



ADOA - ASET

Arizona Strategic Enterprise Technology

Project Investment Justification

Version 01.01

A Statewide Standard Document for Information Technology Projects

Project Title:

Backup and Recovery Strategy

Agency Name:	Arizona Game and Fish Department
Date:	1-10-2014
Agency Contact Name:	Carol Coleman
Agency Contact Phone:	
Agency Contact Email:	

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I. Management Summary*

The Arizona Game and Fish Information Technology Staff is dedicated to providing a backup environment that will support the primary systems in meeting the objectives of the agency and IT in the next three to five years, using the least resources possible.

In redesigning our backup strategy, we are focused on matching restore objectives with total cost of ownership (TCO) to arrive at a best-fit architecture design that is cost-sensitive, but ensures appropriate levels of agency continuity and high availability for each system.

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***

With the data growth that has resulted from increased server virtualization at Arizona Game and Fish, business processes and critical applications are currently threatened as primary backup and restore delays infringe on application use and restorability is questionable. In the past year, 13.5% of backup jobs overran their backup window, overlapping and interfering with production workloads. This can result in an unrecoverable failure – not just downtime (of either acceptable or unacceptable length). With our current hardware limitations, the Game and Fish infrastructure team has been forced to change backup schedules dates, decrease the number of full backups, and split backup jobs into smaller chunks to assure that overnight backups are completed and do not impact business functions.

Currently, all servers and storage repositories including the Informix and NAS solutions are backed up to tape. The current schedule for Informix backups are weekly full backups and nightly incremental backups. Due to hardware restrictions, tape costs and backup windows (the time needed to complete backups) the current Windows/NAS/Storage Server backup strategy consists of staggered, monthly full backups and nightly incremental backups. The Informix server is the only server that is archived off-site; all other backup tapes are currently stored in the server room in metal cabinets. Per the recommendation of the Data Backup and Recovery Audit, dated July 9, 2013, we are pursuing a fireproof safe to be placed in the warehouse to store the nightly backups in. Two servers are dedicated to the tape backups, one for the Informix system and the second for all other systems. Both tape libraries have exceeded their

hardware lifecycle, and the Windows tape library is simply inadequate for the amount of data which needs to be backed up. The lack of slots available to make tapes available and storage capacity of the tapes used is significantly hindering Game and Fish's ability to provide backups per recommended best practice and add time and complexity to the restoration of data.

B. Proposed Business Solution*

The ideal environment would be a combination of tape, disk backup and possibly cloud if determined that there is a significant amount of archived, rarely updated data/files. Tape provides a solid value for data which is to be retained for long periods of time, such as archival data and for recovery points where there is tolerable downtime. Disk provides a short restore time which is optimal for critical data and data where downtime can equate to lost revenue or reputation. With our continued reliance on virtual servers it is anticipated that a substantial amount of resources/funds will be necessary to allow quick recovery of these systems.

It is further recommended that Game and Fish incorporate a tiered backup solution, implement de-duplication and where appropriate to move long-term backup of infrequently accessed, archive-able data to the cloud to ensure appropriate levels of business continuity and high availability for each system.

C. Quantified Benefits*

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

Explain:

[Click here to enter text.](#)

IV. Technology Approach

A. Proposed Technology Solution*

We propose to replace the existing 24 slot HP Tape Library that was purchased in 2007 with a higher capacity, 48 slot tape library. To provide de-duplication of existing data prior to backup, we will install and configure the new storage NAS device. The NAS will also serve as a repository for disk-to-disk backup of Virtual Servers for faster recovery. The backup software CommVault, will be upgrade to the most current version and the licenses for de-duplication and Cloud Storage will be installed and configured.

B. Technology Environment

Based on research performed, we have determined that \$140,000.00 will be necessary to create the technology environment required to meet the objectives defined. This dollar figure is supported by a preliminary vendor bid which was submitted with the PIJ.

C. Selection Process

To provide improved performance, ease of migration and best pricing we are requesting the current vendor – CommVault be utilized.

V. Project Approach

A. Project Schedule*

Project Start Date: 8/1/2014 Project End Date: 3/1/2015

B. Project Milestones

Major Milestones	Start Date	Finish Date
Purchase and delivery of equipment	8/8/2014	9/15/2014
Installation/configuration of tape library and removal of existing tape library	9/15/2014	9/30/2014
Installation/configuration of new NAS	10/1/2014	10/15/2014
Configuration of CommVault software to perform de-duplication and disk-to-disk backup	10/15/2014	10/30/2014
Successful restore of entire user data volume from backup, including documentation of process	12/1/2014	1/15/2015
Successful restore of server from backup, including documentation of process	1/15/2015	2/28/2015

VI. Roles and Responsibilities

A. Project Roles and Responsibilities

Project Manager will be the Network Manager, Carol Coleman. Current full-time employees of Game and Fish including the Unix Administrator and the Windows Administrator will be responsible for the deployment of new software and hardware.

B. Project Manager Certification

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

Project Manager Certification is not necessary for this project as we will be replacing existing hardware and deploying additional functionality to existing software.

C. Full-Time Employee (FTE) Project Hours

Total Full-Time Employee Hours	180
Total Full-Time Employee Cost	\$ 8,560

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	\$140,000.00
Total Project Cost	VII. PIJ Financials tab	\$140,000.00
FTE Hours	VI. Roles and Responsibilities	180

C. Agency Approvals*

Contact	Printed Name	Signature	Email and Phone
Project Manager:	Carol Coleman		
Agency Information Security Officer:			
Agency CIO:	Doug Cummings		
Project Sponsor:	John Bullington		
Agency Director:	Larry Voyles		

IX. Optional Attachments

A. *Vendor Quotes*

X. Glossary

XI. Additional Information

Arizona Game and Fish currently retains and backs up both employee and customer data that includes PII. We currently use encryption with our backup tape solution and will continue to use encryption for tape backups. We will investigate appropriate encryption processes to assure security with both disk-to-disk and cloud storage before utilizing these new technologies.

Links:

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Email Addresses:

[Strategic Oversight](#)

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