

AVS Module Download Guide

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1 Introduction

This guide offers instructions on how to download and integrate either AVS5 modules or AVS/Express projects. Downloading AVS5 modules or AVS/Express projects is fairly simple, however integrating them with the desired system is different for each product.

2 AVS5 Modules

Downloading is achieved by browsing the catalogue in the AVS5 Repository, and simply clicking on the required module path. Once a desired module path has been selected, download the C or Fortran files found within that directory, along with any instructional text files, sample network files, and an appropriate Makefile for your system (Unix only). For example, to install the 3D-axis module on an IBM AIX system, one would need to download the following files:

- 000-README
- 3D_axis.txt
- 3d_axis.c
- make.IBM

Place these files in appropriate directory, and then perform a make command. For example, on our hypothetical IBM AIX machine this would be:

```
make -f make.IBM
```

This should result with the generation of the executable module, which may be added using *Network Editor* ⇒ *Module Tools* ⇒ *Read Module* . For more detailed information, please refer to the AVS5 documentation.

3 AVS/Express Projects

3.1 Downloading

Downloading is achieved by browsing the catalogue in the AVS/Express Repository, locating the required project, and downloading an archive file linked from the catalogue listing. Projects can be downloaded in either `.tar.gz`, `.tar.Z` or `.zip` format.

3.2 IAC Project Files

To integrate the archived project into an existing AVS/Express user project, carefully read the instructions presented here. Before any AVS/Express projects can be integrated, some required base files should be downloaded and set up first. These files, known as the IAC Project Files allow easy integration of any number of AVS/Express projects.

3.2.1 Sources of Information

IAC Project Files and detailed instructions on how to install and set up:

<http://www.iavsc.org/repository/pfiles/>

In-depth description of Project Files:

<http://www.iavsc.org/repository/pog/>

3.3 Adding a Project

When the IAC Project Files have been setup (once for each user derived project – refer to the IAC Project Organization Guidelines), users may download any of the AVS/Express projects in the repository of the IAC-Website and add them at any time.

3.3.1 Generic Installation Instructions for Unix

1. Download a project archive. Available Formats are:
 - `.tar.gz`
 - `.tar.Z`
 - `.zip`
2. Place the archive file into the top-level directory of the user derived project area (where the file `avsenv` and the directories `iac_lib/`, `iac_proj/` and `v/` can be found.)

3. Unpack the project archive with the following commands:

For .tar.gz archives

```
gunzip [file_name].tar.gz
tar -xvf [file_name].tar
```

For .tar.Z archives

```
uncompress [file_name].tar.Z
tar -xvf [file_name].tar
```

For .zip archives

```
unzip1 [file_name].zip
```

4. Examine the INSTALL file, found in the `iac_proj/[file_name]` directory, which will have just been created when the archive was unpacked. This will contain information about which IAC Project Files must be updated to add the newly downloaded project.
5. Edit the `iac_proj/iac_proj.v` file, and, following the instructions given in the INSTALL file, insert the required line into the `flibrary` statement, for example:

```
flibrary IAC_PROJ <cxx_name=""> {
  "../iac_proj/[file_name]/[file_name].v" [ProjectName];
};
```

6. Edit one or more of the files in `iac_lib/`, as described in the INSTALL file.
7. Finally, examine the README file, again found in the `iac_proj/[file_name]` directory, which will give further details about the specific requirements of that project, and how it should be compiled. The most common approach for compiling AVS/Express projects is from the command line.

In the top-level directory which contains the directory `iac_proj` type one of the following commands (depending on the process used, which will be specified in the README file):

```
base -comp_proc express -exit
```

or

```
base -comp_proc user -exit
```

8. Once successfully compiled, the newly added project will be available to use in the AVS/Express environment. If any of the downloaded projects have been compiled into the system `express` process, pick up the new version of AVS/Express by typing the following command when in the top-level directory:

¹ Please note that the `unzip` command might not be available on some Unix systems.

bin/sgi/express

Note: Replace `sgi` with the appropriate machine name for your system. If you do not know this, please ask your system administrator or email IAC.

3.3.2 Generic Installation Instructions for Windows

1. Download a project archive. Available Formats are:
 - `.tar.gz`
 - `.tar.Z`
 - `.zip`
2. Place the archive file into the top-level directory of the user derived project area (where the file `avsenv` and the directories `iac_lib\`, `iac_proj\` and `v\` can be found.)
3. Extract the archive using, say, WinZip to the top-level directory.
4. Examine the `INSTALL` file, found in the `iac_proj\[file_name]` directory, which will have just been created when the archive was unpacked. This will contain information about which IAC Project Files must be updated to add the newly downloaded project.
5. Edit the `iac_proj\iac_proj.v` file, and, following the instructions given in the `INSTALL` file, insert the required line into the `flibrary` statement, for example:

```
flibrary IAC_PROJ <cxx_name=""> {  
  "../iac_proj/[file_name]/[file_name].v" [ProjectName];  
};
```

Please note that the the directory separators used in the `flibrary` statement above are Unix-style forward slashes.

6. Edit one or more of the files in `iac_lib\`, as described in the `INSTALL` file.
7. Finally, examine the `README` file, again found in the `iac_proj\[file_name]` directory, which will give further details about the specific requirements of that project, and how it should be compiled. The most common approach for compiling AVS/Express projects is from the command line.

In the top-level directory type one of the following commands (depending on the process used, which will be specified in the `README` file):

```
base -comp_proc express -exit
```

or

```
base -comp_proc user -exit
```

8. Once successfully compiled, the newly added project will be available to use in the AVS/Express environment. If any of the downloaded projects have been compiled into the system `express` process, pick up the new version of AVS/Express by typing the following command when in the top-level directory:

```
start bin\pc\express
```

3.3.3 Final Note

The newly integrated project should add one or more high-level User Macros to the IAC library page, which is visible to both Visualization Edition and Developer Edition users. Developer Edition users can access all of the components by looking in the system library:

```
Templates.IAC_PROJ.[ProjectName]
```

A AVS/Express Project Installation Example

This appendix is a walk-through of the set-up of the Background project on an SGI Irix workstation with a virgin AVS/Express installation. It is intended to be more detailed than the generic installation instructions.

Please note that it is not possible to follow these instructions to the letter (unless you have a set-up identical to that of the test machine); they are only meant to clarify any ambiguities in the generic installation instructions.

A.1 Setting up Project Files

1. The web site <http://www.iavsc.org/repository/pfiles/> contains information on how the IAC Project Files can be set up. Following the instructions on that web site, the file `iac.tar.gz` was downloaded into the directory `~/avs_exp`² (which was created exactly for that purpose).
2. The IAC Project Files now had to be extracted from the archive:

```
cd ~/avs_exp
gunzip iac.tar.gz
tar -xvf iac.tar
```

²What directory you put `iac.tar.gz` in is insignificant. It is however desirable that this directory is *not* used for any other purposes, as it will become the “user derived project area”, where all add-on projects live.

3. The archive could now be deleted³:

```
rm iac.tar
```

A.2 Setting up the Project

1. The AVS/Express Repository⁴ was searched, and the Background project (P0094) was located. According to the description, this project would allow one to “generate and display various forms of background images for the viewer window”.
2. The archive `backgrnd.tar.gz` was saved into the `~/avs_exp` directory.
3. The downloaded archive now had to be extracted:

```
cd ~/avs_exp
gunzip backgrnd.tar.gz
tar -xvf backgrnd.tar
```

4. The archive itself could now be deleted⁵:

```
rm backgrnd.tar
```

5. The `INSTALL` file in the `~/avs_exp/iac_proj/backgrnd` directory was found to contain the following:

```
# IAC Project Installation Information - DO NOT EDIT!
#
# Insert the following line into the iac_proj/iac_proj.v file
"../iac_proj/backgrnd/backgrnd.v" Background;
# In the following iac_lib file
misc.v
# insert the following line
IAC_PROJ.Background.BackgroundMacs.background_generator background_generator;
IAC_PROJ.Background.BackgroundMacs.textured_background textured_background;
IAC_PROJ.Background.BackgroundMacs.coloured_background coloured_background;
# In the following iac_lib file
examples.v
# insert the following line
IAC_PROJ.Background.BackgroundApps.BackgroundEg BackgroundEg;
IAC_PROJ.Background.BackgroundApps.TexturedBackgroundEg TexturedBackgroundEg;
IAC_PROJ.Background.BackgroundApps.ColouredBackgroundEg ColouredBackgroundEg;
```

6. The file `~/avs_exp/iac_proj/iac_proj.v` now had to be edited as described in the file `INSTALL`. The following shows what the file looked like before any edit. . .

³Please note that this step is optional. In theory, there should be no need to keep the archive around, but it is always wise to keep backup copies of files. . .

⁴This is located at <http://www.iavsc.org/repository/express/>

⁵This step was optional. Having the archive lying round in the project area shouldn't do any harm.

```
// INTERNATIONAL AVS CENTRE - WARRANTY DISCLAIMER
// Please read the file DISCLAIMER for conditions associated with this file.
// avs@iavsc.org, www.iavsc.org

flibrary IAC_PROJ <cxx_name=""> {

};
```

... and this is what the file looked like after the edit had taken place:

```
// INTERNATIONAL AVS CENTRE - WARRANTY DISCLAIMER
// Please read the file DISCLAIMER for conditions associated with this file.
// avs@iavsc.org, www.iavsc.org

flibrary IAC_PROJ <cxx_name=""> {
    "../iac_proj/backgrnd/backgrnd.v" Background;
};
```

7. The file `~/avs_exp/iac_lib/misc.v` now had to be edited. Its initial state was:

```
// INTERNATIONAL AVS CENTRE - WARRANTY DISCLAIMER
// Please read the file DISCLAIMER for conditions associated with this file.
// avs@iavsc.org, www.iavsc.org

flibrary MISC<user_library=0,compile_subs=0> {

};
```

The result of editing this file according to instructions in the file `INSTALL` was the following:

```
// INTERNATIONAL AVS CENTRE - WARRANTY DISCLAIMER
// Please read the file DISCLAIMER for conditions associated with this file.
// avs@iavsc.org, www.iavsc.org

flibrary MISC<user_library=0,compile_subs=0> {
    IAC_PROJ.Background.BackgroundMacs.background_generator background_generator;
    IAC_PROJ.Background.BackgroundMacs.textured_background textured_background;
    IAC_PROJ.Background.BackgroundMacs.coloured_background coloured_background;
};
```

8. Finally, the file `~/avs_exp/iac_lib/examples.v` was edited. The initial file was:

```
// INTERNATIONAL AVS CENTRE - WARRANTY DISCLAIMER
// Please read the file DISCLAIMER for conditions associated with this file.
// avs@iavsc.org, www.iavsc.org

flibrary EXAMPLES<user_library=0,compile_subs=0> {

};
```

The result of the edit was:

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```
// INTERNATIONAL AVS CENTRE - WARRANTY DISCLAIMER
// Please read the file DISCLAIMER for conditions associated with this file.
// avs@iavsc.org, www.iavsc.org

flibrary EXAMPLES<user_library=0,compile_subs=0> {
    IAC_PROJ.Background.BackgroundApps.BackgroundEg BackgroundEg;
    IAC_PROJ.Background.BackgroundApps.TexturedBackgroundEg TexturedBackgroundEg;
    IAC_PROJ.Background.BackgroundApps.ColouredBackgroundEg ColouredBackgroundEg;
};
```

9. The file `~/avs_exp/iac_proj/backgrnd/README` specified that the project in question is compiled into the `express` process by default. The compilation commands were therefore the following:

```
cd ~/avs_exp
base -comp_proc express -exit
```

10. The compilation resulted in an `express` executable with the Background project built-in. To start this executable, the following commands were issued:

```
cd ~/avs_exp
bin/sgN32/express
```