



Erich Spengler

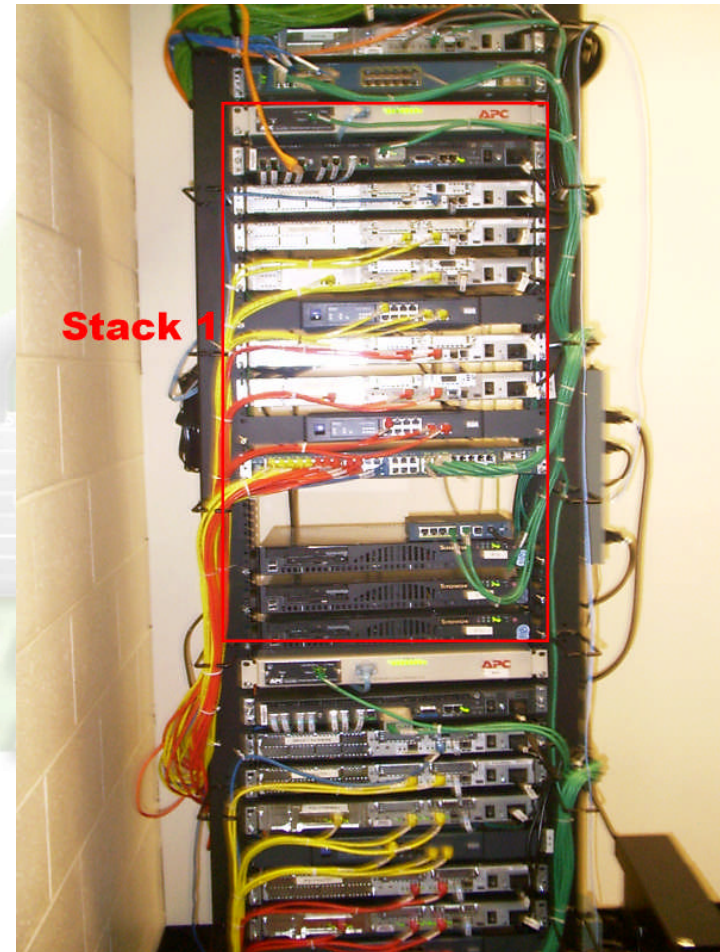
CSSIA

An overview of Remote Lab Design for Teaching



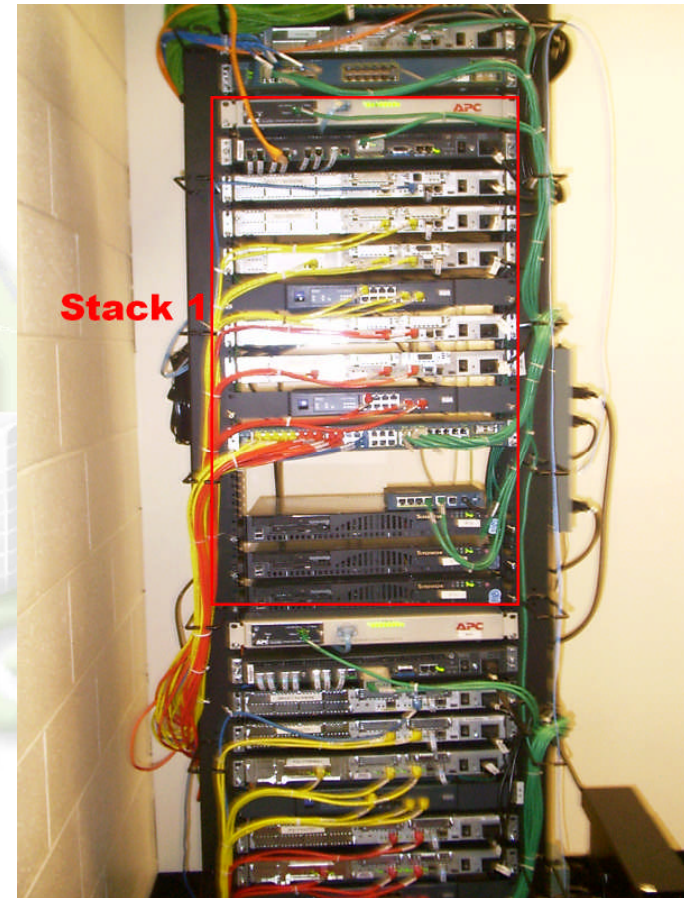
Topics for Discussion

- Why Remote Labs?
- Components
- Demo
- Examples of Usage



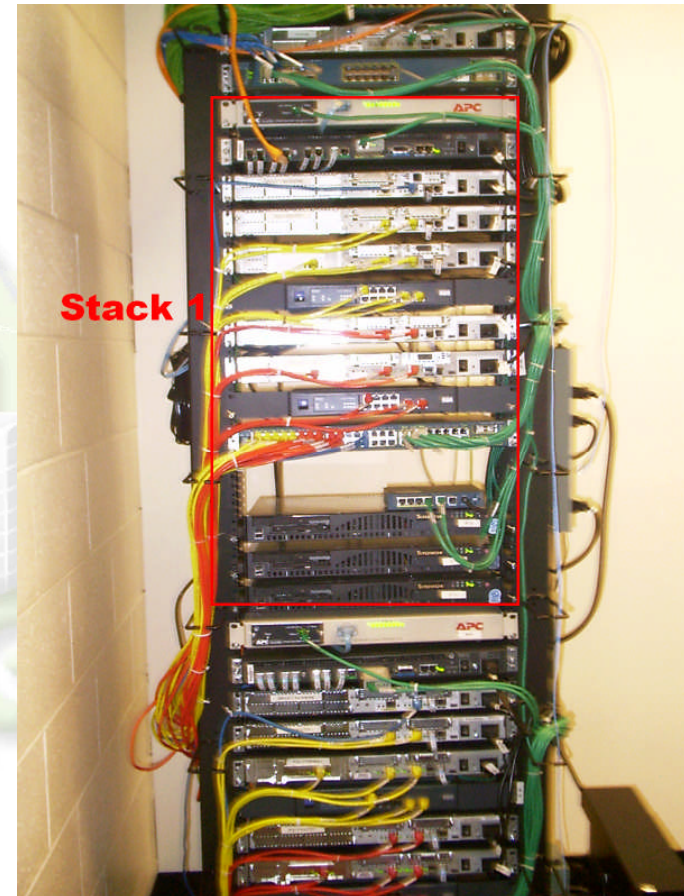
Why Remote Labs? Top Ten Reasons...

- Extending the Classroom
- Better Utilization of Equipment
- Security and Access
- Student Satisfaction
- Instructional Management
- New Curriculum Alternatives
- Standardization
- Lab Management
- Lab Utilization



Components...

- Network Design
 - Isolation
 - Integrated
- Remote Access Technology
 - Access Servers
 - Virtual Private Networks
 - 3rd Party Products
- Scheduling
 - RASSLE
 - Radius
- Lab Equipment for Students
 - Network Appliances
 - Servers and Virtual Machines

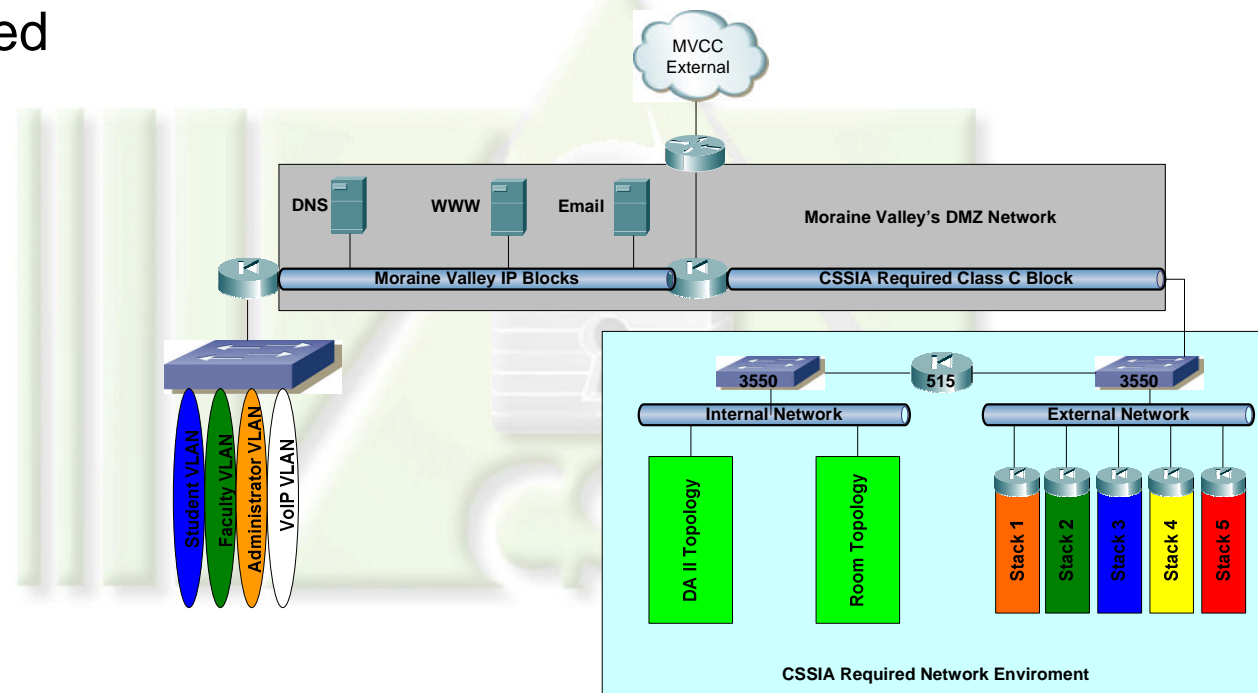


Network Design ...

- Network Design

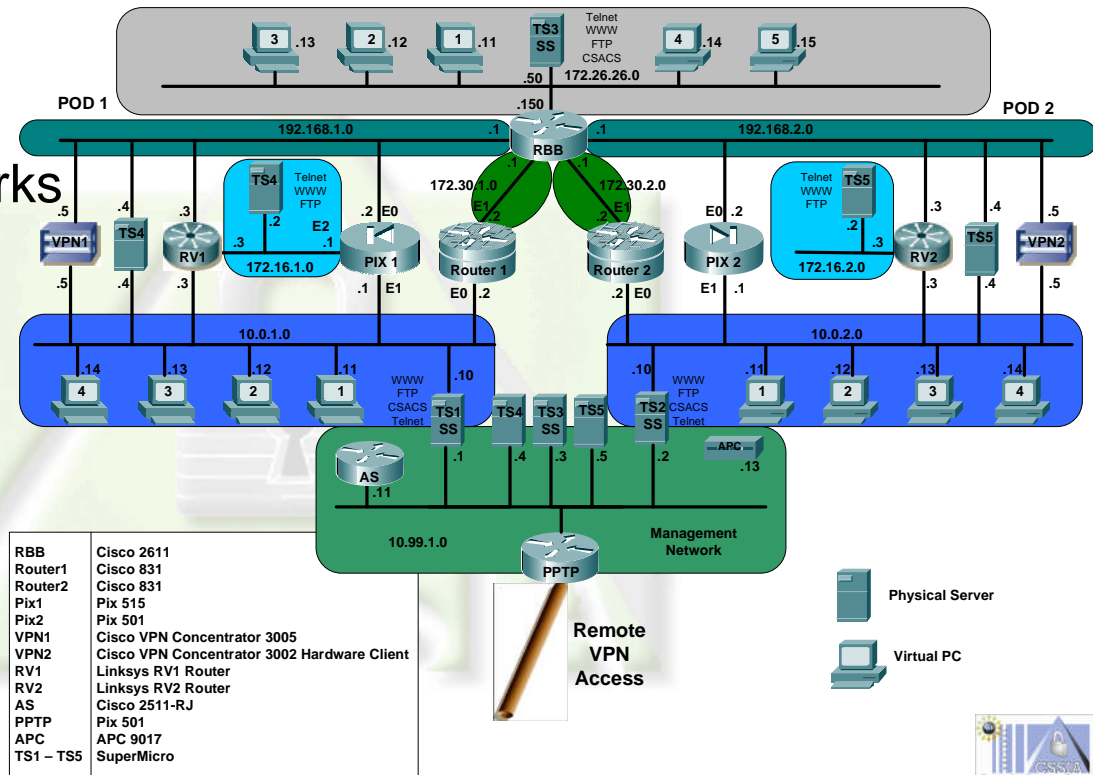
- Isolation
- Integrated

MVCC Lab Topology – School DMZ Implementation Requirements



Remote Access Technology ...

- Remote Access Technology
 - Access Servers
 - Virtual Private Networks
 - 3rd Party Products



Scheduling ...

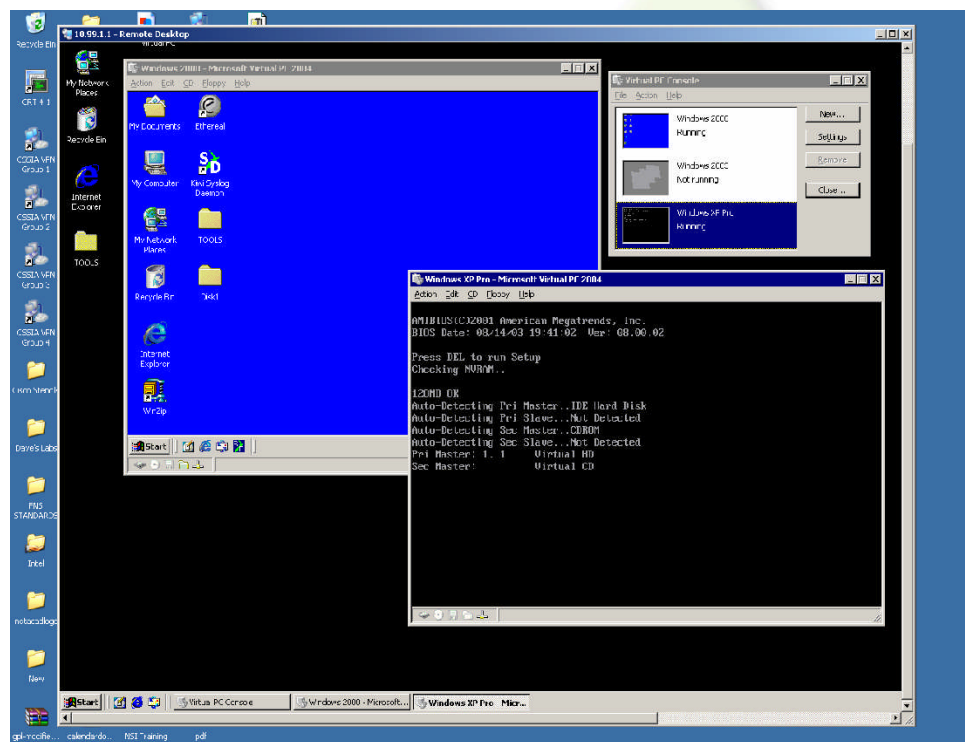
- Scheduling
 - RASSLE
 - NetLabs

The screenshot displays the 'View Schedule' interface of the Lab Resource Management Application. The browser window title is 'Lab Resource Management Application - Windows Internet Explorer'. The address bar shows the URL: http://rassle.morainevalley.edu/index.jsp?program_state=1&ts=1172029525943. The page content includes a 'View Schedule' header with navigation icons (Print, Refresh, Home, RSSIA). Below the header, the schedule is titled 'Schedule (starting on February 18, 2007)'. It features a dropdown menu for 'Group' set to 'MVCC_SRL(G)', 'Eq. Group' set to 'MVCC_SEC_LAB', and 'TZ' set to 'Central'. A 'Display' button is located below the dropdowns. The main schedule is a grid with columns for days of the week (Sun Feb 18 to Sat Feb 24) and rows for time slots from 12 AM to 4 PM. The grid cells are currently empty. To the right of the grid is a 'Calendar' section showing two monthly views: 'February 2007' and 'March 2007'. The February calendar has the 18th, 19th, 20th, 21st, 22nd, and 23rd highlighted in yellow. Below the calendars are 'Previous' and 'Next' navigation links and a note: 'Choose a day to select the corresponding detailed Weekly Schedule at left.' The browser's status bar at the bottom shows 'Internet' and '100%' zoom.



Components...

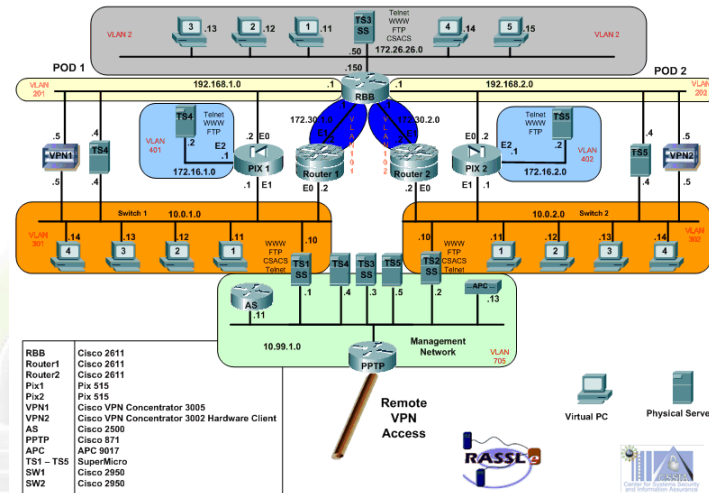
- Lab Equipment for Students
 - Network Appliances
 - Servers and Virtual Machines



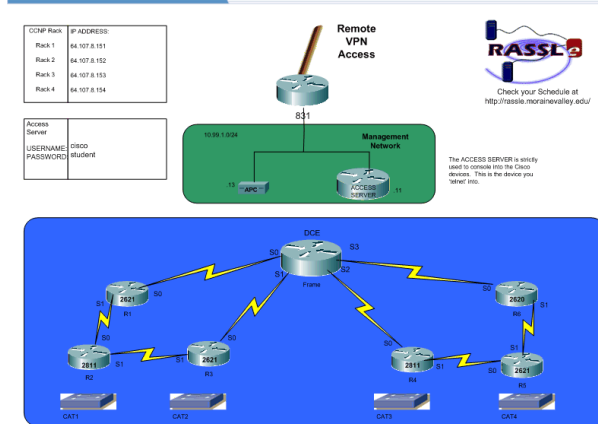
Curriculum Usage

- MVCC has:
 - 4 operational stacks for Network Security
 - 4 operational stacks for CCNA
 - 4 operational stacks for CCNP
- There are over 20 added stacks throughout the Midwest

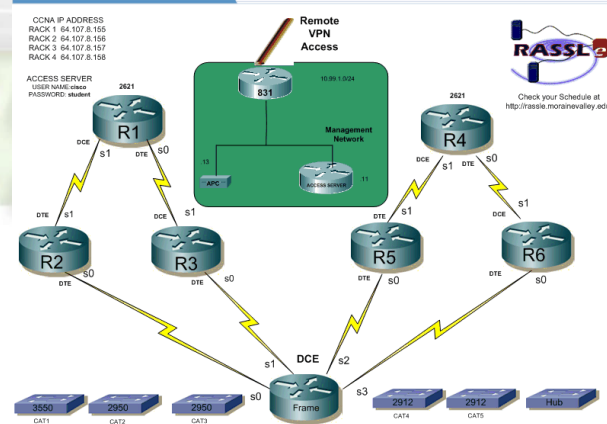
MVCC Lab Topology – Remote Security Lab Requirements



MVCC Cisco CCNP Layout

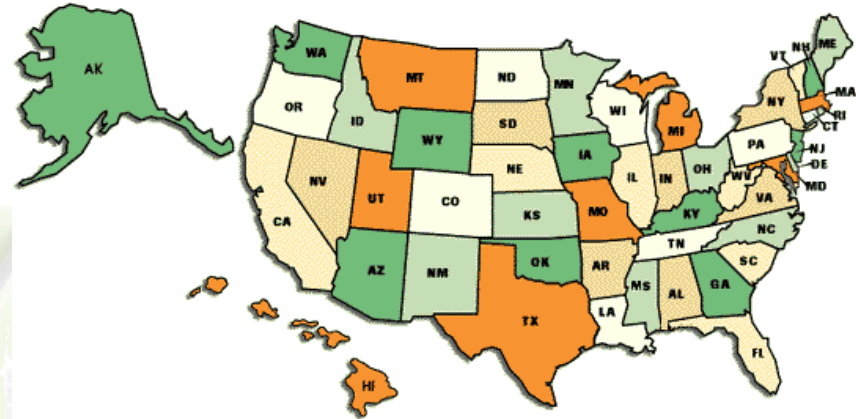


MVCC Cisco CCNA Layout



Remote Teaching

- The remote labs are able to be used by any instructor or student with authorization in the nation to do network security labs.



Remote Management

We strived to make our equipment capable of complete remote management so that students can do labs at school, home, or even at the office.



Sharing the Remote Labs

- Moraine Valley Community College is in the process of being the nerve center for all CSSIA Remote Labs across the Midwest to implement standards and a scheduling system for other colleges that do not have the funds to buy the equipment.



Thank you

