



Research Express is on its way!

- The demonstration will start at 12:30 pm.
- To use the Live Chat:
 - Maximize your browser window so you can see the postings.
 - If you refresh the browser page, you'll need to log in again.
 - After the demonstration, staff will remain available in the chat for a few minutes to answer additional questions.

Today's topic:
Perl Modules

Creating collections of Perl modules



Objectives

- Show important directories in your Lustre workgroup directory.
- Show how any user in your workgroup can use a workgroup Perl Modules Collection.
- Show how a designated user in your workgroup can update/add a simple Module in your workgroup Perl Modules Collection.



Important Directories

These directories are assumed to be in your workgroup (`it_css`) area.

- Location for your workgroup (`it_css`) VALET packages:
`/lustre/work/it_css/.valet`
- Location for your workgroup Perl Modules Collection:
`/lustre/work/it_css/perl5`



Using the workgroup VALET directory

Account setup for the workgroup VALET directory: add the following line

```
export VALET_SYSCONFDIR=/lustre/work/it_css/.valet
```

to your `.bash_profile` (in your home directory).



Contents of workgroup VALET Directory

- There is a `.vpkg` file in your workgroup VALET packages directory

```
$ ls /lustre/work/it_css/.valet  
perl-group.vpkg
```

- The `perl-group.vpkg` file is a copy of the system perl file with modified variables:

```
PERL5LIB  
MANPATH
```



Adding a VALET package

Any user in the workgroup can add a VALET package.

This is because the workgroup `.valet` directory is group writable with the sticky bit.

For details on writing the VALET package xml files, see

<http://beren.engr.udel.edu/doku.php/valet:packagefile>

Interactive example

```
[(it_css:traine)@mills ~]$ vpkg_require perl-group  
Adding dependency `mysql-client/5.5.22` to your environment  
Adding dependency `postgresql-client/9.1.3` to your environment  
Adding package `perl-group/5.14.2` to your environment  
[(it_css:traine)@mills ~]$ man Acme::Time::Baby
```

Interactive example (man)

Acme::Time::Baby(3) User Contributed Perl Documentation Acme::Time::Baby(3)

NAME

Acme::Time::Baby - Tell time little children can understand

SYNOPSIS

```
use Acme::Time::Baby;
print babytime;      # Prints current time.
```

```
use Acme::Time::Baby language => 'du';
print babytime "10:15"; # Prints a quarter past ten in a way
                        # little Dutch children can understand.
```

DESCRIPTION

Using this module gives you the function "babytime", which will return the time in the form The big hand is on the ten and the little hand is on the three. If no argument to "babytime" is given, the current time is used, otherwise a time of the form hh:mm can be passed. Both 12 and 24 hour clocks are supported.

Interactive example (cont)

```
[(it_css:traine)@mills ~]$ vpkg_rollback all
[(it_css:traine)@mills ~]$ vpkg_require perl-group
Adding dependency `mysql-client/5.5.22` to your environment
Adding dependency `postgresql-client/9.1.3` to your environment
Adding package `perl-group/5.14.2` to your environment
[(it_css:traine)@mills ~]$ man Acme::Time::Baby
[(it_css:traine)@mills ~]$ echo $(perl -e "use Acme::Time::Baby; print babytime")
The big hand is on the twelve and the little hand is on the four
[(it_css:traine)@mills ~]$
```

Interactive example (error)

```
[(it_css:traine)@mills ~]$ vpkg_require perl
Adding dependency `mysql-client/5.5.22` to your environment
Adding dependency `postgresql-client/9.1.3` to your environment
Adding package `perl/5.14.2` to your environment
[(it_css:traine)@mills ~]$ echo $(perl -MAcme::Time::Baby -e print\ babytime)
Can't locate Acme/Time/Baby.pm in @INC (@INC contains: /opt/shared/perl/5.14.2
/lib/site_perl/5.14.2/x86_64-linux /opt/shared/perl/5.14.2/lib/site_perl/5.14.2
/opt/shared/perl/5.14.2/lib/5.14.2/x86_64-linux /opt/shared/perl/5.14.2/lib/5.14.2 .).
BEGIN failed--compilation aborted.
```

Tale of two accounts

- `traine` - A typical user in workgroup `it_css` wanting to use the workgroup Perl Modules Collection, but doesn't update/install modules.
- `trainf` - Designated user in workgroup `it_css` to manage the workgroup Perl Modules Collection and owns the `perl5` directory. This user updates/installs all modules.



local::lib module from CPAN

The `trainf` account has already created the `perl5` directory and has built it by following the directions from CPAN:

<http://search.cpan.org/dist/local-lib>

Click on the `local:lib` module for the documentation.



local::lib module from CPAN

Step 4 has

"Now we need to setup the appropriate environment variables, so that Perl starts using our newly generated lib/ directory."

The step goes on to give a command to put in your `.bashrc` file. We suggest modifying these instructions to use a bash function, since you do not want to always have these env variables, and we want to make a VALET package for others to use in the workgroup.



local::lib module from CPAN

Step 4:

bash function in `.bashrc` file:

```
cpanenv () {  
    eval $(perl -I/lustre/work/$1/perl5/lib/perl5\ -  
Mlocal::lib=/lustre/work/$1/perl5)  
}
```

Use this function `cpanenv it_css` **only** when you are `trainf` and want to update/add modules. Otherwise you will be using the modules as all other users in your group.

Example CPAN to update

```
[trainf@mills ~]$ cpanenv it_css  
[trainf@mills ~]$ env | grep PERL  
PERL5LIB=/lustre/work/it_css/perl5/lib/perl5/x86_64-linux-thread-multi:  
/lustre/work/it_css/perl5/lib/perl5  
PERL_MB_OPT=--install_base /lustre/work/it_css/perl5  
PERL_LOCAL_LIB_ROOT=/lustre/work/it_css/perl5  
PERL_MM_OPT=INSTALL_BASE=/lustre/work/it_css/perl5  
[trainf@mills ~]$
```

Example CPAN to update

```
[trainf@mills ~]$ cpanenv it_css
[trainf@mills ~]$ env | grep PERL
PERL5LIB=/lustre/work/it_css/perl5/lib/perl5/x86_64-linux-thread-multi:
/lustre/work/it_css/perl5/lib/perl5
PERL_MB_OPT=--install_base /lustre/work/it_css/perl5
PERL_LOCAL_LIB_ROOT=/lustre/work/it_css/perl5
PERL_MM_OPT=INSTALL_BASE=/lustre/work/it_css/perl5
[trainf@mills ~]$ cpan
Terminal does not support AddHistory.
```

```
cpan shell -- CPAN exploration and modules installation (v1.9402)
Enter 'h' for help.
```

```
cpan[1]>
```

Example CPAN to update

```
[trainf@mills ~]$ cpanenv it_css
[trainf@mills ~]$ env | grep PERL
PERL5LIB=/lustre/work/it_css/perl5/lib/perl5/x86_64-linux-thread-multi:
/lustre/work/it_css/perl5/lib/perl5
PERL_MB_OPT=--install_base /lustre/work/it_css/perl5
PERL_LOCAL_LIB_ROOT=/lustre/work/it_css/perl5
PERL_MM_OPT=INSTALL_BASE=/lustre/work/it_css/perl5
[trainf@mills ~]$ cpan
Terminal does not support AddHistory.
```

```
cpan shell -- CPAN exploration and modules installation (v1.9402)
Enter 'h' for help.
```

```
cpan[1]> upgrade Acme::Time::Baby
CPAN: Storable loaded ok (v2.20)
Going to read '/home/1200/.cpan/Metadata'
  Database was generated on Thu, 26 Apr 2012 00:51:03 GMT
All modules are up to date for Acme::Time::Baby
```

```
cpan[2]>
```

Example CPAN to add

```
[trainf@mills ~]$ cpanenv it_css
[trainf@mills ~]$ env | grep PERL
PERL5LIB=/lustre/work/it_css/perl5/lib/perl5/x86_64-linux-thread-multi:
/lustre/work/it_css/perl5/lib/perl5
PERL_MB_OPT=--install_base /lustre/work/it_css/perl5
PERL_LOCAL_LIB_ROOT=/lustre/work/it_css/perl5
PERL_MM_OPT=INSTALL_BASE=/lustre/work/it_css/perl5
[trainf@mills ~]$ cpan
Terminal does not support AddHistory.
```

cpan shell -- CPAN exploration and modules installation (v1.9402)
Enter 'h' for help.

```
cpan[1]> upgrade Acme::Time::Baby
CPAN: Storable loaded ok (v2.20)
Going to read '/home/1200/.cpan/Metadata'
  Database was generated on Thu, 26 Apr 2012 00:51:03 GMT
All modules are up to date for Acme::Time::Baby
```

```
cpan[2]> install Algorithm::Numerical::Shuffle
```

Output showing progress of packages downloaded to ~/.cpan and eventually installed in your /lustre/work/ directory for your workgroup.

Summary

- A workgroup VALET directory created.
- A workgroup Perl Modules Collection created and managed (update/add modules) by a designated user in your workgroup.
- Any user in your workgroup can use the group Perl Modules Collection using `vpkg_require perl-group` defined in the workgroup VALET directory.
 - Requires modification of `.bash_profile`

More information

- **IT Research Computing**

<http://www.it.udel.edu/research-computing>

Contact the IT Support Center

- **Email:** consult@udel.edu

If you make the first line of the e-mail message

Type=Cluster-Mills

your question will be routed more quickly.

- **Phone:** (302) 831-6000
- **Text:** (302) 722-6820

