pro/E by opening the Help->About Pro/ENGINEER window.

SolidWorks 2000, 2001

Information about SolidWorks to Pro/ENGINEER translation

Units

ProSW uses millimeters (mm) as the default units.

Accuracy

Generally, ProSW maintains a geometric accuracy of 0.01 mm. However, if Pro/ENGINEER's accuracy lower bound is greater than 0.01, the model is translated using that accuracy lower bound. Pro/ENGINEER's accuracy lower bound is given by the following formula:

$$\text{model_size} * \text{accuracy_lower_bound}$$

where model_size is the length of a diagonal of the bounding box associated with the solid model.

ProSW uses a default value of 0.0001 for accuracy lower bound tolerance. You can change that value by setting the appropriate parameter in the Pro/ENGINEER configuration file. The valid range is 0.0001 to 0.000001.

For example, if the model_size is 1 m, the default accuracy lower bound is 0.1 mm (1000 * 0.0001). If you set the accuracy lower bound tolerance to 0.000001, the accuracy lower bound is 0.001 mm.

Installing license server files

The Elysium license server manages the various software licenses to Elysium products. The client-server architecture allows you to run Elysium products on different machines on your network, subject to the number and type of licenses for a particular product, expiration dates, and so on.

Although you do not need to have the license server running in order to install ProSW, you will need to have it running in order to use ProSW to perform translations. You will also need a valid ProSW license password.

For instructions to install and configure the Elysium license server software, see the Elysium License Server User's Guide.

General installation notes

The installation process for both Unix and Windows NT platforms involves copying files from the installation media (CD) to your hard drive

Installing ProSW files on a Unix system

1. Mount the CD-ROM.

Hints for using the CD on Unix platforms:

On HP-UX systems use

```
mount -F cdfs -o cdcase,ro /dev/dsk/c1t2d0 /cdrom
```

The "/dev/dsk/..." will depend on your hardware configuration.

For AIX, use

```
mount -v'cdrfs' -f'' -r'' /dev/cd0 /cdrom
```

Recent versions of Solaris and IRIX will automatically mount a CD, provided your Volume Management daemon (vold) is running properly.

2. Create a directory to install the ProSW files.
3. Change directory into the ProSW installation directory.

You will need to run the installation script in the directory you create in Step 2, as the script creates subdirectories and installs the files into the current directory when it is executed.

4. Run the install script.

You'll need to supply the following information to the installation script: the installation or target directory; the source directory, i.e., the CD filesystem; the product number of the ProSW translator; the version of Pro/ENGINEER you have; the license server hostname; the license client/server port number.

How you start the installation script depends on the particular Unix platform you're running.

HP-UX: `cd_mnt_dir/INSTALL/SETUP\;1`

IRIX: `cd_mnt_dir/install/setup`

AIX: `cd_mnt_dir/install/setup`

Solaris: `cd_mnt_dir/cdrom0/install/setup`

Where `cd_mnt_dir` is the path to the directory where you mounted the CDROM. Follow the instructions given by the installation script to install ProSW.

5. Verifying the installation

You can compare your installation with the one shown below

config.pro					
elys.ver					
protk<ProE_version>.dat					
pro	el_pall_hist				
	el_psec_info				
	protk<ProE_version>.dat				
SHIPnumber	proe_export	<ProE_version>	<platform>	adeKernel.exe	
				proe2nut.exe	
				nut2sw.exe	
				pronutenv.txt	
				protk.dat	
				prodlist.txt	
	text_pronut	text	From elysium.txt		
			To to_ev3d.txt		
	proe_import	<ProE_version>	<platform>	adeKernel.exe	
				nut2proe.exe	
				sw2nut.exe	
				pronutenv.txt	
text_nutpro		text	elysmg.txt		
			ntprmsg.txt		
menus	topro_opt.mnu				

Completing the installation on a UNIX system

You'll need to copy the `protk.dat` file (renamed from `protkproe_ver.dat`) and the `config.pro` file to the directory where ProE is started in order for ProE to recognize the ProSW translator. If files by those names already exist in your ProE start-up directory, merge the contents of the files created during the installation, above, into the existing files. Where,

`INSTALLDIR` is the location of the installation directory.

`SHIPnumber` is the ship number of the installation CD.

`<proe_version>` is the version of ProE, such as 2000i or 2000i2, that you have installed.

`<platform>` is the UNIX version, such as sun or aix.

The file will contain the following information,

```

NAME          From_ProE_SHIPnumber
EXEC_FILE     INSTALLDIR\SHIPnumber\proe_export\<proe_version>\
<platform>\pro2nut.exe
TEXT_DIR     INSTALLDIR\SHIPnumber\proe_export\text_pronut
REVISION      23
END
NAME          To_ProE_SHIPnumber
EXEC_FILE     INSTALLDIR\SHIPnumber\proe_import\<proe_version>/
<platform>\nut2pro.exe
TEXT_DIR     INSTALLDIR\SHIPnumber\proe_import\text_nutpro
REVISION      23
END

```

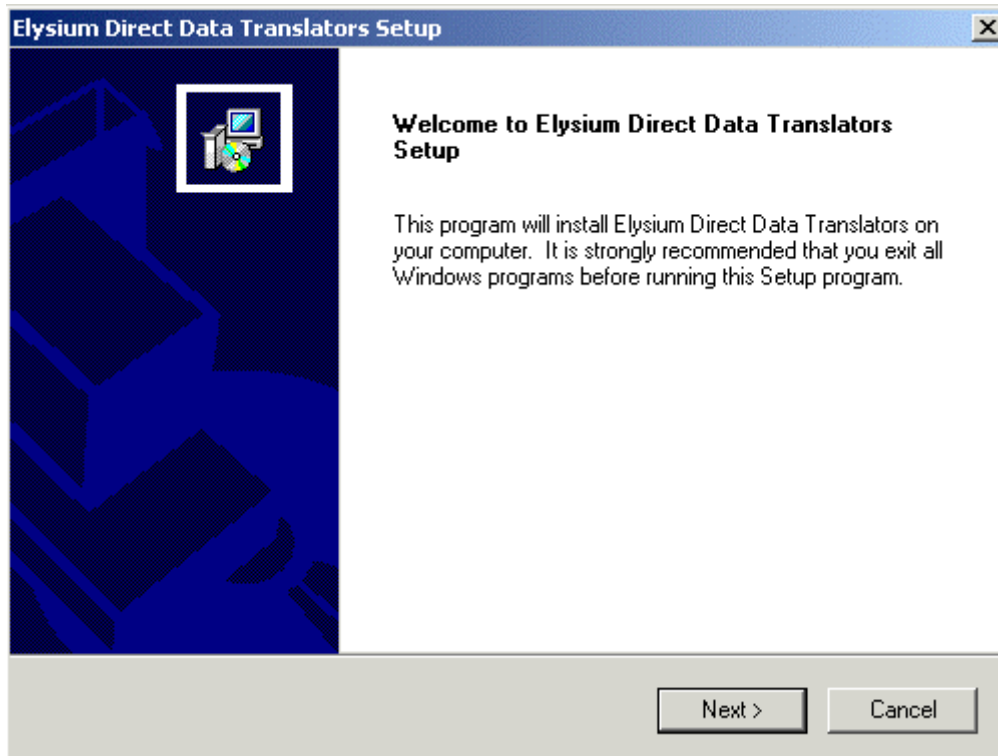
Caution: If you find the above lines in your existing `protk.dat` file, remove that block of text from the file using your favorite editor, then merge in the contents of the `protk<proe_version>.dat`.

For additional information about the ProE configuration file, `config.pro`, see Pro/Help or the ProE documentation.

Installing ProSW files on a Windows NT system

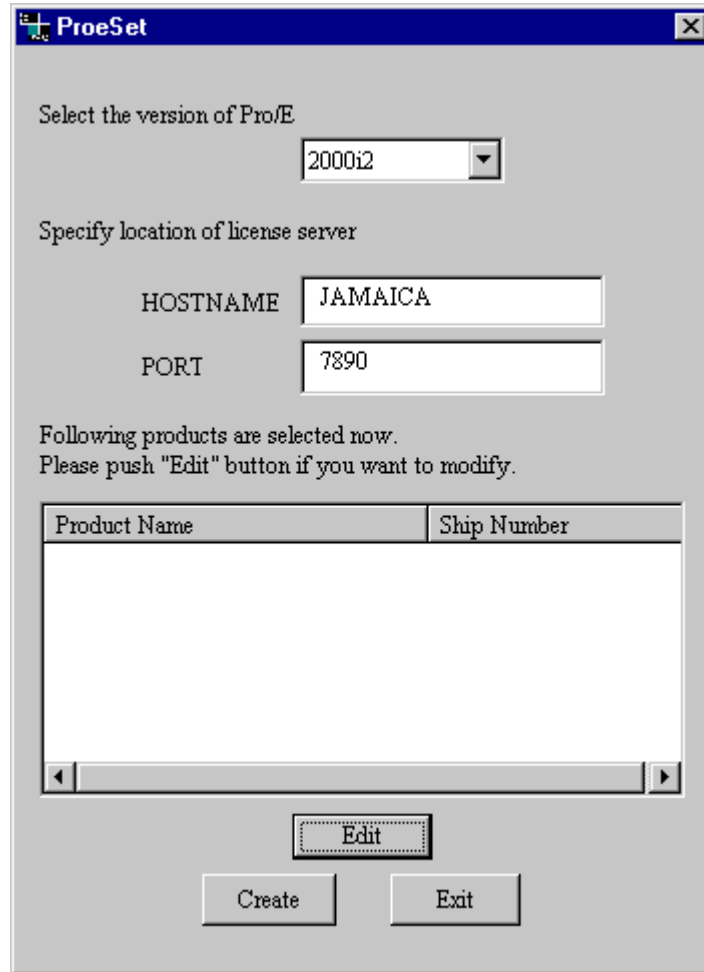
You need Administrator privileges in order to install ProSW.

Insert the Elysium Translator CD into your CD-ROM drive. The Elysium Direct Data Translators Setup program starts automatically. (If the setup program does not start automatically, run the \winnt\setup.exe program found on the Elysium Translator CD. You can do that using Run... from the Windows NT Start menu.) Follow the instructions given by the installation wizard.

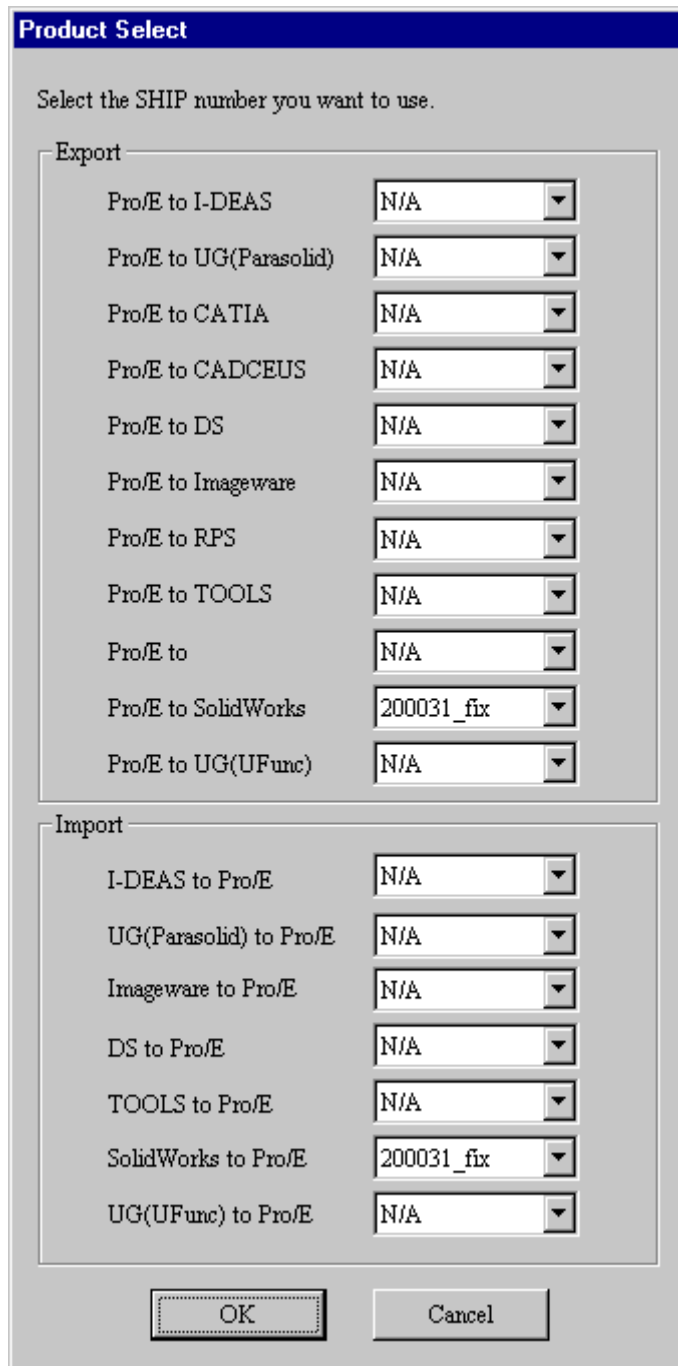


Configuring files required to run ProSW (runtime files)

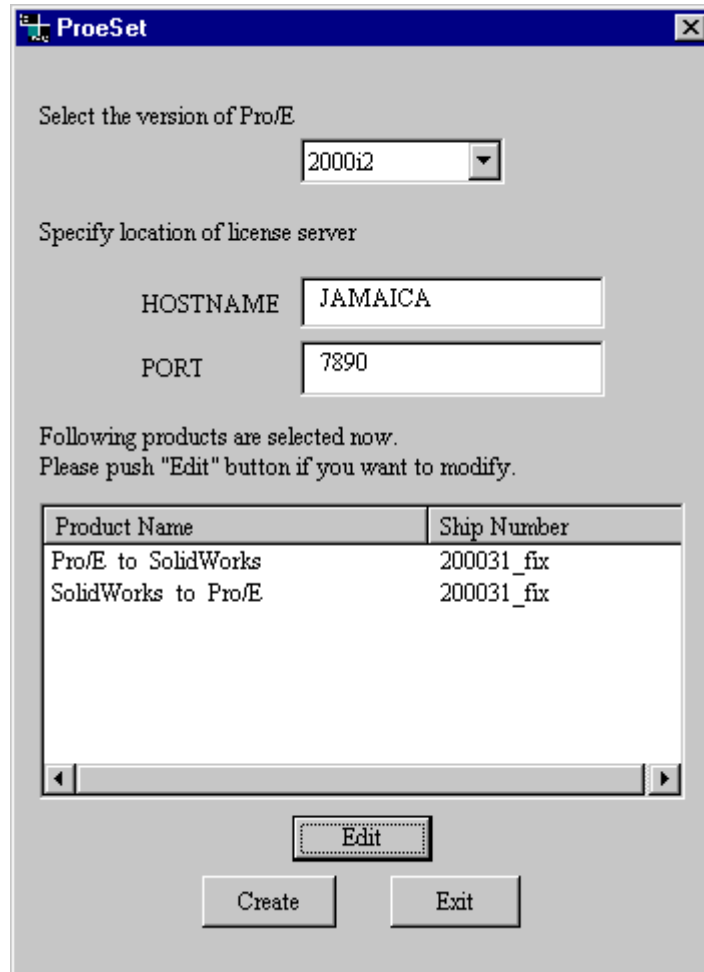
In order to complete the installation of ProSW, you need to create/edit and install three files: protk.dat, prodlist.txt, and config.pro. We provide an interactive utility, ProeSet, to help with that. You can run it by selecting Translator setting for ProE from the Windows NT Start menu (look in the Elysium Translators folder under the Programs folder).



Click Edit in order to select the particular version, or ship number, of the Pro/E to/from SolidWorks translator you are installing.



You are returned to the initial window, and you should see an entry for the Product Name and Ship Number you selected.



Click Create. The following files are created.

- `INSTALLDIR\SHIPnumber\proe_import\<proe_version>\nt\prodlist.txt`
- `INSTALLDIR\SHIPnumber\proe_export\<proe_version>\nt\prodlist.txt`
- `INSTALLDIR\pro\protk<proe_version>.dat`
- `INSTALLDIR\pro\config.pro`

where *INSTALLDIR* is the directory where the ProSW translator software is installed, *SHIPnumber* is the actual ship number, e.g., SHIP200031, and *<proe_version>* is either 2000i or 2000i2.

Completing the installation on a Windows NT system

You'll need to copy the `protk.dat` file (renamed from `protk<proe_version>.dat`) and the `config.pro` file into the `ProE_installation_directory/text` directory for ProE to recognize the ProSW translator. If the `protk.dat` file already exists in your ProE/text directory, merge the contents of the file created by the ProeSet utility, above, into the existing file.

```
NAME          From_ProE_SHIPnumber

EXEC_FILE     INSTALLDIR\SHIPnumber\proe_export\<proe_version>\nt\
pro2nut.dll

TEXT_DIR      INSTALLDIR\SHIPnumber\proe_export\text_pronut

REVISION      23

STARTUP DLL

END

NAME          To_ProE_SHIPnumber

EXEC_FILE     INSTALLDIR\SHIPnumber\proe_import\<proe_version>\nt\
nut2pro.dll

TEXT_DIR      INSTALLDIR\SHIPnumber\proe_import\text_nutpro

REVISION      23

STARTUP DLL

END
```

Caution: If you find the above lines in your existing `protk.dat` file, remove that block of text from the file using your favorite editor, and then merge in the contents of the `protk<proe_version>.dat`.

For additional information about the ProE configuration file, `config.pro`, see Pro/Help or the ProE documentation.

Running ProSW on UNIX and WINDOWS systems

Start Pro/ENGINEER.

The following messages are displayed as ProE reads in the menu text for the ProSW translators from the protk.dat file.

```
>>>Exec file:
/home/proe/SHIP200112/proe_import/2000i2/sun/nut2pro.exe
>>>Text dir : /home/proe/SHIP200112/proe_import/text_nutpro
```

```
-----
Elysium Direct Data Translators
Importing to Pro/ENGINEER
```

```
developed by
ELYSIUM CO.,Ltd.
```

```
-----
>>>Exec file:
/home/proe/SHIP200112/proe_export/2000i2/sun/nut2pro.exe
>>>Text dir : /home/proe/SHIP200112/proe_export/text_nutpro
```

```
-----
Elysium Direct Data Translators
Exporting Pro/ENGINEER
```

```
developed by
ELYSIUM CO.,Ltd.
```

Export a Pro/ENGINEER model to Parasolid file

1. Select one of the two options from the File pulldown menu in ProE.

```
File > Elysium Export(200112) > to SolidWorks
```

2. Enter the exported Parasolid file name after this prompt.

```
to SolidWorks : Enter Parasolid file Name [./defaultname.x_t]
```

3. Enter yes or no to one of the two prompts depending whether you are creating a new parasolid file or going to overwrite an existing one.

```
> to SolidWorks : OK to create ./defaultname.x_t? Y/N[N]
```

or

```
> to SolidWorks : OK to overwrite ./defaultname.x_t? Y/N[N]
```

4. You will be asked to confirm this operation with the following prompt.

```
> to SolidWorks : OK to continue? Y/Q(Q : quit) [Y]
```

5. When the exporting is complete, you will see the following prompts.

```
> to SolidWorks : Converting ....
```

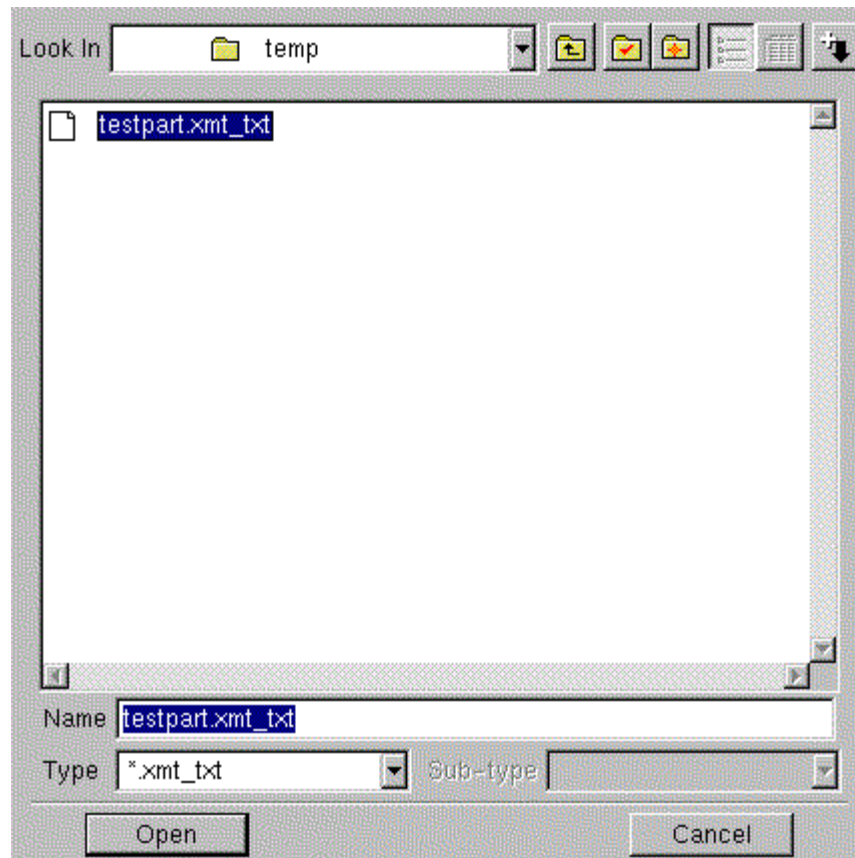
> to SolidWorks : Succeeded to create a Parsolid file.

Import a Parasolid file into Pro/ENGINEER

1. Select the following option from the File pulldown menu in ProE.

File > Elysium Import(200031) > from SW

2. Select the file name to open in the Parasolid File Open dialog box shown below.



3. When the Parasolid file is successfully imported, the following prompt is displayed in ProE.

Finish to Import Model.

Troubleshooting

We present common startup problems first, followed by those situations that have to do with the solid model itself.

Common Unix startup problems

Problem: Pro/ENGINEER fails to run from the directory where the protk.dat file is installed.

The ProSW translator version specified in the protk.dat file might not match the version of Pro/E you are running. Check the version of the nut2pro.exe executable using the what command. For example,

```
cd <install_dir>/SHIPXXXXXX/proe_import/<proe_ver>/<arch>  
what nut2pro.exe | more
```

If the versions don't match, reinstall the correct ProSW version.

Problem: The ProSW translator logo messages do not display when I start Pro/ENGINEER.

Problem: Elysium ProSW Import is not listed in the Pro/ENGINEER Import menu.

Problem: There is no "from SolidWorks" on the Elysium Import menu.

Problem: The ProSW translator does not run after selecting "from SolidWorks" on the Elysium Import menu.

Common Windows NT startup problems

Problem: Pro/ENGINEER fails to run.

Problem: The ProSW translator logo does not display when I start Pro/ENGINEER.

Problem: Elysium ProSW Import is not listed in the Pro/ENGINEER Import menu.

Problem: There is no "from SolidWorks" on the Elysium Import menu.

Fixing problems with model data

In cases where a translated model does not appear at all in Pro/ENGINEER, or where only partial translation occurs, there may be additional steps you can take.

In general, problems with translated data can be caused by

- Errors in the SolidWorks solid model
- Restrictions in the translator's runtime environment (memory, swap, and so on)
- Bugs in the translator software (highly unlikely, we think!)

When contacting Elysium tech support, be prepared to provide the error messages, if any, that you see in the ProE start-up window and error messages that may have occurred when creating the Parasolid file from the SolidWorks model.

Modifying the translated model in Pro/ENGINEER

Invalid data (faces, volumes) in Pro/E can often be fixed using the following Pro/E functions

- Feature/Redefine/Heal Geometry/Manual/Fix Bndries/Zip Gaps
- Feature/Redefine/Heal Geometry/Manual/Fix Bndries/Edit Bndry
- Feature/Redefine/Attribute