FAA Data Center Consolidation Initiative

Lessons Learned: Large and Small Scale Data Center Consolidation, plus Application Mapping Pilot

By: FAA DCCI Program Office
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Agenda

• Aviation Safety (AVS) Regulation and Certification Infrastructure for System Safety (RCISS)
  – Data Center Infrastructure and IT Assets Consolidation

• Application Mapping Pilot (AMP)
RCISS – Definition of Program

• RCISS is an existing technology refreshment program funded to upgrade and maintain the safety critical AVS enterprise IT infrastructure.

• RCISS provides next generation of AVS’s IT infrastructure, designed to support AVS safety workforce as employees become increasingly mobile and reliant on virtual workplaces.
RCISS - Business Problem/Issue

- Affordability
- Disparate processes, hardware, and software standards
- Wasted resources (storage/network/server/SW licensing)
RCISS - Solution / Targeted Outcome

• Consolidate server/backup/storage infrastructure
• Develop standardized HW/SW platforms
• Develop standardized Data Center processes
RCISS - Key Implementation Steps

- Connectivity between Data Centers
- VLAN extensions
- SAN Fabric extension
- Collapse of legacy data center Virtual Center and VM infrastructure
- Space consolidation, purchase more space efficient HW on lifecycles.
- Process uniformity
- Development of standardized HW/SW platforms
  - Backup HW/Backup Methodology
  - Monitoring and Reporting
  - Servers
  - Tool Sets (IP tracking SW, management portals)
RCISSL - End Result / ROI / Benefits

• Labor Reduction of 2-3 CTR positions ($225k) (2 realized right now)
• Facility Saving (Generator upgrade/CRACs)
• Consistent LOB policies applied
• Focused skill sets (training savings/contact uniformity for labor)
• Standardized HW/SW platforms
• Reduced complexity – fewer DCs to support
RCISS - Lessons Learned

• Vendor savings (leveraging standards)
• Team building is important throughout the transition
• The technical is not the issue, it is the culture
• Plan, Plan, Plan then TEST. Have a failback plan. Document the plan, have weekly review meetings with the different DC leads.
• Communication is paramount in keeping projects on track
• It will cost more than expected, and it will take longer than projected.
AMP- Business Problem/Issue

• Develop a workable approach to Application Mapping (Phase 2 of FDCCI mandate)
  – Gather Infrastructure Use & Application Inventory data
  – Utilize questionnaires for pilot data center participants (3 Headquarter and 2 Regional)
    • Automated tool was not available or were difficult to deploy
  – Perform application mapping on small scale
  – Verify that the approach is viable and produces the desired results
AMP - Solution/Targeted Outcome

• **Answer key application mapping questions:**
  – What applications are in each physical space and what customers are being supported?
  – What applications are on which servers and what are the technical and business requirements?
  – How do applications relate to each other and what are their dependencies?

• **Assess whether sample is representative**

• **Develop process and tools to use agency-wide**

• **Determine level of effort needed for full-scale application mapping**
AMP - Lessons Learned

- Limit manual application mapping: use automated tools to get reliable, useful data
- Data collection gotcha: Inventory data may become stale quickly
- Map it visually: Visualization of data via mapping diagrams significantly enhances understanding of dependencies and improves risk assessment
- Speak the same language: Standard terms and definitions enhance information collection (e.g., data center, server room, LAN Room, Tier, application)
- Use Automated Tools/SMEs: Application dependency determination specific tools together with domain expertise