Environment Modules

Environment Modules let you dynamically load and unload software packages without conflicts between versions. Always load the modules your job needs before running it.

Common Commands

Finding Modules

```
# List all available modules
module avail

# Search for a specific module
module avail gcc

# Get detailed info including dependencies
module spider gcc/gcc-12.1.0
```

Loading and Unloading

```
# Load a module
module load gcc/gcc-12.1.0

# List currently loaded modules
module list

# Unload a specific module
module unload gcc/gcc-12.1.0

# Unload all modules
module purge
```

Inspecting a Module

```
# See what environment variables a module will set
module show gcc/gcc-12.1.0
```

In Job Scripts

Load modules inside your job script, after the `#SBATCH` directives:

```
#!/bin/bash
#SBATCH --job-name=my_job
#SBATCH ...

module purge
module load gcc/gcc-12.1.0

./my_program
```

Starting with `module purge` ensures your job is not affected by any modules loaded in your shell session.

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