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The University of Texas at Austin

XALT Monthly Meeting: Building a Reverse Map Paths \Rightarrow Module Names

Robert McLay

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XALT: Outline



- ▶ Setting up modulefiles to build a Reverse Map
- ▶ The Reverse Map connects full paths to module names
- ▶ It is not required but useful.
- ▶ This works even if your site uses Tmod.
- ▶ Just use Lmod to build the reverse Map.

Goal: Map full paths to module names

- ▶ `$LMOD_DIR/spider -o xalt_rmapT $MODULEPATH > xalt_rmapT.json`
- ▶ TACC builds this file on cluster and transfers it to VM.

xalt_rmapT.json

```
{
  "reverseMapT": {
    "/apps/cmake/3.16.1": "cmake/3.16.1",
    "/apps/cmake/3.16.1/bin": "cmake/3.16.1",
    "/apps/gcc/9.1.0": "gcc/9.1.0",
    "/apps/gcc/9.1.0/bin": "gcc/9.1.0",
    "/apps/gcc/9.1.0/lib": "gcc/9.1.0",
    "/apps/gcc/9.1.0/lib64": "gcc/9.1.0",
    "/apps/intel18/impi18_0/phdf5/1.10": "phdf5/1.10.4(intel/18.0:impi/18.0.0)",
    "/apps/intel18/impi18_0/phdf5/1.10/bin": "phdf5/1.10.4(intel/18.0:impi/18.0.0)",
    "/apps/intel18/impi18_0/phdf5/1.10/lib": "phdf5/1.10.4(intel/18.0:impi/18.0.0)",
    ...
  }
}
```

Lmod configuration

- ▶ Lmod uses LMOD_SITE_NAME to know what the name of your cluster
- ▶ For example we use TACC as our site name.
- ▶ But lets assume that your site is BLUE.

Full paths are remembered from 3 Env. Vars.

- ▶ Changes to PATH
- ▶ Changes to LD_LIBRARY_PATH
- ▶ Setting <SITE>_<PKGName>_DIR
- ▶ This last one is very important.

<SITE>_<PKGName>_DIR

- ▶ Let's assume that your site name is BLUE.
- ▶ Each modulefile should have:
`setenv("BLUE_<PKGName>_DIR",
"/path/to/package")`
- ▶ PHDF5: `setenv("BLUE_HDF5_DIR",
"/apps/intel19/impi19/phdf5/1.10")`

Converting a PATH to a Module Name

- ▶ Full paths are supplied by XALT records
- ▶ XALT uses xalt_rmapT.json file to map paths to names
- ▶ It uses the three paths described before.
- ▶ Given a full path
/apps/intel19/impi19/phdf5/1.10/bin/h5dump
- ▶ XALT removes one directory at a time to get an exact match
- ▶ Thus mapping path to module phdf5/1.10
- ▶ If no match is found then module_name is NULL
- ▶ Mapping is done at ingestion by xalt_file_to_db.py or xalt_syslog_to_db.py

Conclusions

- ▶ Thanks for listening
- ▶ Questions?