Datacenter Move 2014 – Town Hall Four
NOVEMBER 7, 2014
Welcome

• Thanks for coming!
• Fourth of five planned “Town Halls”

Agenda

• Move two review
• Timeline
• Move three systems
• Anatomy of the move
• Floor plan

• Rack elevation
• Post move three
• Change management
• Communication plan
• Q & A
Move Two Recap

- Thank you!
- Excellent teamwork across HMS IT and HMS departments
- Overall, a successful move, delivered ahead of schedule
- We again benefitted from a “dry run” 3 days before the actual move
- A number of lessons were learned during the process
Move Two Recap

- Overall, the move was successful
  - Two non SAN dependent services were back up by 8pm Friday
    - Biopolymers Facility
    - West Quad Computing
  - Physical hardware moves completed by 2am Saturday
  - The SAN and NAS was back up an operational by 10:30am Saturday
  - Services started to come back online from noon Saturday
  - All services were restored by 7pm Saturday
Move Two Recap

• Post move issues were minimal
  ◦ There were no hardware failures as a result of the move
  ◦ SAN/NAS
    • The NAS would not authenticate SMB clients
      ◦ Resolved quickly by rebooting the data mover
    • The write cache on the SAN was disabled
      ◦ This was a result of a power supply being connected to the incorrect power source
  ◦ Cabling
    • Two servers were cabled incorrectly
      ◦ This was troubleshooted and resolved relatively quickly
Move Two Recap

• Communication
  ◦ Communication was critical to the success of move two
  ◦ Pre move engagement
    • Eric kept all parties up to date ahead of the move via email and engaged in face to face meetings with groups to explain the move process and set expectations
    • Lauren ensured accurate and timely quad wide notifications
    • System and service owners notified their users of the move
  ◦ Move day
    • Conference calls
      ◦ Four conference calls; 9am, 12pm, 3pm, 6pm
      ◦ Very well attended – thank you!
      ◦ Great feedback and participation
    • Email
      ◦ Eric notified folks outside of the conference calls as systems and services became available
Move Two Recap

• Lessons learned
  ◦ Planning is critical – the dry run and table top exercises were key
  ◦ Timing
    • The physical move met expectations
    • Cabling of the systems took longer than expected
  ◦ Vendor management can make (or break) the day
  ◦ A solid communication plan, both prior to and during, the move is critical
Timeline/Key Dates

- **Jan 2014**: Sign Contract
- **Aug**: Data Center Build-out
- **Sept**: Move 1 9/12 – 9/14, Dry run
- **Oct**: Move 2 10/24 – 10/26
- **Nov**: TH3 9/30, TH4 11/7
- **Dec**: Move 3 12/5 5pm – 12/8 midnight
- **2015 Jan**: TH5

Moves have to be Complete

Move 3 planning
Remaining Systems

- West Quad Computing
  - Gygi lab systems
  - Red Sea cluster
  - Maya cluster
- Genetics
  - Plan B
  - Odin
- MBIB
  - Four systems
- HMS Security
  - NVR systems
- A full list of systems will be posted to the wiki - wiki.med.harvard.edu/IT/DataCenterMove2014/
Anatomy of a move

• **Four move group elements**
  ◦ System owners and application owners
    • Responsible for powering down their systems
    • Responsible for bringing up and testing applications after their systems have been moved
  ◦ Zensar engineers
    • Responsible for un-patching cables and de-racking systems
    • Responsible for packing systems into boxes and carts
    • Responsible for re-racking and cabling systems
    • Responsible for systems passing POST
  ◦ Zensar movers
    • Responsible for moving packed systems from one room to another
  ◦ HMS Team
    • Communication
    • On hand to resolve any network issues in the new space
    • On hand to answer questions and resolve issues
Anatomy of a move

• Ahead of move
  ◦ Labeling
    • Systems will be labeled ahead of the move, including all network interfaces
  ◦ Documentation
    • Rack elevations/move map
    • Method of procedure for each type of system to be moved
  ◦ Network
    • New network in place and tested
    • Network cables will be pre-labeled, connected to the correct switch ports, and in place in each rack
  ◦ Supplies
    • Order custom made move boxes for hard drives
Anatomy of a move

• Ahead of move
  ◦ Planning and testing
    • Tabletop exercise
      ◦ Plan out each step of the move, who does what, why, and where
    • Test move
      ◦ Identify systems that can move ahead of the move date to validate MOPs
  ◦ Change management
    • Single RFC for data center move, requested by the infrastructure group
    • Multiple RFCs for impacted services, requested by the system/application owner
  ◦ Communication
    • Town hall meetings
    • Quad wide email notification
    • Service specific email notifications
      ◦ e.g. application_outage, orchestra_announce email lists
    • System owners are responsible for communicating with the application owners
    • Application owners are responsible to communicating with the end users
Anatomy of a move

• Move – beginning 5pm 12/5
  ◦ System owners will shutdown applications and power off systems
  ◦ Zensar engineers will un-cable, de-rack, and securely pack the systems ready to be moved
  ◦ Zensar movers will move the systems to a staging area near the new space
  ◦ Zensar movers will move the systems to their new rack locations as engineers are available
  ◦ Zensar engineers will unpack, rack, and re-cable the systems in their new locations
Anatomy of a move

• Post move
  ◦ Zensar engineers and system owners will power on the system and verify that it passes POST
  ◦ System owners will sign off that the physical system has been moved successfully
  ◦ System owners will notify application owners that the system has been moved and that applications can be brought up and tested
  ◦ Application owners need to report back to the system owners that applications are functioning as expected

• Post Implementation Review (PIR)
  ◦ Review entire move from planning to completion
  ◦ Provide lessons learned
  ◦ Present at Data Center Move Town Hall five
Anatomy of a move - Communication

- **Move Team**
  - Notify that system is ready to be powered on
  - Notify that system and applications are working as expected

- **System Owners**
  - Notify that application is ready to be started and tested
  - Notify that applications are working as expected

- **Application Owners**
  - Notify that applications are available for use
  - Notify that applications are working as expected

- **End Users**
Move Accommodations

• Workspace
  ◦ Table and chairs
  ◦ HMS Private wireless
  ◦ Wired network connections
  ◦ Printing
  ◦ Markley also has conference rooms available

• Comfort
  ◦ Food will be provided
  ◦ Markley has comfortable communal space
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Change Management

- The HMS IT Change Management system of record is STAT
  - [http://stat.med.harvard.edu/](http://stat.med.harvard.edu/)
- Each of the planned physical moves will be considered a single change in STAT, and will have a corresponding request for change (RFC) STAT ticket
  - First move RFC CHG0031326
- We encourage stakeholders to create their own RFCs, either within STAT or within their own Change Control system
  - research.files.med.harvard.edu storage RFC CHG0031351
  - Orchestra compute cluster RFC CHG0031362
- If changes other than physical location are made during, before, or after the physical move, an additional RFC ticket should be created
Communication Plan

• Town Hall Meetings
• DataCenterMove2014@hms.harvard.edu listserv
• Wiki: wiki.med.harvard.edu/IT/DataCenterMove2014/
• Campus-wide email announcements
• Email announcements to target groups (orchestra_announce@hms…)
• Move-group meetings
• Move run-throughs
Post Move Three

• Systems not moved by the end of move 3
  ◦ Any systems that remain in the 4th floor data center space will be powered off and removed Friday 12/12
  ◦ Any hard drives will be removed and the systems disposed of by 1/30/14
    • Hard drives will be given to a representative from the department that owned the system
Data Center Move 2104 Town Hall Calendar

• Tuesday, 11am-1pm, Armenise Amphitheater

• Town Hall One – July 22, 2014
• Town Hall Two – Aug. 26, 2014
• Town Hall Three – Sept. 30, 2014
• Town Hall Four – Nov. 7, 2014 (Today)
• Town Hall Five – Dec., 2014
Thank you!

wiki.med.harvard.edu/IT/DataCenterMove2014/

datacentermove2014replies@hms.harvard.edu