



ADOA-ASET

Project Investment Justification

Version 03.31.15

A Statewide Standard Document for Information Technology Projects

Project Title:

Data Warehouse Storage Upgrade

Agency Name:	AHCCCS
Date:	5/21/2015, revised
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Agency Contact Phone:	
Agency Contact Email:	

[Hover for Instructions](#)

I. 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?

II. Business Case

A. Business Problem*

In June of 2014 a performance analysis of the AHCCCS Data Warehouse Oracle database server was performed by Tuning Knife. The consultant concluded that several things could be done to improve query performance. After working directly with the current storage vendor, the most critical recommendation was to upgrade or replace the current NetApp storage controller, as it was the greatest bottleneck due to its inability to meet current I/O demand.

B. Proposed Business Solution*

Replace the existing network storage for the Data Warehouse with a faster more efficient solution that is comparable in cost.

C. Quantified Benefits*

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

Explain:

An upgraded or new network storage system should be able to meet the I/O demand of the Data Warehouse users that run queries without impacting the schedule of data loads into the database as shown by an initial baseline of queries against the existing NetApp solution that took approximately 38 hours to complete, and the subsequent same set of queries run against the Nimble solution where the queries finished in just under 3 hours.

III. Technology Approach

A. Proposed Technology Solution*

Nimble Storage CS500 array provides an array of high-speed flash cache for frequently accessed data and cheap, large capacity disk for storage array. When data is written to disk, it is sequentialized and compressed on the fly. Data can be cached to the flash array during the write process or as it is accessed. Nimble typically gets about a 2x compression ratio when writing to disk and cache.

Storage Capacity of the Nimble solution is 36 TB of capacity and 2.4TB of Flash Cache.

B. Existing Technology Environment

The Data Warehouse Oracle database is currently running on a NetApp 3140 filer controller with 3 shelves of 14 x 600GB drives.

C. Selection Process

AHCCCS staff spoke with 3 different vendors regarding a solution to the above problem. Nimble was the cheapest and offered comparable or better performance increase as the other vendors. Nimble was also the only vendor to offer an evaluation of the product.

AHCCCS engaged in an evaluation period of the product which resulted in an improvement to the performance of the Data Warehouse system. We ran an initial baseline of queries against the existing NetApp solution that took approximately 38 hours to complete. When the same set of queries is run against the Nimble solution, the queries finished in just under 3 hours.

We plan to keep the product tested; we only have to purchase it. Note that other state agencies use the same product.

IV. Project Approach

A. Project Schedule*

Project Start Date: 6/1/2015 **Project End Date:** 6/30/2015

B. Project Milestones

Major Milestones	Start Date	Finish Date
Purchase Equipment	6/1/2015	6/30/2015

C. Project Roles and Responsibilities

Network Services is responsible for this project

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

VI. Project Approvals

A. Agency CIO/ISO Review and Initials Required*

Key Management Information	Yes	No	Initials
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. Have you reviewed and is this project in compliance with all applicable Statewide policies and standards for network, security, platform, software/application, and/or data/information located at https://aset.az.gov/resources/psp ? If NO , explain in detail in section "VIII. Additional Information" below.	X		
4. Will any PII, PHI, or other Protected Information as defined in the 8110 Statewide Data Classification Policy located at https://aset.az.gov/resources/psp be transmitted, stored, or processed with this project? If YES , the Protected Data section under "VII. Security Controls" below will need to be completed.	X		
5. Will this project migrate, transmit, or store data outside of the agency's in-house environment or the State Data Center? If YES , the Hosted Data section under "VII. Security Controls" below will need to be completed.		X	
6. Is this project in compliance with the Arizona Revised Statutes and GRRC rules?	X		
7. 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)	I. PIJ Type - Pre-PIJ Assessment Cost	\$0
Total Development Cost	V. PIJ Financials tab	\$80,5000
Total Project Cost	V. PIJ Financials tab	\$124,368.98
FTE Hours	See Hover text for FTE Hours	

C. Agency Approvals*

Approver	Printed Name	Signature	Email and Phone
Project Manager:	Mike Upchurch		
Agency Information Security Officer:	Jim Wang		
Agency CIO:	Dan Lippert, Acting		
Project Sponsor:	Dan Lippert		
Agency Director:	Tom Betlach		

VII. Security Controls

Collaboration with the ADOA-ASET Security, Privacy and Risk (SPR) team may be needed to complete this section, which is only required for those projects that involve data that is Protected or Hosted outside of the Agency or State Data Center. Additional information can be found in the NIST FRAMEWORK section under RESOURCES at <https://aset.az.gov/resources/psp> or you may wish to contact ASET-SPR directly at secadm@azdoa.gov for assistance.

A. Protected Data

The storage solution is intended to host all data available for reporting through the Data Warehouse. The storage solution is hosted within the State Data Center at ADOA.

B. Hosted Data

Check here if the <https://aset.az.gov/arizona-baseline-security-controls-excel> spreadsheet is attached. Otherwise explain below what information/ support is needed to complete the spreadsheet and/or why no sheet is attached:

Click here to enter text.

Check here if a Conceptual Design / Network Diagram is attached. Otherwise explain below what information/support is needed to complete the diagram and/or why no diagram is attached:

Click here to enter text.

VIII. Additional Information

IX. Attachments

The following are examples of supporting documents that should be sent as email attachments when required:

- A. *Vendor Quotes*
- B. *Arizona Baseline Security Controls spreadsheet*
- C. *Conceptual Design / Network Diagram*
- D. *Other*

X. Glossary

Other Links:

[ADOA-ASET Website](#)

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

Email Addresses:

[Strategic Oversight](#)

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