Mapping Research Requirements to Software Tools

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Deploying software for the research community

```
$ wget ...

$ tar xzf ...

$ configure --prefix=...
$ make -j7

# make install
```

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Automating building process

```
%prep
tar xzf %{SOURCE0}

%build
configure --prefix=%{_prefix}
make %{?_smp_mflags}

%install
make install DESTDIR=%{buildroot}
```

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Further automation using macros

```
%prep
%setup

%build
%configure
make %{?_smp_mflags}

%install
%make_install
```

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Handling dependencies

```
Provides:
BuildRequires:
Requires:

%prep
%setup

%build
%configure
make %{?_smp_mflags}

%install
%make_install

%files
```

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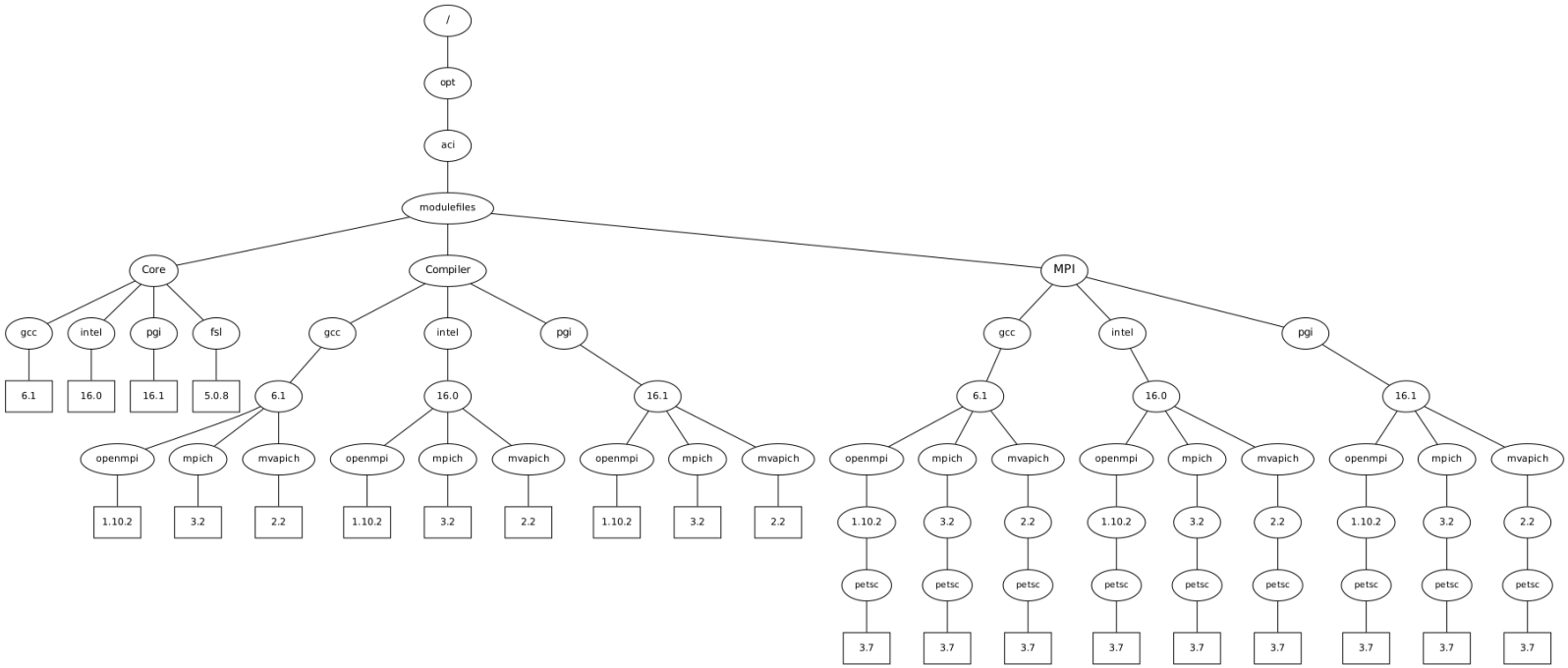
Hierarchical naming scheme for modules



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Adding modulefiles

```
%prep
cat << EOF > %{version}.lua
%include %{SOURCE1}
EOF

%install
install %{version}.lua %{buildroot}%{_moddir}

%files
%{_moddir}/%{version}.lua
```

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Packaging types

- source code
  - main package with spec file sections:

    ```
    %prep
    %build
    %install
    ```

  - sub-package for modulefile
- pre-built
  - main package without compilation section in spec file:

    ```
    %prep
    %install
    ```

  - sub-package for modulefile
- pre-packaged
  - main (ghost) package for dependencies only
  - sub-package for modulefile

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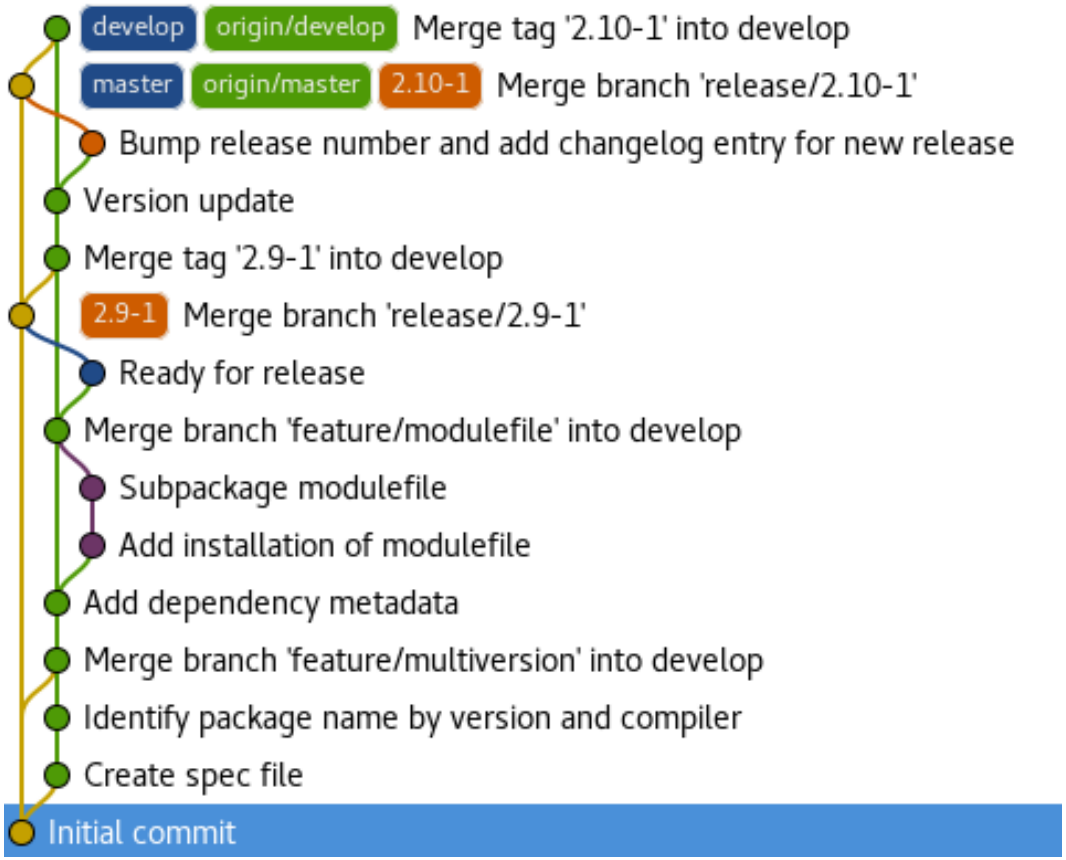
Reusable building process



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Thank you!

(see a working example at git.psu.edu)

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