



ADOA - ASET

Arizona Strategic Enterprise Technology

Project Investment Justification

Version 01.01

A Statewide Standard Document for Information Technology Projects

Project Title:

ADHS Brocade Switch Refresh

Agency Name:	Arizona Department of Health Services
Date:	11/01/2013
Agency Contact Name:	Raghu Ramaswamy
Agency Contact Phone:	
Agency Contact Email:	

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I. Management Summary*

The Arizona Department of Health Services (ADHS) operates Brocade switch technology to connect the agency's Storage Area Network (SAN) to business critical applications, email, databases, and other essential information systems and network services. The ADHS shared SAN infrastructure is purpose-built to connect network storage to a variety of information systems and services. Brocade switches maximize application uptime and performance by enabling greater data center consolidation, operational efficiency, business continuity, scalability, reliability, all while offering 16 Gigabits per second (Gbps) performance in our high-speed SAN infrastructure.

II. Project Investment Justification (PIJ) Type*

Yes No Is this document being provided for a Pre-PIJ / Assessment phase?

If Yes,

Identify any cost to be incurred during the Assessment phase.	\$0.00
Based on research done to date, provide a high-level estimate or range of development costs anticipated for the full PIJ.	\$100,000

Explain:

[Click here to enter text.](#)

Yes No Will a Request for Proposal (RFP) be issued as part of the Pre-PIJ or PIJ?

III. Business Case

A. **Business Problem***

The primary objective of this project is to replace two end-of-support Brocade 4900 SAN switches and related hardware with 2 new Brocade 6520 SAN switches. The Brocade 4900 SAN switch is a 64-port, high-performance switch ideal for a wide range of storage network applications, including use as a cost effective edge switch in core-to-edge designs that require high fan-out ratios and as a standalone switch with mid-to-high-end storage arrays. With features such as redundant, hot-swappable power and cooling components, and hot code activation for expansion, the Brocade 4900 SAN switch met our stringent enterprise requirements for reliability and high-availability. However, the existing Brocade 4900 SAN switch infrastructure will reach end-of-support February 28 2014 and must be replaced to prevent supportability issues, imminent failures, and increased maintenance costs.

B. **Proposed Business Solution***

The Brocade 6520 SAN switch is a 96-port, high-performance switch purpose-built for maximum flexibility allowing ADHS to deploy bandwidth on demand to meet our growing data center storage needs. The Brocade 6520 switch offers the capability to provide dynamic workloads and advanced functionality by delivering high-density fibre channel technology to our shared storage infrastructure. In addition, the Brocade 6520 SAN switch will meet the needs of the agency for the next 3 to 5 years.

C. **Quantified Benefits***

<input checked="" type="checkbox"/>	Service enhancement
<input type="checkbox"/>	Increased revenue
<input checked="" type="checkbox"/>	Cost reduction
<input checked="" type="checkbox"/>	Problem avoidance
<input checked="" type="checkbox"/>	Risk avoidance

Explain:

- **Service Enhancement** – The Brocade 6520 SAN switch is a 96-port, high-performance switch purpose-built for maximum flexibility allowing ADHS to deploy bandwidth on demand to meet our growing data center storage needs.
- **Cost Reduction** – The Brocade 6520 SAN switch also provides customizable health and performance dashboard views to pinpoint problems faster, simplify SAN configuration and management, and reduce operational costs by lowering the total cost of ownership versus keeping the Brocade 4900 SAN switch.
- **Problem Avoidance** – The Brocade 4900 SAN switch infrastructure will reach end-of-support February 28 2014 and must be replaced to prevent supportability issues, imminent failures, and increased maintenance costs. Replacing the Brocade 4900 switch will help the agency avoid pending problems.
- **Risk Avoidance** – There is imminent risk to business operations if the maintenance on the Brocade 4900 SAN switch expires and the agency experiences hardware failure with the asset. The Brocade 4900 SAN switch infrastructure will reach end-of-support February 28 2014 and must be replaced to prevent supportability issues, imminent failures, and increased maintenance costs. Imminent risk will be avoided by replacing the Brocade 4900 SAN switch.

IV. Technology Approach

A. **Proposed Technology Solution***

The Brocade 6520 SAN switch provides exceptional scalability, reliability, and 16 Gbps performance by enabling reliable operational efficiency and continuity. Brocade delivers the industry's leading SAN switch infrastructure by intelligently connecting, managing, and optimizing IT resources in ADHS shared storage environments. The Brocade 6520 SAN switch also provides customizable health and performance dashboard views to pinpoint problems faster, simplify SAN configuration and management, and reduce operational costs. Other features include the ability to identify and alert system administrators to device or Inter-Switch Link (ISL) congestion as well as abnormal levels of latency in the fabric. This feature works to automatically monitor and detect network congestion and latency in the fabric, providing visualization of bottlenecks in a connectivity map and product tree, and identifying exactly which devices and hosts are impacted by a bottlenecked port.

B. Technology Environment

In the existing technology environment, ADHS operates three SANs (Hitachi AMS1000, Hitachi AMS2300, & HP EVA6K), two Brocade 4900 SAN switches, one Oracle SL500 tape library, and a host of virtual and physical servers. The Brocade switches provide storage disks to each infrastructure component on demand or as needed. The Hitachi AMS1000 provides storage disks for the file server, email, Oracle data base instances, and SWAP space. The Hitachi AMS2300 provides storage disks for the file cluster nodes, VMware, Oracle data base instances, NFS shares, and Microsoft SQL data base instances. The HP EVA6K provides storage disks for the file server, email, backup staging, SWAP space, syslog's, UNIX zones, SFTP, Microsoft SQL data base instances, development, deduplication, Microsoft System Center Configuration Manager, and various application file data.

C. Selection Process

Since 2001, ADHS has utilized high-end Brocade SAN switches to provide connectivity for business critical information systems to the SAN. Brocade switches have proven to be efficient, scalable, reliable, and cost effective. Brocade owns a majority of the enterprise fibre channel switch market; several large IT companies such as Dell and HP, also use the Brocade brand in their packaged systems. Our research revealed, "Brocade solutions are used in over 90 percent of Global 1000 data centers as well as in enterprise LANs and the largest service provider networks."

V. Project Approach

A. Project Schedule*

Project Start Date: 10/23/2013 **Project End Date:** 1/7/2014

B. Project Milestones

Major Milestones	Start Date	Finish Date
1. Procure hardware	10/24/2013	10/24/2013
2. Receive hardware	11/25/2013	11/22/2013
3. Install\deploy hardware	12/2/2013	12/23/2013
4. Verify configuration	12/23/2013	12/27/2013
5. Go Live	1/7/2014	1/7/2014

VI. Roles and Responsibilities

A. Project Roles and Responsibilities

1.0 Project Sponsor – Janet Mullen, PhD, Deputy Director Operations & Planning – This position will provide approval for project scope. Specific responsibilities will include (but not be limited to):

- Project champion, provides direction and support to the team
- Approves project scope and funding and sets the priority.

2.0 Information Technology Executive – Paula Mattingly, Assistant Director / Chief Information Officer - This position will be accountable to place the necessary Information Technology at the Enterprise level and to meet the goals within the budget and timeline. Specific responsibilities will include (but not be limited to):

- Project champion, provides direction and support to ITS team
- Implement necessary Infrastructure and meet the immediate business needs
- Monitoring business value
- Management of IT staff or other resources

3.0 Information Technology Project Manager – Dave Gilbert, Technical Services Manager - This position will provide leadership and overall project management and efforts described in this document and for the future technology needs of the Department.

4.0 UNIX Administrator - This position will provide technical analysis, software configuration, testing and deployment support. Specific responsibilities will include (but not be limited to):

- Monitor installation
- Verify configuration and system outputs

5.0 Receiving – This position will tag the equipment prior to installation and configuration.

B. Project Manager Certification

- Project Management Professional (PMP) Certified
- State of Arizona Certified
- Project Management Certification not required

C. Full-Time Employee (FTE) Project Hours

Total Full-Time Employee Hours	0
Total Full-Time Employee Cost	\$0

VII. Risk Matrix, Areas of Impact, Itemized List, PIJ Financials

VIII. Project Approvals

A. Agency CIO Review*

Key Management Information	Yes	No
1. Is this project for a mission-critical application system?	X	
2. Is this project referenced in your agency's Strategic IT Plan?	X	
3. Is this project in compliance with all agency and State standards and policies for network, security, platform, software/application, and/or data/information as defined in http://aset.azdoa.gov/security/policies-standards-and-procedures , and applicable to this project? If NO , explain in detail in the "XI. Additional Information" section below.	X	
4. Will this project transmit, store, or process sensitive, confidential or Personally Identifiable Information (PII) data? If YES , in the "XI. Additional Information" section below, describe what security controls are being put in place to protect the data.	X	
5. Is this project in compliance with the Arizona Revised Statutes (A.R.S.) and GRRC rules?	X	
6. Is this project in compliance with the statewide policy regarding the accessibility to equipment and information technology for citizens with disabilities?	X	

B. Project Values*

The following table should be populated with summary information from other sections of the PIJ.

Description	Section	Number or Cost
Assessment Cost (if applicable for Pre-PIJ)	II. PIJ Type - Pre-PIJ Assessment Cost	\$
Total Development Cost	VII. PIJ Financials tab	\$97,032.81
Total Project Cost	VII. PIJ Financials tab	\$97,032.81
FTE Hours	VI. Roles and Responsibilities	

C. Agency Approvals*

Contact	Printed Name	Signature	Email and Phone
Agency Contact:	Raghu Ramaswamy		
Project Manager:	Dave Gilbert		
Agency CIO:	Paula Mattingly		
Agency CFO:	Jim Humble		
Agency Deputy Director:	Janet Mullen		

- IX. Optional Attachments
- X. Glossary
- XI. Additional Information

Links:

[ADOA-ASET Website](#)

[ADOA-ASET Project Investment Justification Information Templates and Contacts](#)

Email Addresses:

[Strategic Oversight](#)

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