

NAME

VOClient – Virtual Observatory (VO) Libraries and Desktop Applications

SYNOPSIS

VOclient is a collection of programming APIs and command-line tools that provide a user-ready VO software distribution for both scientists and developers. The initial release of the package is intended primarily to distribute the completed CLI tools, additional tasks are planned as new functionality is added to the libraries and as new standards come on-line in the VO.

The VOPClient package includes a number of command-line utilities built from the underlying interfaces. These tasks can be scripted from any number of environments or used in a standalone manner. Tasks distributed in this release include:

Command-Line Tools**Data Access Tools**

<i>voatlas</i>	Query the SkyView Image service for an all-sky image
<i>vocatalog</i>	Query VO catalog services for data
<i>vodata</i>	Query and access VO data services
<i>voimage</i>	Query VO image services for data
<i>voiminfo</i>	Print/Get information about a FITS file's structure
<i>vospectra</i>	Query VO spectral services for data

Utility Tools

<i>voregistry</i>	VO Registry search client
<i>vosesame</i>	Call the Sesame name resolver service
<i>vosamp</i>	Command-line SAMP tool

VOTable Tools

<i>votcnv</i>	Convert from VOTable to another format
<i>votget</i>	Download URLs or access references in a VOTable
<i>votinfo</i>	Get information about a VOTable
<i>votopic</i>	Query data resources specified by topic keyword
<i>votpos</i>	Extract the main positional columns from a VOTable
<i>votsort</i>	Extract the main positional columns from a VOTable
<i>votstat</i>	Compute statistics for numeric columns of a VOTable.

Programming Interfaces

libsamp SAMP interface. This interface allows an application to send and receive SAMP messages but does NOT (at this time) provide a local Hub implementation. Applications can register their own functions to be used as callbacks in response to a message, the API provides only the middle-ware needed to handle the SAMP protocol.

libvoclient Client-side VO interface. This interface uses the VOPClient Daemon to access a variety of VO web services (Registry, Sesame, DAL services, etc) which then communicate to the API to pass information back to the application.

libvotable VOTable parser interface. The interface provides both read (lax parsing) and write (strict compliance) capabilities. Reference is VOTable v1.2.

libvoapps VO Applications interface. High-level interface to application functionality. Tasks are built on these routines to provide the cmdline user interface, but are encapsulated in an API to provide this functionality to other environments easily (as opposed to having that functionality be re-implemented using the low-level interfaces).

Dependency Libraries

<i>libcurl</i>	SAMP interface
<i>libfitsio</i>	C FITSIO interface
<i>libexpat</i>	XML parser
<i>libxmlrpc-c</i>	XML-RPC interface

INSTALLATION

Using Pre-Built Binaries

Pre-built binary distributions are available containing both source and binaries for a specific platform. These distribution names are of the form

*voclient-
<version>-bin.<arch>.tar.gz*

where *<arch>* is one of

<i>linux</i>	32-bit Linux systems (Fedora, Ubuntu, Debian, etc).
<i>linux64</i>	64-bit Linux systems (Fedora, Ubuntu, Debian, etc).
<i>macosx</i>	32-bit OSX 10.6 and higher systems for Mac.
<i>macintel</i>	64-bit OSX 10.6 and higher systems for Mac.

The distribution file may be unpacked with the command

*tar xzf /<path>/voclient-
<version>-bin.<arch>.tar.gz*

This will produce a '*voclient*' subdirectory containing the unpacked distribution. Within that directory you'll find the following important directories needed to install the package on the system:

bin/ Task binaries
lib/ API library files
include/ Program header files

The contents of these directories should be copied to some system directory available in the normal user paths. For example, to install in */usr/local*

```
% cd /<path>/voclient
% sudo cp bin/* /usr/local/bin
% sudo cp lib/* /usr/local/lib
% sudo cp include/* /usr/local/include
```

When compiling new applications the appropriate '-I' and '-L' flags will need to be set to find the libraries and include files needed. The binary installation directory should be some directory in the normal \$PATH environment setting.

Building VOClient from Source

The source distribution of the release is contained in the file

voclient-src.tar.gz

It may be unpacked with the command

```
tar xzf /<path>/voclient-src.tar.gz
```

This will produce a 'voclient' subdirectory containing the unpacked distribution. Utility scripts are used throughout the system to do the platform configuration necessary, therefore the only command needed to build the package is:

```
% cd /<path>/voclient
% make
```

As with the pre-built binary described above, the following important directories are needed to install the package on the system:

bin/	Task binaries
lib/	API library files
include/	Program header files

In a successful build the libraries and binaries are installed in the package 'bin' and 'lib' directories, header files needed for program development are put in the 'include' directory. The contents of these directories should be copied to some system directory available in the normal user paths. For example, to install in /usr/local

```
% cd /<path>/voclient
% sudo cp bin/* /usr/local/bin
% sudo cp lib/* /usr/local/lib
% sudo cp include/* /usr/local/include
```

When compiling new applications the appropriate '-I' and '-L' flags will need to be set to find the libraries and include files needed. The binary installation directory should be some directory in the normal \$PATH environment setting.

Supported Platforms

This release currently supports the following platforms:

Mac OSX	32-bit and 64-bit Intel, OSX 10.6 and later
Linux 32-bit	32-bit Linux systems (Fedora, Redhat, Ubuntu, etc)
Linux 64-bit	64-bit Linux systems (Fedora, Redhat, Ubuntu, etc)

Additional platforms will be added as needed.

BUGS

This is the first public release

REVISION HISTORY

May 2013 - First public release

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SEE ALSO

voatlas, vocatalog, vodata, voimage, votiminfo, voregistry, vosesame, vospectra, votcnv, votget, votinfo, votopic, votpos, votsort, votstat, vosamp