Project Investment Justification

DTS DCDR Data Center Disaster Recovery

DE23006

Department of Economic Security

Contents

1. GENERAL INFORMATION

PIJ ID: DE23006
PIJ Name: DTS DCDR Data Center Disaster Recovery
Account: Department of Economic Security
Business Unit Requesting: DES/Division of Technology Services (DTS)
Sponsor: Clayton Sikes
Sponsor Title: claytonsikes@azdes.gov
Sponsor Email: claytonsikes@azdes.gov
Sponsor Phone: (602) 542-3219

2. MEETING PRE-WORK

2.1 What is the operational issue or business need that the Agency is trying to solve? (i.e....current process is manual, which increases resource time/costs to the State/Agency, and leads to errors...):

The Department of Economic Security (DES) data center is located in a third party data center in the Phoenix metropolitan area. The Iron Mountain Data Center is a Tier 3 facility that provides redundant cooling and electrical support to systems located in the building, however, it does not provide information technology (IT) Disaster Recovery (DR) capability for DES infrastructure located in the facility. IT DR is the responsibility of DES. DES utilizes a Cisco Flexpod solution to support all non-mainframe applications and software solutions that support DES critical functions. The current method of DR and Backup is to mirror the current configuration and data within the same data center and within the same flexpod. This methodology is not adequate for DR purposes due to the collocation of both Production and DR copies. If an incident were to impact the Flexpod, all server-based computing would stop until the Flexpod could be rebuilt from scratch, effectively stopping all electronic processing of DES business functions for an extended period of time.

2.2 How will solving this issue or addressing this need benefit the State or the Agency?

The solution will back up our infrastructure and server data to the AWS cloud using VMware Cloud Disaster Recovery (VCDR) software as a solution (SaaS) from VMWARE. VMWARE has two different clouds, a Gov.Cloud and a Public cloud depending on the individual application requirements. The VMWARE solution would provide a maximum 4 hour recovery time frame, depending on the needs of the business and cost we are willing to pay. By utilizing the VMWare/AWS solution, all DES Divisions that serve over 3 million AZ residents would be able to continue their critical services despite loss of the Flexpod or the entire data center.

Implementation of the VMWARE/AWS solution would provide Risk Avoidance through the ability to mirror the DES systems to an offsite, cloud-based solution, as well as satisfying Federal Mandates to protect client data and continue services based on multiple Federal directives affecting DES.

Under the proposed solution, Recovery Point Objective (RPO - How old is the data?) would be determined by the individual application requirements (On Demand vs. Pilot Light) and Recovery Time Objective (RTO - How long to recover the system/data?) would be immediate to 24 hours based on application requirements.

2.3 Describe the proposed solution to this business need.

DES utilized a Task Order (TO) method to solicit vendors. Two vendors responded, with VMware being selected as the only Vendor that fit DES needs. DES already utilizes VMware to manage on-premise systems, so the VCDR solution is easily integratable with the current configuration. The response from the second vendor, CStor, failed to address key components of the TO.

The VCDR solution gives DES the ability to mirror the configuration and data of our current production infrastructure without loss of data to AWS. Once mirrored, DES businesses will have the ability to select the appropriate level of DR support based on federal requirements specific to their business need.

Business Requirement and Project Plan are part of the Task Order.

Approved by Mark Darmer, CIO, on 9/16/22.

Approved by Michael Wisehart, DES Director, on 9/23/22

2.4 Has the existing technology environment, into which the proposed solution will be implemented, been documented?

Yes

2.4a Please describe the existing technology environment into which the proposed solution will be implemented.

2.5 Have the business requirements been gathered, along with any technology requirements that have been identified?

Yes

2.5a Please explain below why the requirements are not available.

3. PRE-PIJ/ASSESSMENT

3.1 Are you submitting this as a Pre-PIJ in order to issue a Request for Proposal (RFP) to evaluate options and select a solution that meets the project requirements?

No

3.1a Is the final Statement of Work (SOW) for the RFP available for review?

3.2 Will you be completing an assessment/Pilot/RFP phase, i.e. an evaluation by a vendor, 3rd party or your agency, of the current state, needs, & desired future state, in order to determine the cost, effort, approach and/or feasibility of a project?

No

3.2a Describe the reason for completing the assessment/pilot/RFP and the expected deliverables.

3.2b Provide the estimated cost, if any, to conduct the assessment phase and/or Pilot and/or RFP/solicitation process.

3.2e Based on research to date, provide a high-level cost estimate to implement the final solution.

4. PROJECT

4.1 Does your agency have a formal project methodology in place?

Yes

4.2 Describe the high level makeup and roles/responsibilities of the Agency, Vendor(s) and other third parties (i.e. agency will do...vendor will do...third party will do).

The vendor is VMWare and the project will encompass a professional services engagement. VMware Professional Services will be responsible for configuring VCDR software with the assistance of DTS Infrastructure to replicate to AWS. VMWare will provide knowledge transfer to DTS.

4.3 Will a PM be assigned to manage the project, regardless of whether internal or vendor provided?

Yes

4.3a If the PM is credentialed, e.g., PMP, CPM, State certification etc., please provide certification information.

4.4 Is the proposed procurement the result of an RFP solicitation process?

No

4.5 Is this project referenced in your agency's Strategic IT Plan?

Yes

5. SCHEDULE

5.1 Is a project plan available that reflects the estimated Start Date and End Date of the project, and the supporting Milestones of the project?

Yes

5.2 Provide an estimated start and finish date for implementing the proposed solution.

Est. Implementation Start Date	Est. Implementation End Date
10/19/2022 12:00:00 AM	5/10/2023 12:00:00 AM

5.3 How were the start and end dates determined?

Based on funding

5.3a List the expected high level project tasks/milestones of the project, e.g., acquire new web server, develop software interfaces, deploy new application, production go live, and estimate start/finish dates for each, if known.

Milestone / Task	Estimated Start Date	Estimated Finish Date
Planning Phase Deliverables • vRealize Operations Cloud	11/07/22	11/18/22

requirements validation • Identification of VMs to be migrated • Identification of network segment to be extended		
SSP Document Completed/Submitted	11/18/22	12/02/22
Execute Phase Deploy Deliverables • Finalizes the Configuration Workbook • Executes a single migration wave (up to 15 VMs) • Configure vRealize Log Insight Cloud dashboard • Configure vRealize Network insight Cloud • Configure vRealize Operations	12/05/22	01/27/23
Training Conducts technical knowledge transfer sessions for administrators and operators Conducts up to eight (8) hours of knowledge transfer sessions, including fundamental operational discussions	12/05/22	01/27/23
Closure Phase VMware conducts a closure meeting of up to two (2) hours with the Customer covering project status, reviewing completions, next steps and how to engage with VMware support.	01/30/23	02/10/23
Final Payment of invoices	02/10/23	05/10/23

5.4 Have steps needed to roll-out to all impacted parties been incorporated, e.g. communications, planned outages, deployment plan?

Yes

5.5 Will any physical infrastructure improvements be required prior to the implementation of the proposed solution. e.g., building reconstruction, cabling, etc.?

Yes

5.5a Does the PIJ include the facilities costs associated with construction?

No

5.5b Does the project plan reflect the timeline associated with completing the construction?

No

6. IMPACT

6.1 Are there any known resource availability conflicts that could impact the project?

No

6.1a Have the identified conflicts been taken into account in the project plan?

6.2 Does your schedule have dependencies on any other projects or procurements?

No

6.2a Please identify the projects or procurements.

6.3 Will the implementation involve major end user view or functionality changes?

Yes

6.4 Will the proposed solution result in a change to a public-facing application or system?

No

7. BUDGET

7.1 Is a detailed project budget reflecting all of the up-front/startup costs to implement the project available, e.g, hardware, initial software licenses, training, taxes, P&OS, etc.?

Yes

7.2 Have the ongoing support costs for sustaining the proposed solution over a 5-year lifecycle, once the project is complete, been determined, e.g., ongoing vendor hosting costs, annual maintenance and support not acquired upfront, etc.?

Yes

7.3 Have all required funding sources for the project and ongoing support costs been identified?

Yes

7.4 Will the funding for this project expire on a specific date, regardless of project timelines?

No

7.5 Will the funding allocated for this project include any contingency, in the event of cost over-runs or potential changes in scope?

No

8. TECHNOLOGY

8.1 Please indicate whether a statewide enterprise solution will be used or select the primary reason for not choosing an enterprise solution.

There is not a statewide enterprise solution available

8.2 Will the technology and all required services be acquired off existing State contract(s)?

Yes

8.3 Will any software be acquired through the current State value-added reseller contract?

Yes

8.3a Describe how the software was selected below:

DES utilized a Task Order (TO) method to solicit vendors. Two vendors responded, with VMware being selected as the only Vendor that fit DES needs. DES already utilizes VMware to manage on-premise systems, so the VCDR solution is easily integratable with the current configuration. The response from the second vendor, CStor, failed to address key components of the TO.

The VCDR solution gives DES the ability to mirror the configuration and data of our current production infrastructure without loss of data to AWS. Once mirrored, DES businesses will have the ability to select the appropriate level of DR support based on federal requirements specific to their business need.

8.4 Does the project involve technology that is new and/or unfamiliar to your agency, e.g., software tool never used before, virtualized server environment?

Yes

8.5 Does your agency have experience with the vendor (if known)?

Yes

8.6 Does the vendor (if known) have professional experience with similar projects?

Yes

8.7 Does the project involve any coordination across multiple vendors?

No

8.8 Does this project require multiple system interfaces, e.g., APIs, data exchange with other external application systems/agencies or other internal systems/divisions?

No

8.9 Have any compatibility issues been identified between the proposed solution and the existing environment, e.g., upgrade to server needed before new COTS solution can be installed?

No

8.9a Describe below the issues that were identified and how they have been/will be resolved, or whether an ADOA-ASET representative should contact you.

8.10 Will a migration/conversion step be required, i.e., data extract, transformation and load?

No

8.11 Is this replacing an existing solution?

No

8.11a Indicate below when the solution being replaced was originally acquired.

8.11b Describe the planned disposition of the existing technology below, e.g., surplused, retired, used as backup, used for another purpose:

8.12 Describe how the agency determined the quantities reflected in the PIJ, e.g., number of hours of P&OS, disk capacity required, number of licenses, etc. for the proposed solution?

The numbers were based on all production servers on prem.

8.13 Does the proposed solution and associated costs reflect any assumptions regarding projected growth, e.g., more users over time, increases in the amount of data to be stored over 5 years?

Yes

8.14 Does the proposed solution and associated costs include failover and disaster recovery contingencies?

Yes

8.14a Please select why failover and disaster recovery is not included in the proposed solution.

8.15 Will the vendor need to configure the proposed solution for use by your agency?

Yes

8.15a Are the costs associated with that configuration included in the PIJ financials?

Yes

8.16 Will any app dev or customization of the proposed solution be required for the agency to use the project in the current/planned tech environment, e.g. a COTS app that will req custom programming, an agency app that will be entirely custom developed?

No

8.16a Will the customizations inhibit the ability to implement regular product updates, or to move to future versions?

8.16b Describe who will be customizing the solution below:

8.16c Do the resources that will be customizing the application have experience with the technology platform being used, e.g., .NET, Java, Drupal?

8.16d Please select the application development methodology that will be used:

8.16e Provide an estimate of the amount of customized development required, e.g., 25% for a COTS application, 100% for pure custom development, and describe how that estimate was determined below:

8.16f Are any/all Professional & Outside Services costs associated with the customized development included in the PIJ financials?

8.17 Have you determined that this project is in compliance with all applicable statutes, regulations, policies, standards & procedures, incl. those for network, security, platform, software/application &/or data/info found at aset.az.gov/resources/psp?

Yes

8.17a Describe below the compliance issues that were identified and how they have been/will be resolved, or whether an ADOA-ASET representative should contact you:

8.18 Are there other high risk project issues that have not been identified as part of this PIJ?

No

8.18a Please explain all unidentified high risk project issues below:

9. SECURITY

9.1 Will the proposed solution be vendor-hosted?

Yes

9.1a Please select from the following vendor-hosted options:

Commercial data center environment, e.g AWS, Azure

9.1b Describe the rationale for selecting the vendor-hosted option below:

VMware being selected as the only Vendor that fit DES needs. DES already utilizes VMware to manage on-premise systems, so the VCDR solution is easily integratable with the current configuration. The response from the second vendor failed to address key components of the TO.

9.1c Has the agency been able to confirm the long-term viability of the vendor hosted environment?

Yes

9.1d Has the agency addressed contract termination contingencies, e.g., solution ownership, data ownership, application portability, migration plans upon contract/support termination?

Yes

9.1e Has a Conceptual Design/Network Diagram been provided and reviewed by ASET-SPR?

Yes

9.1f Has the spreadsheet located at https://aset.az.gov/arizona-baseline-security-controls-excel already been completed by the vendor and approved by ASET-SPR?

No

9.2 Will the proposed solution be hosted on-premise in a state agency?

No

9.2a Where will the on-premise solution be located:

9.2b Were vendor-hosted options available and reviewed?

9.2c Describe the rationale for selecting an on-premise option below:

9.2d Will any data be transmitted into or out of the agency's on-premise environment or the State Data Center?

9.3 Will any PII, PHI, CGIS, or other Protected Information as defined in the 8110 Statewide Data Classification Policy be transmitted, stored, or processed with this project?

Yes

9.3a Describe below what security infrastructure/controls are/will be put in place to safeguard this data:

Disaster Recovery will be hosted in the AWS cloud both Government and commercial cloud environment. Government cloud is FedRamp High and Commercial cloud is FedRamp Medium.

Yes , DES's data is segregated from other clients' data.

Secure Sign-on is required

Data is encrypted at rest and in transit.

Data Center is located within the US

Data passing between DES and non-DES hosted environments must follow the established DES architectural model for external vendors. Security stated it is OK with them and waiting on the Architecture team to finish the paperwork for Security can sign off.

10. AREAS OF IMPACT

Application Systems

Database Systems

Software

Other

VCDR software for DR in AWS cloud.

Hardware

Hosted Solution (Cloud Implementation)

Amazon (AWS) GovCloud;AWS (non-government) cloud;Vendor Hosted

Security

Telecommunications

Enterprise Solutions

Disaster Recovery/Business Continuity

Contract Services/Procurements

11. FINANCIALS

Description	PIJ Category	Cost Type	Fiscal Year Spend	Quantity	Unit Cost	Extended Cost	Tax Rate	Tax	Total Cost
Enterprise Licensing Agreement	Software	Development	1	1	$909,146	$909,146	860.00 %	$78,187	$987,332
VMware Cloud Readiness for US Government	Software	Development	1	1	$65,430	$65,430	860.00 %	$5,627	$71,057
VMware Cloud DRaaS Advanced	Software	Development	1	2	$46,387	$92,773	860.00 %	$7,979	$100,752
VMware Cloud Activation Standard	Software	Development	1	1	$25,612	$25,612	860.00 %	$2,203	$27,815
Enterprise Licensing Agreement FY 2-5	Software	Operational	5	4	$942,786	$3,771,144	860.00 %	$324,318	$4,095,463

Base Budget (Available)	Base Budget (To Be Req)	Base Budget % of Project
$768,276	$0	15%
APF (Available)	APF (To Be Req)	APF % of Project
$0	$0	0%
Other Appropriated (Available)	Other Appropriated (To Be Req)	Other Appropriated % of Project
$43,404	$0	1%
Federal (Available)	Federal (To Be Req)	Federal % of Project
$2,082,239	$0	39%
Other Non-Appropriated (Available)	Other Non-Appropriated (To Be Req)	Other Non-Appropriated % of Project
$2,388,500	$0	45%

Total Budget Available	Total Development Cost
$5,282,419	$1,186,956
Total Budget To Be Req	Total Operational Cost
$0	$4,095,463
Total Budget	Total Cost
$5,282,419	$5,282,419

12. PROJECT SUCCESS

Please specify what performance indicator(s) will be referenced in determining the success of the proposed project (e.g. increased productivity, improved customer service, etc.)? (A minimum of one performance indicator must be specified)

Please provide the performance objective as a quantifiable metric for each performance indicator specified.
Note: The performance objective should provide the current performance level, the performance goal, and the time period within which that performance goal is intended to be achieved. You should have an auditable means to measure and take corrective action to address any deviations.
Example: Within 6 months of project completion, the agency would hope to increase "Neighborhood Beautification" program registration by 20% (3,986 registrants) from the current registration count of 19,930 active participants.

Performance Indicators

Upon completion of the VCDR project, DES will have the ability to recover all production servers that host critical DES applications within a maximum of 4 hours by utilizing the VMWare/AWS solution.

DES Divisions would be able to continue to provide critical services statewide, as well as satisfying Federal Mandates to protect client data.

13. CONDITIONS

Conditions for Approval

Should development costs exceed the approved estimates by 10% or more, or should there be significant changes to the proposed technology scope of work or implementation schedule, the Agency must amend the PIJ to reflect the changes and submit it to ADOA-ASET, and ITAC if required, for review and approval prior to further expenditure of funds.

Monthly reporting on the project status is due to ADOA-ASET no later than the 15th of the month following the start of the project. Failure to comply with timely project status reporting will affect the overall project health. The first status report for this project is due on January 15, 2023.

Prior to go live, the Agency must work with the Department of Administration (ADOA) and Department of Homeland Security (AZDOHS) Cyber Command, to assure the System Security Plan document is completed and approved by Cyber Command in order to ensure that the selected solution will provide an appropriate level of protection for State data.

Prior to moving any State data into the vendor-hosted environment and/or spending of funds, the Agency must work with the Department of Administration (ADOA) and Department of Homeland Security (AZDOHS) Cyber Command, to assure the Arizona Baseline Security Controls document is completed and approved by Cyber Command in order to ensure that the selected solution will provide an appropriate level of protection for State data.

14. OVERSIGHT SUMMARY

Project Background

The Arizona Department of Economic Security (DES) makes Arizona stronger by helping Arizonans reach their potential through temporary assistance for those in need, and care for the vulnerable.

The department provides an array of services for low-income households and others in need. These services are provided through the following divisions: Administration; Developmental Disabilities; Benefits and Medical Eligibility; Child Support Enforcement; Aging and Community Services; and Employment and Rehabilitation Services.

The Division of Technology Services has implemented Enterprise Policies for all Executive Branch State employees served by DTS. These Enterprise Policies help protect the confidentiality, integrity, and availability of the State's information and information systems. We appreciate your cooperation and collaboration in effectively keeping State data secure.

DES utilizes a Cisco Flexpod solution to support all non-mainframe applications and software solutions that support DES critical functions. The current method of DR and Backup is to mirror the current configuration and data within the same data center and within the same flexpod. This methodology is not adequate for DR purposes due to the collocation of both Production and DR copies. If an incident were to impact the Flexpod, all server-based computing would stop until the Flexpod could be rebuilt from scratch, effectively stopping all electronic processing

of DES business functions for an extended period of time.

The proposed solution addresses the stated problem. The proposed project aligns with the budget unit's Strategic IT Plan; and the proposed solution complies with statewide IT standards.

Business Justification

Upon completion of the VCDR project, DES will have the ability to recover all production servers that host critical DES applications within a maximum of 4 hours by utilizing the VMWare/AWS solution.

DES Divisions would be able to continue to provide critical services statewide, as well as satisfying Federal Mandates to protect client data.

By utilizing the VMWare/AWS solution, all DES Divisions that serve over 3 million AZ residents would be able to continue their critical services despite loss of the Flexpod or the entire data center.
Implementation of the VMWARE/AWS solution would provide Risk Avoidance through the ability to mirror the DES systems to an offsite, cloud-based solution, as well as satisfying Federal Mandates to protect client data and continue services based on multiple Federal directives affecting DES.

There is sufficient sponsorship and support by budget unit leadership, ADOA-ASET spoke with the project sponsor as well as the PIJ submitter.

Implementation Plan

The solution will be Vendor-hosted, Disaster Recovery will be hosted in the AWS cloud both Government and commercial cloud environment. Government cloud is FedRamp High and Commercial cloud is FedRamp Medium.

The vendor is VMWare and the project will encompass a professional services engagement. VMware Professional Services will be responsible for configuring VCDR software with the assistance of DTS Infrastructure to replicate to AWS. VMWare will provide knowledge transfer to DTS.

The PM will be Deborah Foley, she does have the bandwidth.

ADOA-ASET believes that the business unit is competent to carry out the project successfully; and supported by sponsorship and budget unit leadership.

Vendor Selection

DES utilized a Task Order (TO) method to solicit vendors. Two vendors responded, with VMware being selected as the only Vendor that fit DES needs. DES already utilizes VMware to manage on-premise systems, so the VCDR solution is easily integratable with the current configuration.

Budget or Funding Considerations

The project development and implementation are accounted
for in the following manner:
Base Budget (Available) = 15% $ 768,276.19
Other Appropriated (Available) = 1% $ 43,404.13
Federal (Available) = 39% $2,082,238.68
Other Non-Appropriated (Available) = 45% $2,388,499.59
Total Project: $5,282,418.59
Available in the agency's FY23 budget.

15. PIJ REVIEW CHECKLIST

Agency Project Sponsor

Clayton Sikes

Agency CIO (or Designee)
Mark Darmer

Agency ISO (or designee)
Dan Wilkins

OSPB Representative

ASET Engagement Manager

ASET SPR Representative

Agency SPO Representative
David Steuber

Agency CFO
Roberta Harrison