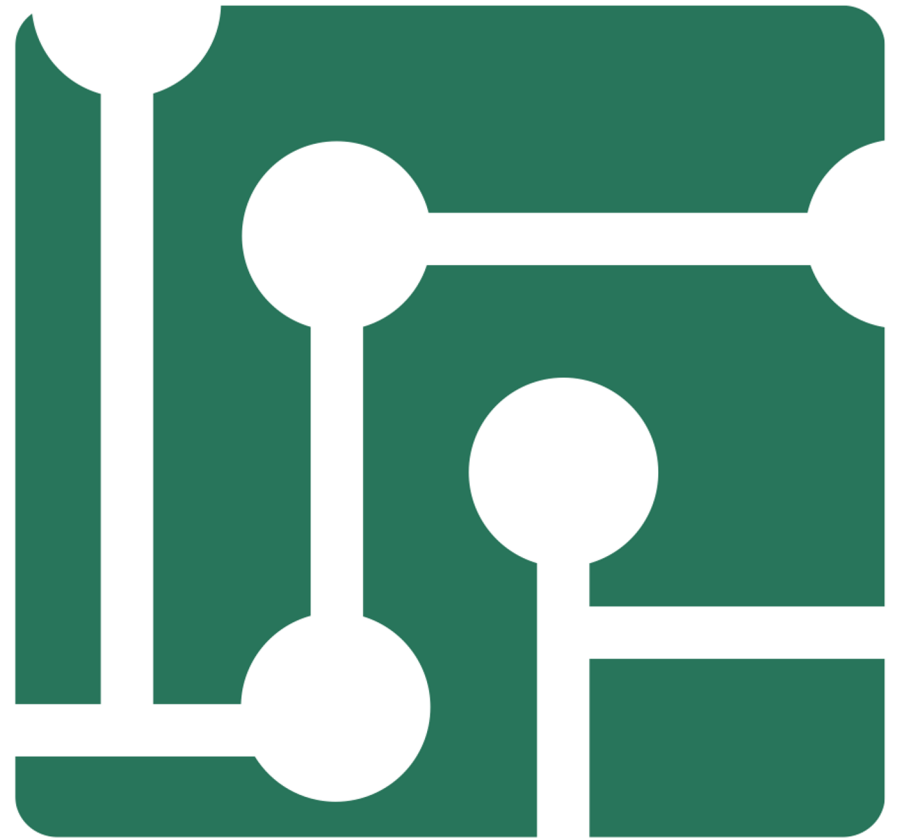


# ICER Overview

Dr. Dirk Colbry

ICER, Director of User Support

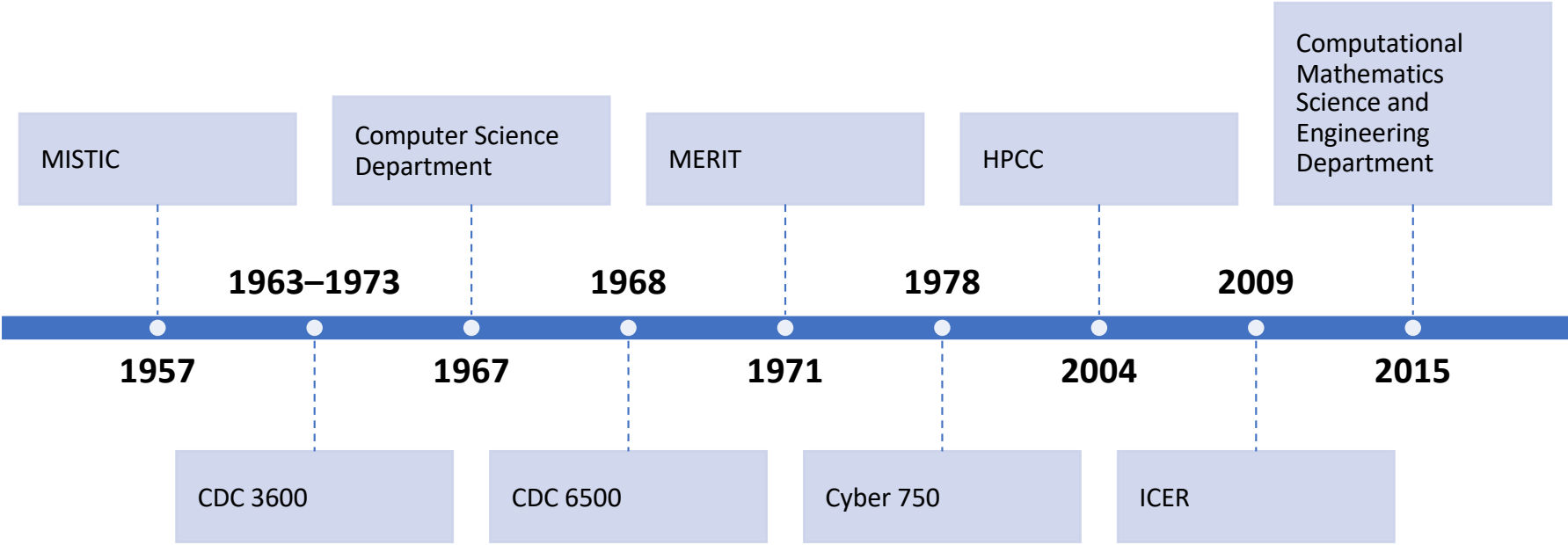


# ICER

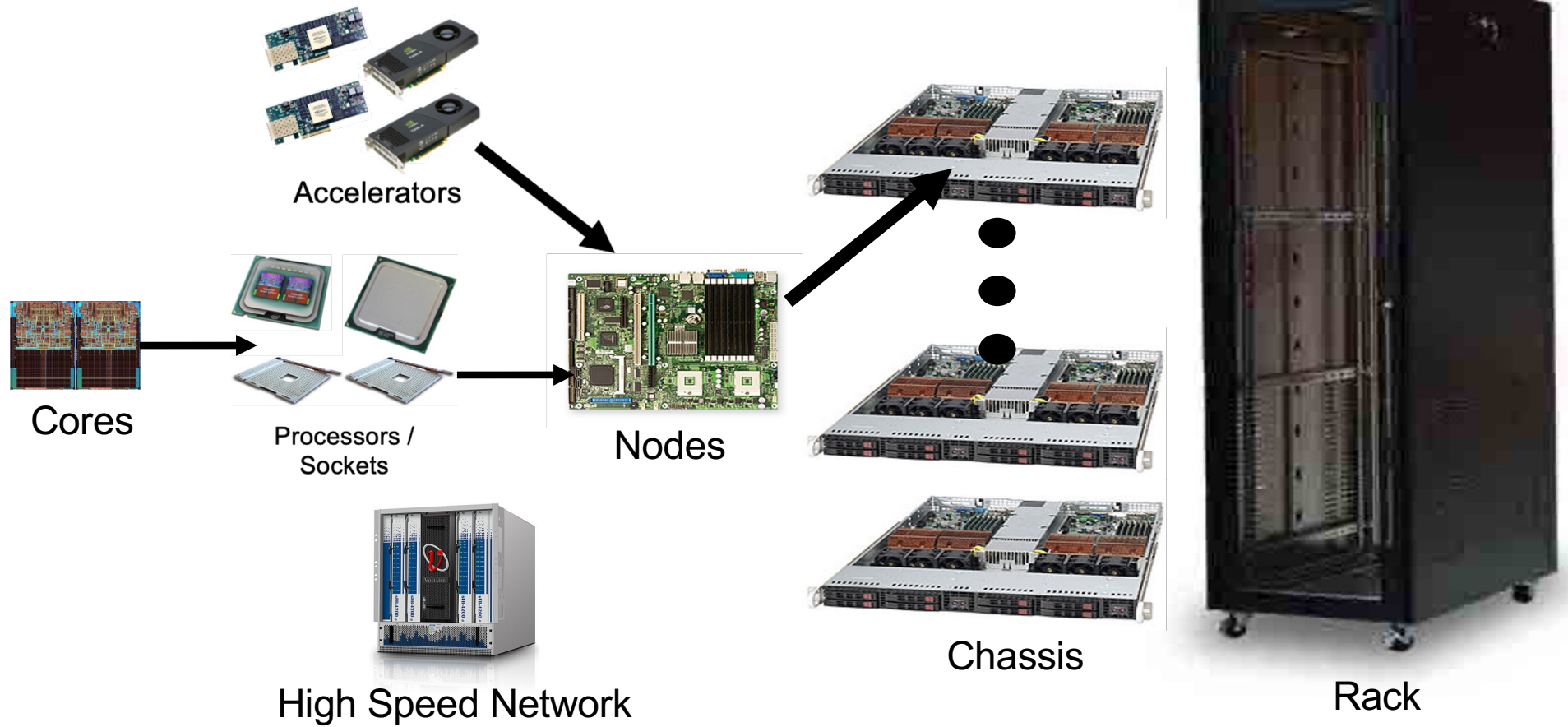
# Agenda

- Overview of the HPCC
- Logging on to the HPCC
- Simple example
  - Module System
  - Compiling and testing
  - Submitting a job to the cluster
- Where to get help

# Computing At MSU



# Commodity Cluster



# Data Center



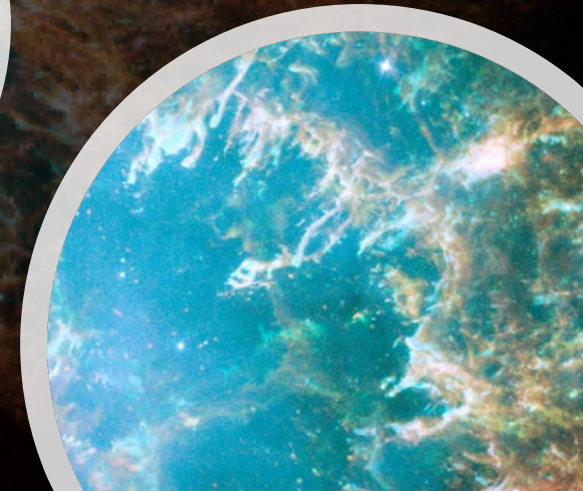
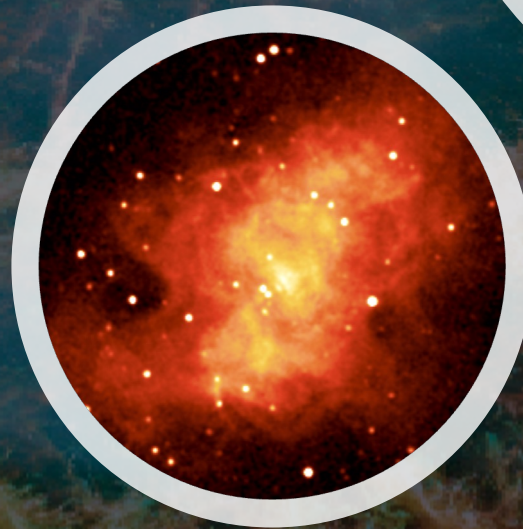
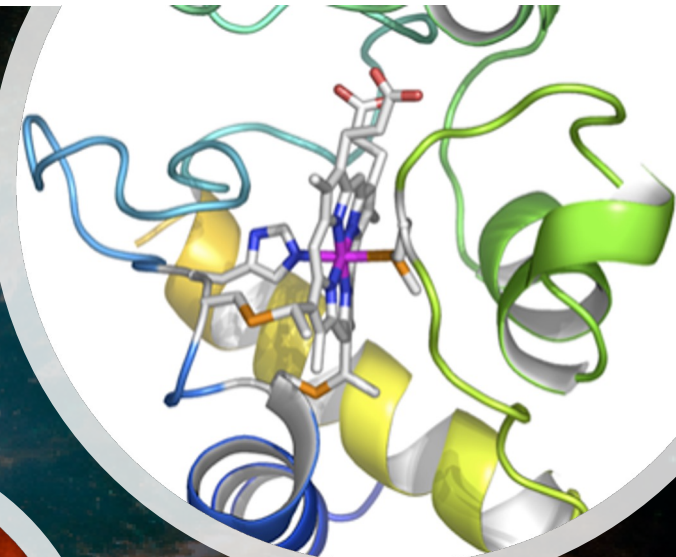
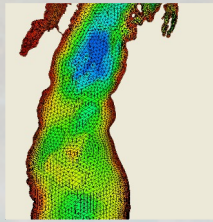


# ICER Data Center Tour



# What Problems are we Solving?

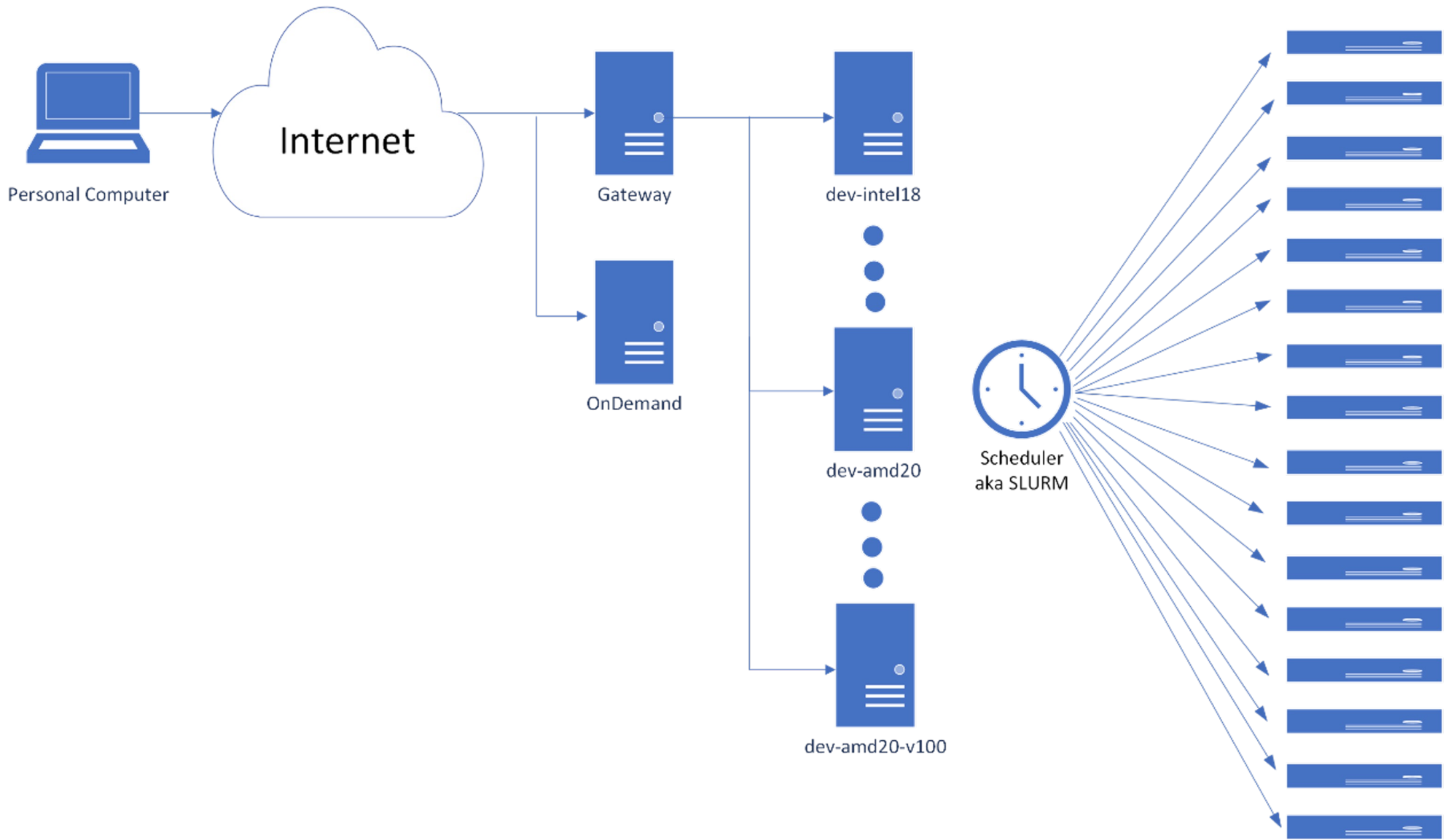
- Boundary Simulations
- Data Analysis
- Search (aka Optimization, AI)

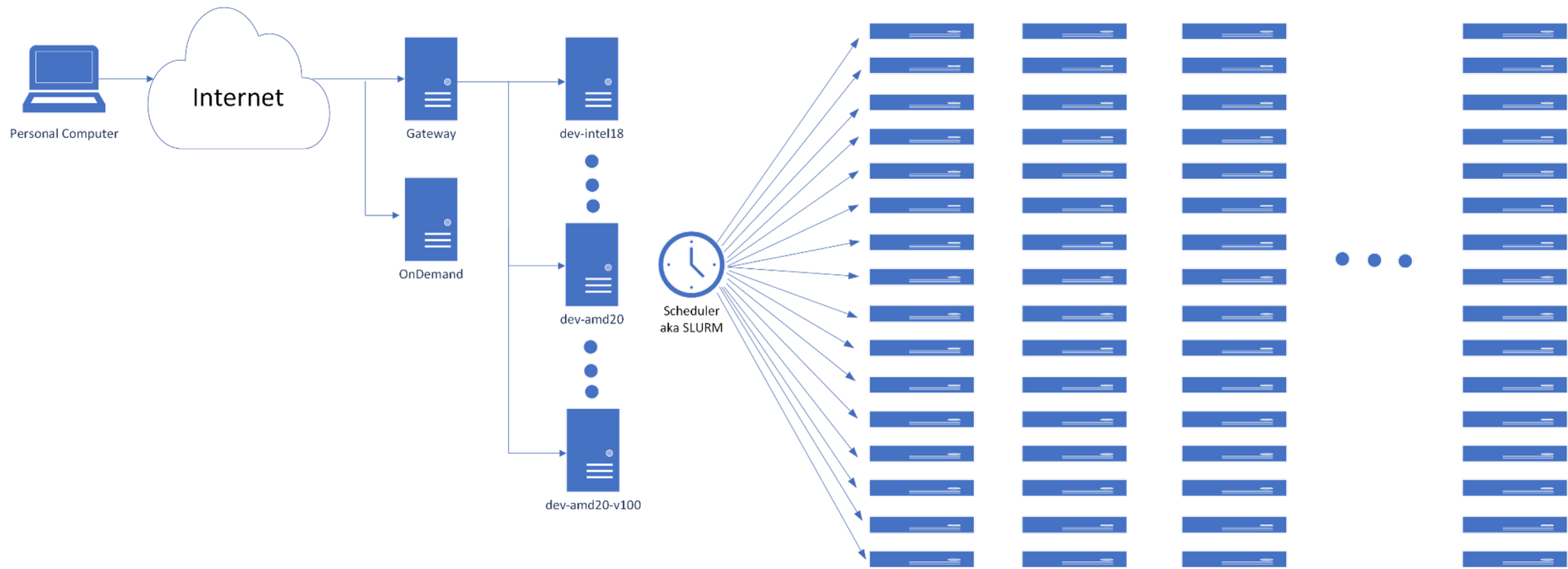


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**OPEN**



**onDemand**

**DEMO**

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# Get a Simple Example

1. Open a “terminal” on the HPCC
2. Load the powertools module

```
module load powertools
```

1. See all of the examples

```
getexample
```

1. Run the “get example” command

```
getexample helloHPCC
```

1. Change to the “helloworld” directory

```
cd helloHPCC
```

1. Run the example

```
cat README
```

# Compile and run the Simple Example

1. Compile the code (follow the README)

```
cc -o example -O example_calc_e.c
```

1. Test the example on the dev node

```
./example
```

1. Review the submission script

```
cat example.sh
```

1. Run the the example on the “cluster”

```
qsub example.sh
```

1. Review the output

```
cat slurm*
```

## Linux on the HPC

**Exercise:** List default HPC modules with the **module list** command



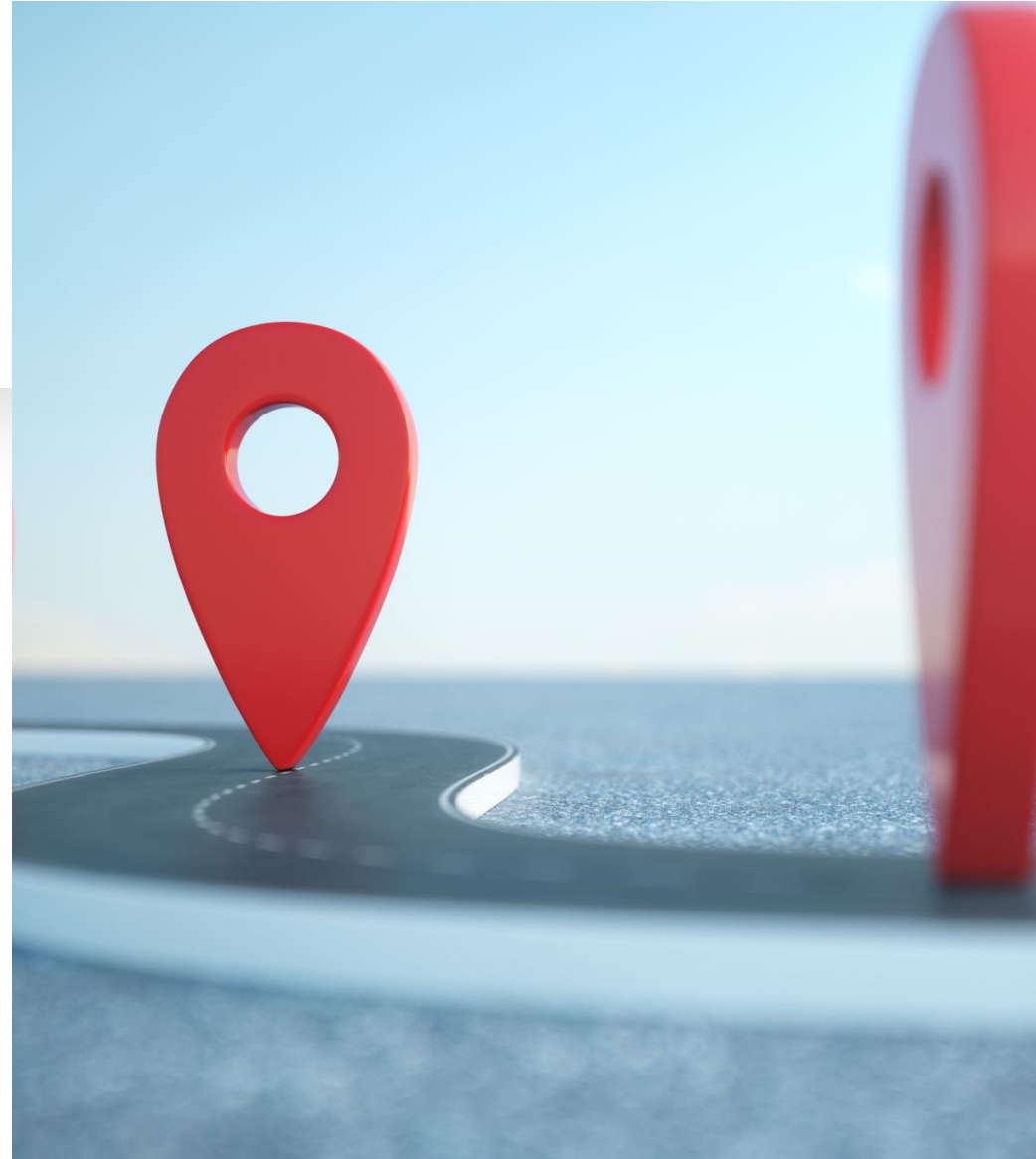
```
[parvizim@dev-intel18 ~]$  
[parvizim@dev-intel18 ~]$ module list  
  
Currently Loaded Modules:  
1) GCCcore/6.4.0      7) OpenBLAS/0.2.20      13) CMake/3.11.1      19) libffi/3.2.1  
2) binutils/2.28     8) FFTW/3.3.7          14) ncurses/6.0       20) Python/3.6.4  
3) GNU/6.4.0-2.28   9) ScaLAPACK/2.0.2-OpenBLAS-0.2.20 15) libreadline/7.0  21) Java/1.8.0_152  
4) OpenMPI/2.1.2    10) bzip2/1.0.6         16) Tcl/8.6.8         22) MATLAB/2018a  
5) tbb/2018_U3      11) zlib/1.2.11        17) SQLite/3.21.0  
6) imkl/2018.1.163  12) Boost/1.67.0       18) GMP/6.1.2
```

**Type in Your Terminal:**

**[user@computer] \$ module list**

# Read the Docs

- <http://docs.icer.msu.edu>







# Questions?

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[colbrydi@msu.edu](mailto:colbrydi@msu.edu)

<http://contact.icer.msu.edu>