http://www.cse.buffalo.edu/~kpcleary

Graduate Student Orientation
Friday, August 22, 2014

Where to Go for Help

Online documentation:
- CSE IT service catalog: http://services.cse.buffalo.edu
  - Documentation about CSE systems and software
  - Be sure to login with your UBIT username and password!
- UBIT: http://www.buffalo.edu/ubit.html
  - Software downloads
  - Virtual Computing Lab
  - Wireless connections
  - Printing
  - Other documentation
  - Policies

Log in
Where to Go for Help

Contact the UBIT Helpdesk for:
- Email problems
- Network or wireless issues
- Software or hardware problems in the public computing labs located in Capen or Lockwood
- Account or password issues
- Virtual Private Network (VPN) issues
- Virtual Computing Lab issues
- Printing Questions

The UBIT Helpdesk has a walk-in location at 214 Lockwood

Where to Go for Help

Contact cse-consult@buffalo.edu:
- Software or hardware problems in CSE specific labs:
  - Davis Hall Sunrays and kiosk machines
  - Baldy 21
  - Bonner 114
  - Research Labs in Davis Hall
- Questions or problems with CSE server or desktop systems.
  - Software installs
  - Account / password issues
  - Disk space
- Microsoft Dreamspark access
- Office or researcher computer setup information.

Contact senshelp@buffalo.edu for problems pertaining to the Bell 101 lab
Where to Go for Help

- Personal Computer hardware problems / repair:
  - **Vitec Solutions**, has an on-campus drop off location located in 214 Lockwood

CSE and UB Resources

- **Software**:
  - Academically licensed software is available from:
    - **UBIT**
      - Microsoft Office, Anti Virus, VPN Client, etc...
      - This software is paid for out of your student comprehensive fee
    - **CSE Microsoft Dreamspark** agreement
      - Microsoft titles including Windows 8.1 and Visual Studio
    - **CSE Vmware academic program** – Class or research-specific basis
Linux Accounts:
- Your CSE user name is the same as your **UBIT Name**.
- Your birthday and UB Card information are used to assign a default password.
  - Your default CSE password is the: **first four digits of your birthday (MMDD) + last six digits of your UB card**
  - For instance, if your birthday is June 16th and the last six digits of your UB Card are 123456, then your password should be 0616123456.

Windows Accounts
- On most machines your password will be your UBIT password.
- In some cases you may need to prefix your username with “ad\”
  - Ex: ad\kpcleary

Your CSE password
- **This password is not tied in any way to your UBIT password.**
  - Set a new password by logging into sol.cse.buffalo.edu and typing the `password` command. This will synchronize to other CSE systems within the hour.
  - If you forget your CSE password visit someone from the CSE IT staff (Maria in Davis 352, Ken in Davis 353, Kevin in Davis 354, or Chris in Davis 355).
  - Bring your UBID card or other photo ID!!
Resources CSE Provides You

Computer Resources

Access to various servers
- Timberlake (Linux) – short, interactive, timeshare jobs
- Dragonforce (Linux) – interactive graphical connections using the Oracle Virtual Desktop Client (OVDC).
- Metallica (Linux) – long-running, CPU-intensive, batch jobs
- Pollux (Solaris) – short, interactive, timeshare jobs
- Sol (Solaris) – account and password distribution. You should log into this machine to change your password.
- Coldplay (FreeBSD) – short, interactive, timeshare jobs
- Fork (FreeBSD) – CSE 421/521 ("Operating Systems") development and testing server. Only CSE 421/521 may compute on this system. Run processes that fork() or are CPU-intensive here.

CSE Resources

Access to web and database servers upon passing a quiz:

Access to file space
- Home Space, 512Mb
  - Backed up hourly and located on redundant drive arrays
  - Mounted to most CSE systems
  - Available remotely
- Additional research space is available upon request

Access to labs such as Baldy 21, Bonner 114 and Davis Hall
Kiosk and group work areas.
- Access granted to UBID card based on class registration.
- Equipment includes:
  - Windows PCs
  - Linux Red Hat Enterprise workstations and thin clients
How To:

Command line, interactive, remote logins

- Use an SSH client such as PuTTY or the “ssh” program from a MacOS X or linux terminal program.

How To:

Graphical, interactive, remote logins

- Oracle Virtual Desktop Client (OVDC).
- SSH
  - Windows: Download Xwin32 to tunnel graphics through SSH.
  - MacOS X: use the ssh –X command.
How To:

Access file space remotely

- File system mount:
  - Windows: Map drive to `\\lumier.cse.buffalo.edu\ubitname`
  - Check "Connect using different credentials"
  - MacOS X: Finder -> Go -> Connect to Server -> `smb://lumier.cse.buffalo.edu/ubitname`
  - "VPN client" is required
  - Use your *UBIT* username (prefixed with `ad\`). Ex. `ad\kpcleary`
  - Use your *UBIT* password
  - SFTP programs such as `filezilla`, `WinSCP`, `Fetch`

![Connect to Server](image)

Your Personal Computers

Be sure you have the following set up....

- **Automatic operating system updates**
- **Anti-virus software**
- **AnyConnect VPN client**
- **Host based firewalls**
- **Strong passwords** or pass phrases
- Separate administrative and user accounts
- Setup **UB Secure** for your laptops and smart devices
- Get into the habit of backing up important files
- **Physically** secure your PCs and laptops
- See [http://www.buffalo.edu/ubit/service-guides/safe-computing.html](http://www.buffalo.edu/ubit/service-guides/safe-computing.html) for more details
Demonstrations:

- **SSH access**
  - Process management
    - Using “top”
    - Using the kill command
  - Managing disk space
    - Checking your quota

- **Graphical Remote Access**
  - UB Virtual Computing Lab
  - Oracle Virtual Desktop Client (OVDC)

- **Remote Access**
  - Virtual Box

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**Duo Booting Vs Virtualization**

- **Operating system-level virtualization**
  - Software simulation of hardware resources.
  - Simulated resources can execute operating systems (OSs) and programs like real physical machines.
  - Software run on virtual machines is isolated from the underlying hardware resources.

- **Duo Booting**
  - Installing multiple OSs on a hard disk drive
    - This requires that the hard drive be partitioned into different sections for each OS.
  - At run time a special program called a “boot loader” will ask which OS you wish to have loaded.
  - Only one OS can run at a time.
Problems with duo-booting?

- Requires changes be made to the hard disk.
  - Resizing and partitioning can sometimes cause problems that result in data loss.
- Sometimes files are not shared between the OSs
- Ultimately one OS goes unused more often which increases the time until patches and anti virus definitions can be applied.

Compared to Virtualization:

- Virtual disk images expand on demand; make better use of drive space.
- Virtualization gives more flexibility for 2\textsuperscript{nd}, 3\textsuperscript{rd}, N\textsuperscript{th} OS installs.
- The isolation of the simulated hardware makes virtualization great for “Risky web Browsing”

When is Duo-Booting preferred over virtualization?

- When applications require a lot of CPU or memory resources
- When applications generate a lot of disk I/O
- When there is a high network link utilization that cannot be bound to a particular NIC

In short: Whenever you need the native speed and resources of an OS running on “bare metal”.