



**CSC 345**

**Operating System**

Box Leangsuksun

[www.latech.edu/~box](http://www.latech.edu/~box)



## Box's 1 minute Bio

- **PhD in CS (1995):**
  - PhD Thesis: Resource management/allocation in Heterogeneous Parallel Distributed Computing
- **7 years in industry labs (Bell-Labs, Lucent Technologies)**
  - Highly Reliable Software/system (IN, Service Management)
  - Architect, PM, Tech lead (15-30 team size)
  - R&D -> 4 major network management products
- **Associate Professor in CS since 2002.**
  - 15 graduate students (4 PhD)
- **Research Interest**
  - Cluster computing, Fault Tolerance OS/Runtime, Reliability, Availability and Serviceability and Security (RASS) in HPC/HEC, Software Engineering
- **Services**
  - IEEE Cluster Computing Program committee member 2004-2005
  - A founder and CO-Chair: High Availability and Performance Computing 2003-2004
  - 2003 Outstanding Teach Award, COES, Louisiana Tech U.
  - Creator of [www.searchkatrina.org](http://www.searchkatrina.org)

Appeared in a front cover in two major Linux magazines, various technical papers, research exhibitions.

web site: <http://xcr.cenit.latech.edu/ha-oscar>

HA-OSCAR beta was released to open source community in March 2004





## Research Collaborators

- National, Academic and Industry Labs

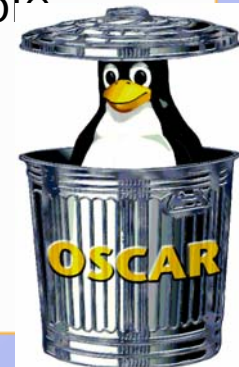
OAK RIDGE NATIONAL LABORATORY

MANAGED BY UT-BATTELLE FOR THE DEPARTMENT OF ENERGY

- ORNL
- Intel, Dell, Ericsson
- Lucent, CRAY
- IU, NCSA, OSU, NCSU, UNM, TTU, UIUC, ASU
- Systran
- Sandia, Ames



- More on the way; US Army, NetQoS, MIT, IBM, Apple



# Intro to Linux/Unix (user commands)

Box





## What is Linux?

- Open Source Operating system
- Developed by Linus Trovaldsa the U. of Helsinki in Finland since 1991.
- Under GNU GPL, its source code is free for everyone to download and use.
- One of the most popular, esp for a server markets



- Source code can be modified to fit your need.
- Quite portable – good for new hardware products
- Supports various hardware platforms. Majority on x86
- True multi-tasking operating system.
- Being immunized against all kinds of viruses.



## Login

- Login at terminal/console, X-window
- Remote terminal – ssh
  - Putty – windows, [openssh.org](https://openssh.org)



## Putty login screen





## Navigate around and file/dir commands

- List a directory – ls
- Get more help – man %command
- Change directory – cd
- Forward slash in Linux/Unix
- Create directory – mkdir
- Remove file or dir – rm
- List a file content – cat , more



## Create/edit a file

- Vi
- Emacs
- Any of you favorite editor



## Compile and run your program

- Gcc – gnu c compiler
- G++ - C++
- Mpicc – mpi c compiler
- Default executable – a.out
  
- Run your program.
  - Make sure your \$PATH is set
  - ./a.out – normal program
  - Mpi – mpirun or qsub (pbs)...