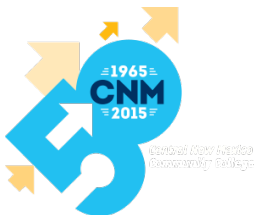


Virtual Computing Cloud for Education

Paul Clark
Chu Jong

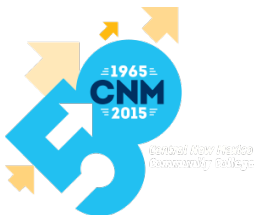
School of Business and Information Technology
Central New Mexico Community College

7th ECC Annual Conference
Marist College
Poughkeepsie, NY
June 14 – 16, 2015

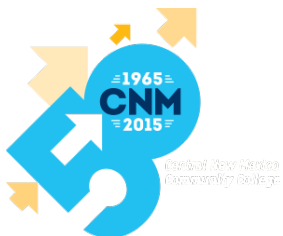


Virtual Computing Cloud for Education

- Introduction
- Virtual Computing System
- Course Development
- Experimental Results
- Roadmap



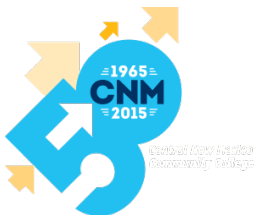
Virtual Computing Cloud for Education



What is it?

Similar to widely available services from about \$20/month and up

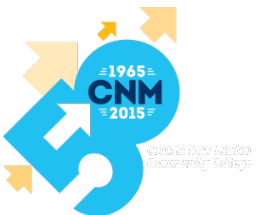
- ✓ Amazon EC2
- ✓ Rackspace
- ✓ Various local providers



How does it work?

- Host hardware and operating system
- Guest virtual servers exist as files

Provide the semblance of many distinct servers on the single host hardware



What can we do with it?

Boot server instances to:

- build, manage, configure web applications
- study server configuration and management
- install and configure software applications



What is the advantage?

Cost effective

- each student has full control of operating system and software without the cost of individual hardware

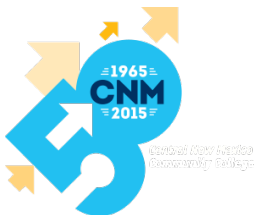
Persistent

- recover from error by reloading checkpoint images instead of re-installing and re-configuring



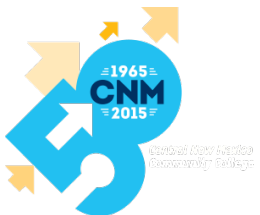
Pilot Course Development

- Web Technology Course Sequence
- Linux Operating System Course Sequence



Web Technology – Philosophy

- Closest to real application without purchasing individual hosting accounts
- New instructional topics not available when students used shared web publishing space on a single web server

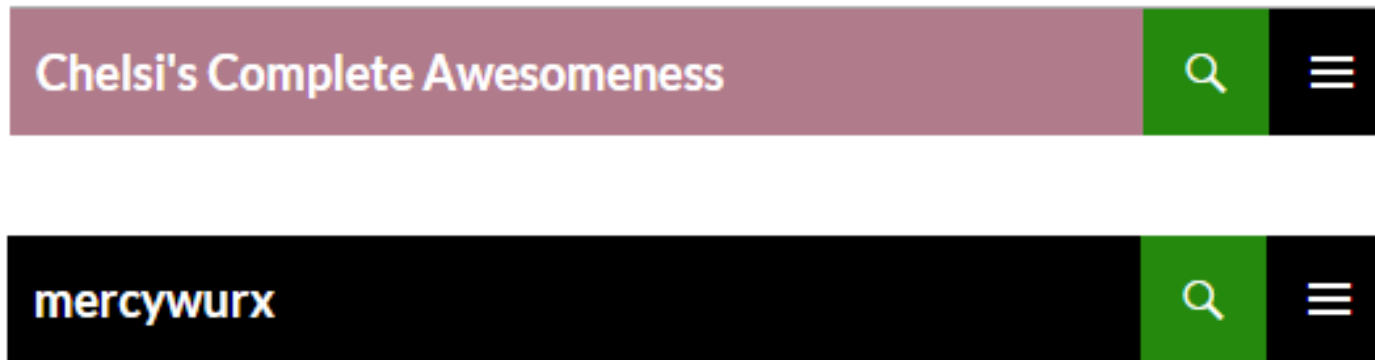


Web Technology – Details

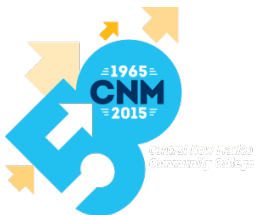
- Real-world Internet environment
- DNS nameserver
 - ✓ each student has own subdomain
- Full privileges
 - ✓ modify directives in Apache configuration file
 - ✓ work with Apache module
 - ✓ set up MySQL databases



Pride and Ownership



Students have their own domain and build websites from their personal interest.





Enjoy the unique taste!!

WELCOME

to all of my loyal fans or just people browsing the internet looking for their fix, my name is Muthalips for those of you gamers and Youtube freaks out there. This is my blog site and i made it, this one is mine, that is all.



Linux O/S – Philosophy

- System Hands-On and Ownership
 - ✓ Replace virtual Linux on individual workstation
- Teaching/Learning Assessment
 - ✓ instructor has more access to student work
 - ✓ especially in distance learning formats



Roadmap

Phase I

Infrastructure and pilot curriculum development
September 2014 to May 2015

Phase II

Data Collection and Performance Analysis
April 2015 to December 2015

Phase III

Accessibility and Scalability
September 2015 to May 20



Review and Assessment

Built in to each phase

