ADOA-ASET

Arizona Strategic Enterprise Technology

Project Investment Justification

Version 01.01

A Statewide Standard Document for Information Technology Projects

Project Title:

ADC Exchange Storage Migration

Agency Name:	**Arizona Department of Corrections**
Date:	**04/18/14**
Agency Contact Name:	**Jerry Baba**
Agency Contact Phone:	
Agency Contact Email:	

Hover for Instructions

I. Management Summary*

The Arizona Department of Corrections (ADC) state run Central Office (CO) data center located at 1601 W. Jefferson houses the Exchange e-mail databases in the Enterprise Storage Area Network (SAN) that supports our four main CO offices (1601 bldg., 1645 bldg., 1831 bldg. and 801 bldg.) and four of our smaller satellite prisons (Apache, Globe, Ft. Grant and Papago). As part of our ongoing network server refresh program (as defined in our IT Strategic Plan FY14) and the significant increase in e-mail traffic on our CO Exchange Servers, ADC has reached 97% capacity and by July, 2014 will consume all of the allocated capacity for our current end-of-live, end-of-use HP EVA4400 SAN storage server. To ensure continued delivery of services to the noted facilities, ADC will be upgrading our Exchange Servers, SANs and switches to accommodate the future growth and demand on our network.

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

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*

ADC Currently Operates a HP EVA4400 and a HP EVA6300 Enterprise SAN at our Central Office location. The HP EVA4400 is more than 4 years old with 97% storage space allocated. This SAN has reached end of use and end of life, in accordance with Hewlett Packard manufacturing specifications. This makes ordering more shelves and drives an issue. The rack that this SAN resides in is full, with no room to expand. Recently this resulted in the CO and supported prisons with the loss of e-mail services.

B. Proposed Business Solution*

ADC Network Team will leverage several complementary technologies to build a modern, high-available, and efficiently managed email system. ADC Network Team proposes that we move our current Microsoft Exchange 2010 severs to three spare HP servers already procured in our new HP C7000 chassis and attach those three HP blade servers to two Brocade VDX6740 switches, and two Nimble Storage CS240G arrays (24TB raw).

The primary purpose of this approach is to start the migration off of an aging Enterprise SAN to a newer SAN with benefits that fit the agency. Those benefits include, redundancy, failover, replication, and being able to restore from its' replication partner.

C. *Quantified Benefits**

X	Service enhancement
	Increased revenue
	Cost reduction
X	Problem avoidance
X	Risk avoidance

Explain:

Service enhancement

By moving our Microsoft Exchange 2010 environment from the HP EVA4400 to two Nimble Storage CS240G arrays the agency will be able to maintain and grow our existing email system. This will allow the agency to preform faster item and file level restores, as well as, maintain a high level of availability.

Problem avoidance

By deploying multiple ISCSI switches and SANs, we reduce the single point of failure that exists in our current email infrastructure. We increase our uptime by being able to mount a replica on the opposite SAN, in the event of a complete SAN failure.

Risk avoidance

By deploying hardware from reputable vendors, ADC is not running the risk of this project failing because of new and unproven technology.

IV.   Technology Approach

A.   *Proposed Technology Solution**

The ADC replacement of servers, storage, setup and maintenance are part of the replacement/upgrade at ADC and based on available funding. ADC will replace outdated, incompatible and non-supported IT equipment with current ASET and industry practices.

The proposed technology solution affords ADC with the option of replicating all the Exchange email over to the other Nimble CS240G storage array, in the event of a total array failure, we will be up and running within minutes. If that same scenario happened today, it would take days to perform the same operation. With 18TB usable, it also allows the agency email needs to grow. The Nimble storage array does inline compression, saving much needed space on disk.

Three existing HP BL460c Gen8 servers will be connected to the Nimble storage arrays via the Brocade VDX 6740 10G switches. New interconnect bays will be

installed into our existing HP C7000 chassis to provide the 10G connection from the blade servers to the Brocade VDX 6740 switches and then onto the Nimble storage arrays.
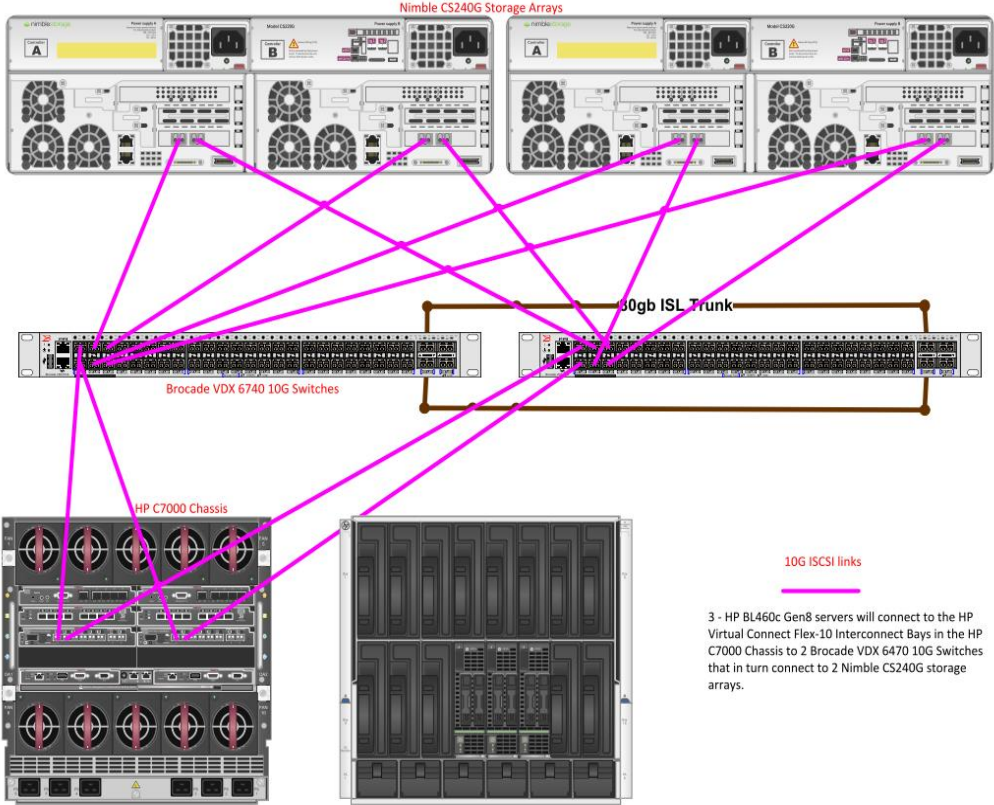
ADC adheres to the ASET standard P710-S710 Rev 3.0**;** Network Infrastructure and, P730-S730 Rev 3.0; Applications and Related Software, for guidelines on the purchase/upgrade/replacement of equipment and software. Attached quotes section provides a description of the equipment that will be included in the Agency's replacement orders.

Development costs for professional and outside services are listed as installation costs on the attached quotes. Maintenance fees are listed as support and five year HP Care Pack paid once on attached quotes.

- Higher speed capability through the use of 10Gbase, Brocade switch and high capacity cabling as well as optical cables.
- Increase storage capacity through the use of a 24TB RAW Storage SAN.

B.

C. Technology Environment

We currently deploy Microsoft Exchange 2010 in a Database Availability Group across three physical servers in an aging HP C7000 enclosure. Those three servers are attached to storage on an aging HP EVA4400 SAN.

D. Selection Process

ADC's Network Team main goal is to provide each complex with the ability to remain up and running, even if we suffer a hardware failure and to maintain a high level of customer service to each one of our clients in the complexes. We wanted to address the needs of new technology deployments with a quicker response time. We have prior experience and considerable man hours working with Nimble Storage and Brocade. We know this will be a great fit for ADC going forward.

V. Project Approach

A. Project Schedule*

Project Start Date: 4/21/2014   **Project End Date**: 7/14/2014

B. Project Milestones

Major Milestones	Start Date	Finish Date
Place Order	04/28/14	04/29/14
Receive Order	05/07/14	06/06/14
Configure and test	06/09//14	07/04/14
Migrate Exchange storage to new SAN	07/07/14	07/18/14
Go live	07/21/14	07/21/14

VI. Roles and Responsibilities

A. Project Roles and Responsibilities

Project Role	Name	Responsibilities
Project Manager	Jerry Baba	Project oversight, management and reporting
Budget Manager	Karen Osmond	Purchase and Delivery
Network Infrastructure Manager	Curt Czarsty	Network Infrastructure Manager

Network Infrastructure and Project Lead	Robert Dinkel	Network Management, equipment testing and configuration

B. *Project Manager Certification*

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

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

Total Full-Time Employee Hours	320
Total Full-Time Employee Cost	$

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?	Y	
2. Is this project referenced in your agency's Strategic IT Plan?	Y	
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.	Y	
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.		N
5. Is this project in compliance with the Arizona Revised Statutes (A.R.S.) and GRRC rules?	Y	
6. Is this project in compliance with the statewide policy regarding the accessibility to equipment and information technology for citizens with disabilities?	Y	

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	$0.00
Total Development Cost	VII. PIJ Financials tab	$201,175.68
Total Project Cost	VII. PIJ Financials tab	$201,175.68
FTE Hours	VI. Roles and Responsibilities	320

C.   Agency Approvals*

Contact	Printed Name	Signature	Email and Phone
Project Manager:	Jerry Baba		
Agency CIO:	Stephen Welsh		
Project Sponsor:	Michael Kearns, Administrative Services Division Director		
Agency Director:			

IX.   Optional Attachments

A.   *Vendor Quotes*

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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