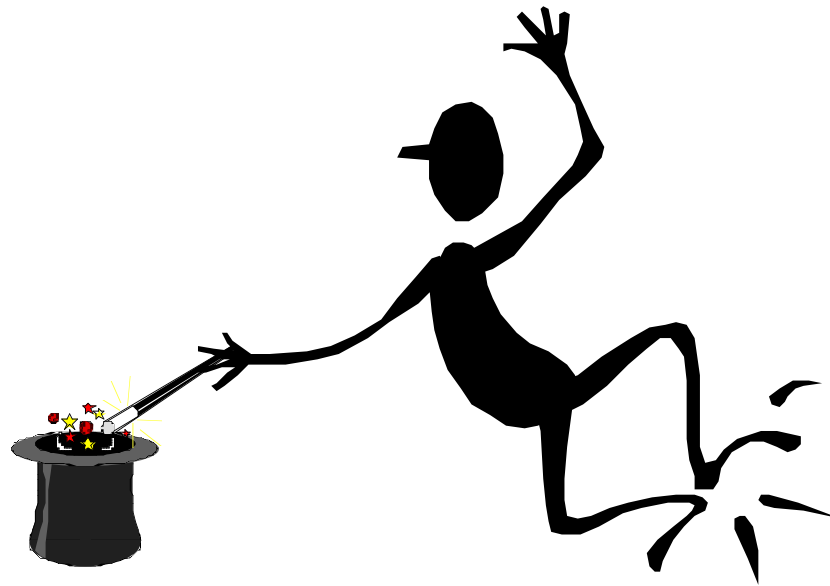


Navigation and Ancillary Information Facility

Getting and Installing the SPICE Toolkit



April 2016



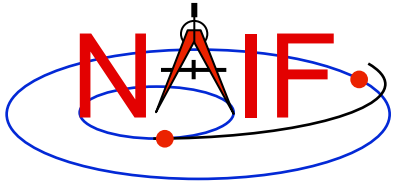
Getting Toolkit

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- **All instances of the SPICE Toolkit are available 24x7 from the NAIF WWW server**

<http://naif.jpl.nasa.gov/naif/toolkit.html>

- **No password or identification is needed**
- **To download a Toolkit package**
 - **Select language – FORTRAN, C, IDL, or MATLAB**
 - **Select computer platform/OS/compiler combination**
 - » **Be careful to pick the right architecture: 64 or 32 bit**
 - **Download all toolkit package components**
 - » **package file – toolkit.tar.Z (or toolkit.zip),
cspice.tar.Z (or cspice.zip),
icy.tar.Z (or icy.zip), or
mice.tar.Z (or mice.zip)**
 - » **Installation script (if present) – import*.csh**
 - » **Accompanying documents - README, dscriptn.txt, whats.new**



Don't Port it Yourself

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- The packages provided on the NAIF server have been built and tested by NAIF on these particular environments.
- We highly recommend you **NOT** try to port any instance of the Toolkit to some other environment, especially without consulting with NAIF first.
 - There are portability issues and compiler optimization issues that must be carefully dealt with.



Installing Toolkit

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Terminal Window

- To install the Toolkit, follow the directions given in the README. Normally this consists of the following (not applicable for PC Windows):

```
prompt> chmod u+x importSpice.csh
prompt> ./importSpice.csh
prompt> rm toolkit.tar
```

- For PCs running Windows, unzip the toolkit (or cspice or icy or mice) to expand the archive.

```
> unzip toolkit.zip
```

- You now have the expanded toolkit (or cspice or icy or mice) package.



Configuring Your Computer

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- For some programming environments there are **required** additional steps to prepare for programming using SPICE.
- For some programming environments there are **recommended** additional steps to make program development easier.
- **Read the “Preparing for Programming” tutorial and the “README” file found in the Toolkit download directory for more information!**

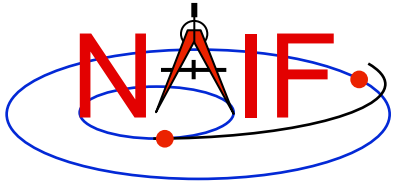


Checking It Out

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- **Try some executables**
 - Use *tobin* to convert the SPICE transfer format SPK and CK files supplied with the Toolkit to local binary.
 - » *cook_01.tsp*, *cook_02.tsp*, *cook_01.tc*, and *cook_02.tc* are found in the *../data* directory
 - Use *brief*, *ckbrief* or *spacit* to summarize the converted kernels.
- **Problems may occur if operating systems or compiler versions are (way) out of sync with what NAIF used in making its builds**
 - Rebuild the Toolkit using the script “*makeall.csh*” (or “*makeall.bat*”) located in the “top level” directory (*toolkit* or *cspice* or *icy* or *mice*).
- **In the rare circumstance that things still don’t work, contact your System Administrator or NAIF.**

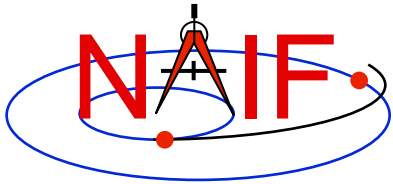
According to current SPICE conventions, the “*tsp*” extensions above should be “*xsp*,” and the “*tc*” extensions should be “*xc*.”



Backup

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- **Getting the Toolkit using command line FTP**



Command line FTP - 1

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```
prompt> ftp naif.jpl.nasa.gov
```

```
220- =====
220- |                               Jet Propulsion Laboratory                               |
220- |                               * * *   W A R N I N G   * * *                               |
220- |                               Property of the                                       |
220- |                               UNITED STATES GOVERNMENT                               |
220- |
      etc.   etc.   etc.
```

```
Name (your.sight:your_name): anonymous
```

```
331 Please specify the password
```

```
Password: your@e.mail.address
```

```
230-
230-                               Jet Propulsion Laboratory
230-                               * * *   W A R N I N G   * * *
230-                               Property of the UNITED STATES GOVERNMENT
230-                               This computer is funded by the United States Government and
230-                               operated by the California Institute of Technology in support of
230-                               ongoing U.S. Government programs and activities.  If you are not
230-                               authorized to access this system, disconnect now.  Users of this
230-                               system have no expectation of privacy.  By continuing, you consent
230-                               to your keystrokes and data content being monitored.
230-
230 Login successful.
```

```
ftp> cd pub/naif/toolkit/<FORTRAN or C or IDL or MATLAB>
```

```
250 Directory successfully changed.
```

```
ftp> dir
```




Command line FTP - 2

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```
ftp> dir
MacIntel_OSX_IFORT_32bit
MacIntel_OSX_IFORT_64bit
MacIntel_OSX_gfortran_32bit
MacIntel_OSX_gfortran_64bit
PC_Cygwin_gfortran_32bit
PC_Cygwin_gfortran_64bit
PC_Linux_IFORT_32bit
PC_Linux_IFORT_64bit
PC_Linux_g77_32bit
PC_Linux_gfortran_32bit
PC_Linux_gfortran_64bit
PC_Windows_IFORT_32bit
PC_Windows_IFORT_64bit
SunIntel_Solaris_SunFORTRAN_32bit
SunIntel_Solaris_SunFORTRAN_64bit
SunSPARC_Solaris_SunFORTRAN_32bit
```

FORTRAN

```
ftp> dir
MacIntel_OSX_AppleC_IDL8.x_32bit
MacIntel_OSX_AppleC_IDL8.x_64bit
PC_Linux_GCC_IDL8.x_32bit
PC_Linux_GCC_IDL8.x_64bit
PC_Windows_VisualC_IDL7.x_32bit
PC_Windows_VisualC_IDL7.x_64bit
SunIntel_Solaris_SunC_IDL8.x_64bit
SunSPARC_Solaris_GCC_IDL7.x_32bit
SunSPARC_Solaris_GCC_IDL7.x_64bit
SunSPARC_Solaris_SunC_IDL7.x_32bit
```

IDL

```
ftp> dir
MacIntel_OSX_AppleC_32bit
MacIntel_OSX_AppleC_64bit
PC_Cygwin_GCC_32bit
PC_Cygwin_GCC_64bit
PC_Linux_GCC_32bit
PC_Linux_GCC_64bit
PC_Windows_VisualC_32bit
PC_Windows_VisualC_64bit
SunIntel_Solaris_SunC_32bit
SunIntel_Solaris_SunC_64bit
SunSPARC_Solaris_GCC_32bit
SunSPARC_Solaris_GCC_64bit
SunSPARC_Solaris_SunC_32bit
SunSPARC_Solaris_SunC_64bit
```

C

```
ftp> dir
MacIntel_OSX_AppleC_MATLAB7.x_32bit
MacIntel_OSX_AppleC_MATLAB7.x_64bit
PC_Linux_GCC_MATLAB7.x_32bit
PC_Linux_GCC_MATLAB7.x_64bit
PC_Windows_VisualC_MATLAB7.x_32bit
PC_Windows_VisualC_MATLAB7.x_64bit
SunSPARC_Solaris_SunC_MATLAB7.x_64bit
```

MATLAB

The environments available at the time you download the Toolkit may differ from those shown here.



Command line FTP - 3

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```
ftp> cd <environment>/packages
ftp> binary
200 Switching to Binary mode.
ftp> get toolkit.tar.Z
      ( or toolkit.zip
        or cspice.tar.Z or cspice.zip
        or icy.tar.Z or icy.zip
        or mice.tar.Z or mice.zip )
. . .
ftp> ascii
200 Switching to ASCII mode.
ftp> get importSpice.csh
      ( or importCSpice.csh
        or importIcy.csh
        or importMice.csh )
      ( not available for Windows environment )
ftp> get README
ftp> get dscriptn.txt
ftp> get whats.new
ftp> quit
```