

## AVS: Running on sample data sets

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(slightly modified from Russell Taylor's Homework #2)

The purpose of this homework is to make sure that you are familiar with running AVS Express and how some of its basic features work. This includes:

- Installing or configuring AVS Express
- Running AVS Express either on a PC, SGI or Sun
- Loading the example visualizations
- Changing viewing parameters when looking at a visualization
- Changing parameters on a pre-built visualization
- Modifying programs by adding and removing modules
- Saving and printing image snapshots of the results of visualizations

### Installing or configuring AVS Express

The installation files can be downloaded from:

<ftp://avs.ncsc.org/pub/software/CampusExpress6.1/>

For the PC folks, you will need to download the license.dat file and everything in the windows/ directory.

The Solaris person will need the install.xp file, the help.z file and the s8.z file (unless they are running 64 bit solaris, in which case they download s8\_64.z) Solaris does not need the license.dat file.

The README file outlines the environment variables that need to be set for the Unix and PC environments (it is different for the two).

For the Linux RedHat 7.0 folks, they will need to download the install.xp, the help.z and the linux.z file.

The RedHat8.0 folks will download the tarred and gzipped file in the linux subdirectory (the file is named LINUX\_RH8.tar.z). This is different than all of the other platforms in that it is the actual directory for the RH installation, as opposed using the install.xp script. So you will want to "open up" this tarred file into the express directory (where you plan to install express)

For the Linux folks, they will need to copy the following sequence of characters into a file, typically named license.dat:

```
NcTRsDYnzSo
```

Then they will need to set the following environment variables:

```
setenv MACHINE linux
setenv XP_ROOT /mitral/scratch/sandy/express
setenv XP_PATH /mitral/scratch/sandy/express
setenv XP_LICENSE_FILE /frosty/us1/sandy/license.dat
```

```
setenv XP_LOCALE_DEBUG 1
setenv XP_LANG C
setenv LD_LIBRARY_PATH /mitral/scratch/sandy/express/lib/linux
```

Where the directory paths in the example above will be changed to apply specifically to where the users has chosen to install express and put the license.dat file. If the linux people have trouble with the vxp command (library and/or GL errors) have them try running the express.static -viz command instead...

### **Running AVS Express**

On a PC, you run AVS Express using Start/Programs/AVS Express Collection/Viz Express. On a Unix machine (or using a remote X window), run 'vxp'. See: [http://www.ncsc.org/training/materials/express\\_class/XPsciviz/](http://www.ncsc.org/training/materials/express_class/XPsciviz/) and click on 'labs' or go to [http://www.ncsc.org/training/materials/express\\_workbook/](http://www.ncsc.org/training/materials/express_workbook/) for tutorial instructions.

### **Loading and Viewing the Example Visualizations**

Select the "examples" library.

Load the Advect example and another example of your choice from the Examples library. For each of them, perform all of the steps described below. The steps described below will produce the pictures that you will turn in.

1. Drag the example into the applications area, which will create the viewer for the application.
2. Go to the Print Editor, set up the printer you want to use, and print the visualization (print all of these using white backgrounds). Alternatively, you can use Alt/PrintScreen and paste the images into a Word document or use Paint to save them as JPG files for inclusion on a web page (this is true for all print operations listed below as well).
3. Rotate the viewpoint. Print the new view.
4. In the Module Editor, change the parameters for the visualization; for the Advect example, edit the glyph scale on the advect module and the orientation of the slice using the Transformation Editor on the FPlane module. Set to something interesting, from an interesting view. Print the view.
5. Adjust the lighting using the Light editor. Print the new view.
6. Open the Advect module in the application window by double-clicking on it. Replace the Arrow2 module with the Arrow1 module, deleting the Arrow2 module and hooking up Arrow1 to the same connection. Print the result. (For the second example, try to find a similar change that can be made; if nothing comes to mind, don't print anything for this step in the second visualization.)
7. Familiarize yourself with the other controls on the viewing application (perspective, resetting the view, rendering style, translation, zoom, etc.) and find an interesting view. Print this view.

Label each page with the example (#1 will be advect, #2 will be your selection) and the step you were on. This will produce numbers 1.2, 1.3, 1.4, 1.5, 1.6, 1.7 and 2.2, 2.3, 2.4, 2.5, (maybe 2.6),

and 2.7. Staple all of the pages together and turn them in at the beginning of class or group them into a Word file or web page and email them to Jam ([cjl@cs.duke.edu](mailto:cjl@cs.duke.edu)) before the start of class next Thursday.