Data Center Consolidation@Illinois

Developing a Community Driven Roadmap
Alice Jones and Sol Roberts-Lieb
Agenda

- Why Consolidate? Why Now?
- Who is working on this?
- Where are we consolidating?
- What is known?
- What isn’t known?
- How do I participate?
Why Consolidate?
Why Now?

- Power Savings = Cost Savings
- Administrative Review & Restructuring (ARR)
  - Recommendation 23: Consolidate data centers and decommission small server installations
Current Urbana Data Center Statistics

Campus Data Centers, Server & Multi Use Rooms

- Data Centers: 58,501 Sq. Ft.
- Server Rooms: 8,001 Sq. Ft.
- Multi Use Rooms: 7,929 Sq. Ft.
- Other: 611 Sq. Ft.

Total Area = 75,041 sq ft.
Current Urbana Data Center Statistics

# of Campus Data Centers, Server & Multi Use Rooms

- Multi Use Rooms: 27 (18%)
- Server Rooms: 56 (37%)
- Data Centers: 65 (43%)
- Other: 3 (2%)
Current Urbana Data Center Statistics

Campus Computer Room Sizes

- Large # of rooms, Good opportunity for Consolidation & Savings
  - 80% of rooms < 500 SF (121 of 151)
  - 50% of rooms < 200 SF (74 of 151)
Urbana Data Center Map

- 33 Data Centers on Campus
The Whos

- Executive Governance Committee for Data Center Consolidation (EGCDCC)
- Data Center Operations Committee (DCOC)
- Everyone around campus
Reporting Structure

President of the University of Illinois

Office of the Chancellor

Office of the Provost

Executive Governance Committee for Data Center Consolidation (EGCDCC)

Data Center Operational Committee (DCOC)
Executive Governance Committee for Data Center Consolidation (EGCDCC)

- Bill Goodman (Chair)
- Randy Cetin
- Erik Hege
- Michael Hites
- Paul Hixson
- Craig Jackson
- Alice Jones
- James Quisenberry
- Tony Rimovsky
- Sol Roberts-Lieb
- Beth Sandore
- John Towns
- Chuck Thompson
EGCDCC Charges

- Demonstrate significant server room & data center consolidation
- Reduce the recurring cost of campus data center & server rooms
- Maximize the use of existing resources and facilities for data center space requirements
EGCDCC AY11 Deliverables

- Identify and formalize decision making roles, responsibilities and authority
- FY12 estimates for one-time investments in facility upgrades
- Estimate for on-going operational expenses
- Strategy for sustainable funding
Data Center Operational Committee (DCOC)

- Alice Jones (Co-Chair)
- Sol Roberts-Lieb (Co-Chair)
- Corey Betka
- Thomas Durbin
- Mike Edwards
- Joel Franzen
- David Gerstenecker
- Jason Strutz
DCOC High Level Approach
Data Center Consolidation: Four Areas

- Communication
- Functional Requirements
- Best Practices
- Operational Responsibilities
Where?

- Initially
  - HAB/DCL – Mid Tier computing
  - ACB: Research computing
  - RRB: Disaster Recovery
Campus Data Center Facilities Plan Concept

11/4/10

Urbana

DCL Mid Tier
2 rooms
2400 SF

HAB Mid Tier
2 rooms
4200 SF

Other Shared Campus Data Centers

RRB
Chicago RRB
2 Floors, 12,000SF,
DR/BCP & HA

ACB Research & Innovation
3 flrs, 16,000 SF

Rm. 200
Rm. 202
Rm. 301

3 shared campus facilities 23,600 SF

Off Campus

Network

Campus

Possible Future Locations
What is Known

- Components of a Shared Facility
- Services to be Offered
- Workflow to Enter a Shared Facility
- Initial Communication Plan and Timelines
Components of Tiered Data Center
(Functional Requirements)

- Business Continuity Plan
- Cooling
- Disaster Recovery
- Physical Security
- Power
- Network
- Space/Facility
Shared Data Center Services Draft (Operational Responsibility)

- **Offered by DCOC**
  - Access / Physical Security
  - Change Control
  - Consulting Services
  - Disaster Recovery and BCP
  - Facility Management
  - Infrastructure Management
  - Installation
  - Monitoring
  - Recommended Platforms
  - Support and Maintenance

- **Offered by Campus Partners**
  - Application
  - Backup Management
  - Cluster Management
  - Database Administration
  - Storage Management
  - Server OS Support
  - Virtualization
  - Web Hosting
  - Others
Communication Outlets and Timelines

- **Outlets:**
  - January 28\(^{th}\) : Caffeine Break
  - [http://go.illinois.edu/datacenter](http://go.illinois.edu/datacenter)
  - Face to Face meetings
  - Quarterly updates to stakeholders
  - Suggestions?

- **Timelines:**
  - Services list finalized by January 2011
  - Cost Model completed by Spring 2011
  - Meetings with machine room owners throughout 2011
What isn’t known?

- How much is it going to cost?
- What incentives may become available?
- What forms, procedures, and policies will be defined?
# Data Center Possible Chargeback Model

**Overall Goal:** Provide Data Center Services in a Cost Neutral Manner

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Early Conversations on Consolidation

- ACES ITCS: David Gerstenecker
- Atmospheric Sciences: David Wojtowicz
- Campus Research Cluster: Mike Heath and John Towns
- College of Engineering: Chuck Thompson
- GSLIS: Eric Hege
- Library: Jason Strutz
- OTM: Mike Bohlmann
- UI Foundation: Steve Camp
- Unified Communications: Tony Rimovsky
How Can I Participate?

- Provide feedback to forms and policies
- Participate in a mock data center move
- Become an early adopter
Are you ready?

Contact the DCOC group: ops-4dccc@listserv.illinois.edu

Please provide feedback: http://go.illinois.edu/dcfeedback