



ADOA - ASET

Arizona Strategic Enterprise Technology

Project Investment Justification

Version 01.01

A Statewide Standard Document for Information Technology Projects

Project Title:

ADHS Storage Area Network (SAN) Expansion

Agency Name:	Arizona Department of Health
Date:	1/26/2015
Agency Contact Name:	Raghu Ramaswamy
Agency Contact Phone:	
Agency Contact Email:	

I. Management Summary*

The primary objective of this project is to add network storage to an existing network storage array. The network storage array being replaced reached end-of-life and end-of-support November 30 2014.

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
Based on research done to date, provide a high-level estimate or range of development costs anticipated for the full PIJ.	\$0

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 agency currently has a Hitachi AMS 1000 network storage array, which contains over 85 Terabytes of agency data and has reached both end-of-life and end-of-support as of November 30 2014. Earlier this fiscal-year via PIJ ID HS14007, the agency purchased a scalable network storage array to consolidate over 120TB of other agency data from two storage arrays into one primary storage array. The agency would like to leverage the scalable network storage array to replace the Hitachi AMS 1000 by adding storage to the newer scalable storage array.

B. Proposed Business Solution*

The scalable SAN solution is EMC's VNX 5600. The EMC VNX 5600 is scalable up to 500 Terabytes RAW, which is sufficient to store the agency's current and future data and to support RAID level 6. The anticipated life cycle of the EMC VNX 5600 is between 5 to 8 years. The agency plans to procure 101 Terabytes RAW to expand the EMC VNX 5600 storage array.

C. Quantified Benefits*

- Service enhancement
- Increased revenue
- Cost reduction
- Problem avoidance

Risk avoidance

Explain:

Service Enhancement:

- Reduces capacity requirements with block-based deduplication and compression
- Uses EMC Unisphere Management Suite for system management and monitoring
- Upgradeable to unified block and file storage
- VNX Flash Optimized Starter Bundles provide for scaling up to 500 drives, depending on the VNX storage array selected.

Cost Reduction:

- The agency will decommission the Hitachi AMS 1000 SAN array—the agency expects a cost avoidance of \$22,338 in annual maintenance and \$15,120 in hotel fees. The result is a total cost avoidance of \$37,458 realized after migrating to the existing EMC VNX 5600 versus replacing the Hitachi AMS 1000 with a similar solution.
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Problem Avoidance:

- The VNX 5600 has fast performance, protection, compliance, and ease of management. The centralized management platform provides easy administration.

IV. Technology Approach

A. *Proposed Technology Solution**

The technology will solve the business problem by delivering a scalable solution capable of storing agency data, providing improved performance, and decreased failure rates. This implementation will also lower hotel fees and reduces annual maintenance cost. The EMC VNX 5600 is a high-performing unified storage solution optimized for virtual applications. The EMC SAN has transactional performance with increased bandwidth and low latency for efficient data storage. The existing EMC SAN performs well in the highly virtualized enterprise environment. The EMC VNX series performs optimally with SQL server and Oracle databases.

Key features:

- Up to 500 Terabytes capacity
- Up to 2.0 Terabytes FAST Cache
- Protocol – FC, FCoE, NFS, CIFS, iSCSI
- CPU/Memory per Array - 2 x Intel Xeon E5-2600 4-Core 2.4 GHz/48 GB
- Includes VNX FAST Suite software with FAST Cache
- Provides industry-leading integration with VMware and Microsoft Hyper-V

The agency will configure the disks using RAID 6 block-level striping with double distributed parity blocks distributed across all member disks. Each storage processor connects to one side of each of two redundant pairs of four-lane x 6 Gb/s SCSI buses, providing continuous drive access to hosts in the event of a storage processor or bus fault. Data will be backed up using Symantec NetBackup. Centralizing data on high-speed storage arrays and SAN fabric networks have high performance read/write throughput and can present more storage to a server than it may be physically capable of housing. SAN based storage is presented to the backup architecture for faster backups relieving resources from the client or application servers during backups. The SAN expansion was coordinated with ASET data center personnel.

B. Technology Environment

The Hitachi AMS 1000 network storage array contains over 85 Terabytes of agency data and reached end-of-life and end-of-support November 30 2014. The EMC VNX 5600 is scalable up to 500 Terabytes, which is sufficient to store the agency’s data. The EMC VNX 5600 and the Hitachi AMS 1000 are located in the Phoenix State Data Center.

C. Selection Process

ADHS recently purchased the scalable EMC VNX5600 storage array in June 2014 under PIJ ID HS14007. The agency decided to expand the existing EMC SAN array versus procuring another SAN array in order to reduce hotel costs, reduce annual maintenance, and reduce the data center footprint.

V. Project Approach

A. Project Schedule*

Project Start Date: 1/12/2015 **Project End Date:** 5/18/2015

B. Project Milestones

Major Milestones	Start Date	Finish Date
Procure hardware	1/28/2015	2/13/2015
Configure hardware	2/16/2015	3/6/2015
Data migration	3/9/2015	4/17/2015
Test and verify copied data	4/20/2015	5/1/2015
Decommission old hardware	5/4/2015	5/15/2015
Go Live	5/18/2015	5/18/2015

VI. Roles and Responsibilities

1. 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.
2. Information Technology Project Manager – Dave Gilbert, Technical Services Manager - This position will provide leadership and overall project management described in this document.
3. Agency Information Security Officer – John Stark - This position will review and evaluate the PIJs impact to ADHS’s organizational risk and advise compliance with any Statewide and ADHS policy requirements. Provide guidance on PIJs impact to the Information Security Program (ISP) and electronic security plan (ESP).
4. SAN Admin - This position will provide hardware configuration and technical support.
5. Vendor Support – This position will assist with hardware installation and configuration.
6. Receiving – This position will receive and tag equipment.

A. *Project Manager Certification*

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

B. *Full-Time Employee (FTE) Project Hours*

Total Full-Time Employee Hours	80
Total Full-Time Employee Cost	\$2,800

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	\$84,890
Total Project Cost	VII. PIJ Financials tab	\$119,890
FTE Hours	VI. Roles and Responsibilities	80

C. Agency Approvals*

Contact	Printed Name	Signature	Email and Phone
Project Manager:	Dave Gilbert		
Chief Financial Officer	James Humble		
Agency CIO:	Paula Mattingly		
Deputy Director for Planning & Operations:	Janet Mullen		

IX. Optional Attachments

- A. *Vendor Quotes*
- B. *Glossary*

X. Additional Information

ADHS leverages administrative controls, technical controls, and physical controls to protect PII. To ensure the protection of all sensitive and confidential Arizona Department of Health Services electronic data from unauthorized use, modification, destruction, or disclosure, ADHS implemented multiple security policies. ADHS Information Security Policy framework was created to enforce the rules and guidelines for the purpose of providing the confidentiality, integrity, and availability of all ADHS electronic information. All ADHS employees and contractors are bound by that Information Security framework which includes ITS-005 Acceptable Use Policy and sign a confidentiality agreement. Training is provided for new work force members (employee’s and contractors) and annually on Information Security and Privacy which includes the Information Security policies for ADHS and State of Arizona.

The data created and stored in the Storage Area Network (SAN) is only accessible via Access Control Lists (ACLs) or Role-Based Access Control. ACLs are used to provide more granularity to users and groups file permissions. ADHS uses a three-tier architecture comprising of front-end servers, middleware, and back-end databases.

Multiple firewalls are also used to provide a line of defense from the outside. The first tier only accepts specified requests and will only authorize approved users to access the data. Access to the ADHS domain is controlled by the use of domain accounts. Database roles are also used in order to limit access to preapproved users. Users are placed in groups that have implicit permissions necessary to perform their duties.

Links:

[ADOA-ASET Website](#)

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

Email Addresses:

[Strategic Oversight](#)

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