DAKOTA Classes Computing Options

Sandia National Laboratories

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Computing options for classes in 915/S101:

- **Laptop native:** Bring a company-owned laptop with DAKOTA and JAGUAR working; Windows, Mac, or Linux operating systems should all work (though Linux may require compiling from source). *Installation instructions follow.*
- **Laptop network:** Bring a company-owned laptop and use SNL hotel (SHN) or SRN (Tbird) wireless to connect to a resource with DAKOTA and JAGUAR installed and working.
- **Laptop DVD:** Bring a company-owned PC laptop that can boot our training LiveDVD (this doesn't always work with all hardware). No additional preparation is required.

Computing options for classes in MO22:

- **Desktop native:** Use MO22 desktop computer (requires SNL SRN access); *best option if your schedule and permissions permit.* No additional preparation is required.
- **Laptop native:** Bring a company-owned laptop with DAKOTA and JAGUAR working; Windows, Mac, or Linux operating systems should all work (though Linux may require compiling from source). *Installation instructions follow.*
- **Laptop DVD:** Bring a company-owned PC laptop that can boot our training LiveDVD (this doesn't always work with all hardware). No additional preparation is required.

Laptop Configuration

If using your own laptop for DAKOTA training, you will need (either locally or remote, depending on your chosen option):

1. **DAKOTA 5.1:** Download, install, and test DAKOTA. Before downloading, we request you first register as a DAKOTA user at http://www.cs.sandia.gov/web1400/1400_download.html.
2. **JAGUAR 2.1:** Download, install, and test JAGUAR 2.1. (If Jaguar doesn't work or you prefer not to use it, locate a text editor with which you're comfortable, e.g., emacs, vi, gedit, nano, or wordpad.) Before downloading, we request you first register as a JAGUAR user at http://www.cs.sandia.gov/web1400/1400_download.html.
3. **Examples:** Download extra examples from http://dakota.sandia.gov/training/2011/. Verify that you have access to a Dakota/examples directory with your DAKOTA installation.
4. **DAKOTA Integration:** If attending DAKOTA Integration and want to work on connecting DAKOTA to your application, install it and an example analysis if possible.

If you have problems not resolved by the DAKOTA docs and these steps, please email dakota-help@sandia.gov and we'll try to get you running before the class. ***We cannot help you get DAKOTA running once you arrive at class due to time constraints!***

Laptop Installation instructions for Windows, Mac, and Linux follow…

Windows Laptop Install (XP, Vista, or 7, 32- or 64-bit, no MinGW or Cygwin install required)

DAKOTA for MinGW

- Download DAKOTA Stable (there are known issues with 5.1) for MinGW from http://dakota.sandia.gov/licensing/download_stable.html
- Extract the zip contents to an install location of your choice, e.g., `C:\`. This will create a folder `C:\Dakota`.
- Test DAKOTA installation by opening a Command Prompt (All Programs > Accessories > Command Prompt) and typing the following commands:

```
set DAKOTA=C:\Dakota
set PATH=%DAKOTA%\bin;%DAKOTA%\test;%PATH%
dakota -v
```

- If successful, DAKOTA will output similar to

```
Running serial executable in serial mode.
DAKOTA version 5.1 released 12/21/2010.
Subversion revision 271 built Dec 22 2010 00:13:06.
```

JAGUAR 2.1 for Windows

- JAGUAR requires a Java runtime environment (JRE) 5 (1.5) or newer.
- Download JAGUAR 2.1 for Windows (preferably the EXE installer) from http://dakota.sandia.gov/licensing/download_jaguar_2_1.html. Make sure to choose the Jaguar 32- or 64-bit that matches the bits of your Java installation, not your OS.
- Install as directed on webpage.
- Test installation:
  - Start Jaguar application:
    (EXE installer): Select All Programs > Jaguar > Jaguar
    (ZIP package): Browse to the install location and run Jaguar.exe
  - Once in Jaguar, select Window > Preferences > Jaguar and set the dakota executable location, e.g., C:\Dakota\bin\dakota.exe.
- Proceed with JAGUAR 2.1 common test directions following below

Max OS X Install (Leopard or Snow Leopard only)

DAKOTA for Intel Mac

- Download DAKOTA 5.1 for Mac from http://dakota.sandia.gov/licensing/download_5_1.html
- Double-click the downloaded file to extract the archive in place, creating a Dakota folder
- Move to an install location of your choice, e.g., /Users/jdoe/Dakota.
- Test DAKOTA installation by opening a terminal (Applications > Utilities > Terminal) and typing the following commands:

```
export DAKOTA=/Users/jdoe/Dakota
export PATH=$DAKOTA/bin:$DAKOTA/test:$PATH
export DYLD_LIBRARY_PATH=$DAKOTA/bin:$DYLD_LIBRARY_PATH
dakota -v
```

- If successful, DAKOTA will output similar to

```
Running MPI executable in serial mode.
DAKOTA version 5.1 released 12/21/2010.
Subversion revision 271 built Dec 22 2010 00:13:06.
```

JAGUAR 2.1 for Intel Mac

- JAGUAR requires a Java runtime environment (JRE) 5 (1.5) or newer.
- Download JAGUAR 2.1 for Mac (preferably the DMG installer) from http://dakota.sandia.gov/licensing/download_jaguar_2_1.html
- Install as directed on webpage.
- Test installation:
  - Start Jaguar application:
    (DMG installer): Select Applications > Jaguar > Jaguar
    (ZIP package): Open a terminal and type the full path to the Jaguar executable, e.g., `/Users/jdoe/Jaguar/Jaguar &` (note this will likely not work from a terminal in which the DAKOTA DYLD_LIBRARY_PATH has been sent)
  - Once in Jaguar, select Window > Preferences > Jaguar and set the dakota executable location, e.g., `/Users/jdoe/Dakota/bin/dakota`.
- Proceed with JAGUAR 2.1 common test directions following below

Linux Laptop Install (64-bit RHEL5 supported; others may need to compile from source)

DAKOTA for Linux

- Download DAKOTA 5.1 for Linux from http://dakota.sandia.gov/licensing/download_5_1.html
- Extract the tar contents to an install location of your choice, e.g., /home/jdoe/Dakota.
- Test DAKOTA installation by opening a terminal and typing the following commands:

```
export DAKOTA=/home/jdoe/Dakota
export PATH=$DAKOTA/bin:$DAKOTA/test:$PATH
export LD_LIBRARY_PATH=$DAKOTA/bin:$LD_LIBRARY_PATH
dakota -v
```

- If successful, DAKOTA will output similar to

```
Running MPI executable in serial mode.
DAKOTA version 5.1 released 12/21/2010.
Subversion revision 271 built Dec 22 2010 00:13:06.
```

JAGUAR 2.1 for Linux

- JAGUAR requires a Java runtime environment (JRE) 5 (1.5.x) or newer.
- Download JAGUAR 2.1 for Linux from http://dakota.sandia.gov/licensing/download_jaguar_2_1.html. Make sure to choose the Jaguar 32- or 64-bit that matches the bits of your Java installation, not your OS.
- Unpack the archive to a location of your choice, e.g., `/home/jdoe/Jaguar`
- Test installation:
  - Start Jaguar application from a terminal by typing the location of the Jaguar binary, e.g., `/home/jdoe/Jaguar/Jaguar &`
  - Once in Jaguar, select Window > Preferences > Jaguar and set the dakota executable location, e.g., `/home/jdoe/Dakota/bin`.
- Proceed with JAGUAR 2.1 common test directions following below

JAGUAR 2.1 common test directions

- If desired, set a Save Path in preferences (location in which to save created DAKOTA files).
- Select OK to exit preferences.
- If present, close the Welcome Screen overlay.
- Select File > New > “Input file from template” and choose “Parameter Study Vector”; Next.
- Save to a location of your choice, e.g, `$HOME/testdak.i`; Finish.
- Jaguar may process a minute while the input specification is generated for the first time.
- Select the Execute Problem tab and select the “Check” button to run DAKOTA in check mode. You should see output such as

```
Input check completed successfully (input parsed and objects instantiated).
```