



Preparing for Programming Using the SPICE Toolkit

October 2007



Setting Path to Toolkit Executables

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Recommended for all languages

- **Unix**

- **csh, tcsh:** Use the set command to add the location of toolkit executables to your path.

- » set path = (\$path /my_directory/toolkit/exe)
- » set path = (\$path /my_directory/cspice/exe)
- » set path = (\$path /my_directory/icy/exe)
- » set path = (\$path /my_directory/mice/exe)

- **bash**

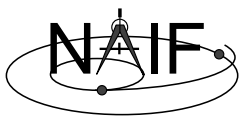
- » PATH=\$PATH:/my_directory/toolkit/exe
- » PATH=\$PATH:/my_directory/cspice/exe
- » PATH=\$PATH:/my_directory/icy/exe
- » PATH=\$PATH:/my_directory/mice/exe

- **Windows**

- Add location of toolkit executables to the environment variable PATH from the *Advanced* pane on the *System Control Panel* (*Control Panel->System->Advanced*).

- » drive:\my_directory\toolkit\exe
- » drive:\my_directory\cspice\exe
- » drive:\my_directory\icy\exe
- » drive:\my_directory\mice\exe

Replace the *italics* with the path in which you installed the toolkit on your computer.



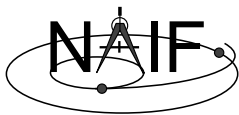
Unix/Linux: Build

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- **Compile and link an application, say *program*, against the SPICELIB/CSPICE libraries**
 - **Assume SPICE is installed at /naif/toolkit/ or CSPICE is installed at /naif/cspice/**
 - » **C**

```
$ gcc program.c -I/naif/cspice/include /naif/cspice/lib/csupport.a \
/naif/cspice/lib/cspice.a -lm
```
 - » **FORTTRAN**

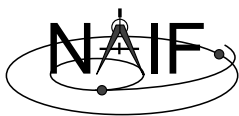
```
$ g77 program.f /naif/toolkit/support.a /naif/toolkit/spicelib.a
```
 - » **Some FORTRAN compilers (e.g. Absoft) require an additional flag "-lU77" when linking against SPICELIB to pull in the standard Unix symbols**
- **The default SPICE library names do not conform to the UNIX convention *libname.a*. So you cannot use the library path/name options *-L/path_to_libs/* and *-lname* unless you rename the SPICE library.**



Windows: Compiler settings

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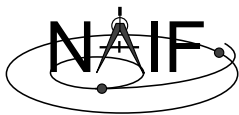
- **The standard installation of Microsoft Visual Studio or Visual Toolkit may not update environment variables needed to use the C compiler (cl) from the standard DOS shell.**
 - **Environment variables for "cl" - Visual Studio 7:**
 - » **INCLUDE**
 - C:\Program Files\Microsoft Visual Studio .NET\vc7\include\
 - C:\Program Files\Microsoft Visual Studio .NET\FrameworkSDK\include\
 - » **LIB**
 - C:\Program Files\Microsoft Visual Studio .NET\vc7\lib\
 - C:\Program Files\Microsoft Visual Studio .NET\FrameworkSDK\Lib\
 - » **PATH**
 - C:\Program Files\Microsoft Visual Studio .NET\vc7\bin\



Windows: Builds

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- **Assume SPICE is installed at C:\naif\toolkit\ with CSPICE installed at C:\naif\cspice**
 - **Compile and link an application, say *program*, against the SPICELIB/CSPICE libraries**
 - » **C**
> cl program.c -IC:\naif\cspice\include C:\naif\cspice\lib\csupport.lib \ C:\naif\cspice\lib\cspice.lib
 - » **FORTRAN**
> df program.f C:\naif\toolkit\lib\SUPPORT.LIB \ C:\naif\toolkit\lib\SPICELIB.LIB



Icy: Register the Icy DLM to IDL

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Required for “Icy”

- **Unix: do one of the following three things**
 1. **Start the IDL application from a shell in the directory containing both icy.dlm and icy.so**
 2. **Set the IDL_DLM_PATH environment variable to include the directory containing icy.dlm and icy.so:**
 - » setenv IDL_DLM_PATH <path to icy.dlm>
 3. **Use the IDL register command**
 - » IDL> dlm_register, <path to icy.dlm>
- **Windows: do one of the following two things**
 1. **Set environment variable IDL_DLM_PATH from the *Advanced* pane of the *System Control* panel**
 2. **Use the IDL register command:**
 - » IDL> dlm_register, <path to icy.dlm>
- **Confirm the IDL registration using the help command**

```
IDL> help, 'icy', /DLM
**ICY - IDL/CSPICE interface from JPL/NAIF (not loaded)
```

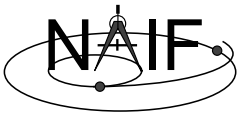


Icy: Using the IDL IDE

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Recommended for “Icy”

- Use the IDL IDE’s preferences panel to set the current working directory to the location where you will be developing your lessons’ code.
- **Optional:** Place your `dml_register` command in a start up script. Specify the script using the IDL IDE’s preferences panel.



Mice

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Required for “Mice”

- **Assume Mice is installed at `C:\naif\mice\` on Windows, or `/naif/mice/` on Unix/Linux. Use of Mice from MATLAB requires the Mice source and library directories exist in the MATLAB search path.**
 - **On Windows:**
 - » `addpath('C:\naif\mice\lib')`
 - » `addpath('C:\naif\mice\src\mice')`
 - **On Unix/Linux:**
 - » `addpath('/naif/mice/lib')`
 - » `addpath('/naif/mice/src/mice')`