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# ADOT Data Center Migration

Arizona Department of Transportation  
Information Technology Group

**Presented By:**

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# Project Objective

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**Develop a multi cloud connectivity architecture leveraging AZNet III Network and Carrier SD WAN solution.**

**ADOT initiated a cloud migration in FY2017. The agency has developed a 3 tier migration plan to include Application Assessment and Classification, Employee Development, Network Enhancements as well as Data Center Relocation.**

- Year 1: Re-baseline the ADOT Cloud Initiative,
- Year 2: Migration to AWS cloud and the State's hosted data center.
- Year 3: Optimization of AWS Cloud

**The long-term goals of the agency are:**

- Improved security
- Transparency
- Traceability
- Simplified billing
- Cost avoidance
- Increased resource governance

# Project Scope

Current Scope	Additional Scope (Proposed)
<ul style="list-style-type: none"><li>● Application Assessment</li><li>● Security and Operational Readiness<ul style="list-style-type: none"><li>○ Security and Operational Playbook</li><li>○ Create Operations POC</li><li>○ Perform Windows 2008 Migration for POC</li></ul></li><li>● Database Assessment / Infrastructure Deployment<ul style="list-style-type: none"><li>○ Detailed Migration Planning &amp; Application Migration (7 Apps)</li><li>○ Database Design and Migration Strategy</li><li>○ Design Patterns</li></ul></li><li>● Storage POC - Zadara</li></ul>	<ul style="list-style-type: none"><li>● Workload Migration - AWS</li><li>● Network Migration</li><li>● Storage Migration - Zadara</li><li>● Physical Data Center Move</li></ul>

# AWS Approach – ADOT will leverage all Strategies Below

**Rehosting**—Otherwise known as “lift-and-shift.”

Typical migration scenario where the organization is looking to scale a migration quickly to meet a business case, we find that most applications are rehosted.

This is the fastest, lowest effort strategy, but does not take full advantage of native cloud offerings and cost optimizations.

**Replatforming**—Sometimes call this “lift-tinker-and-shift.”

Common to perform a few workload optimizations in order to achieve some tangible benefit, without changing the core architecture of the application.

**Repurchasing**—Transitioning to a different product.

Most common to see repurchasing as a move to a SaaS platform.

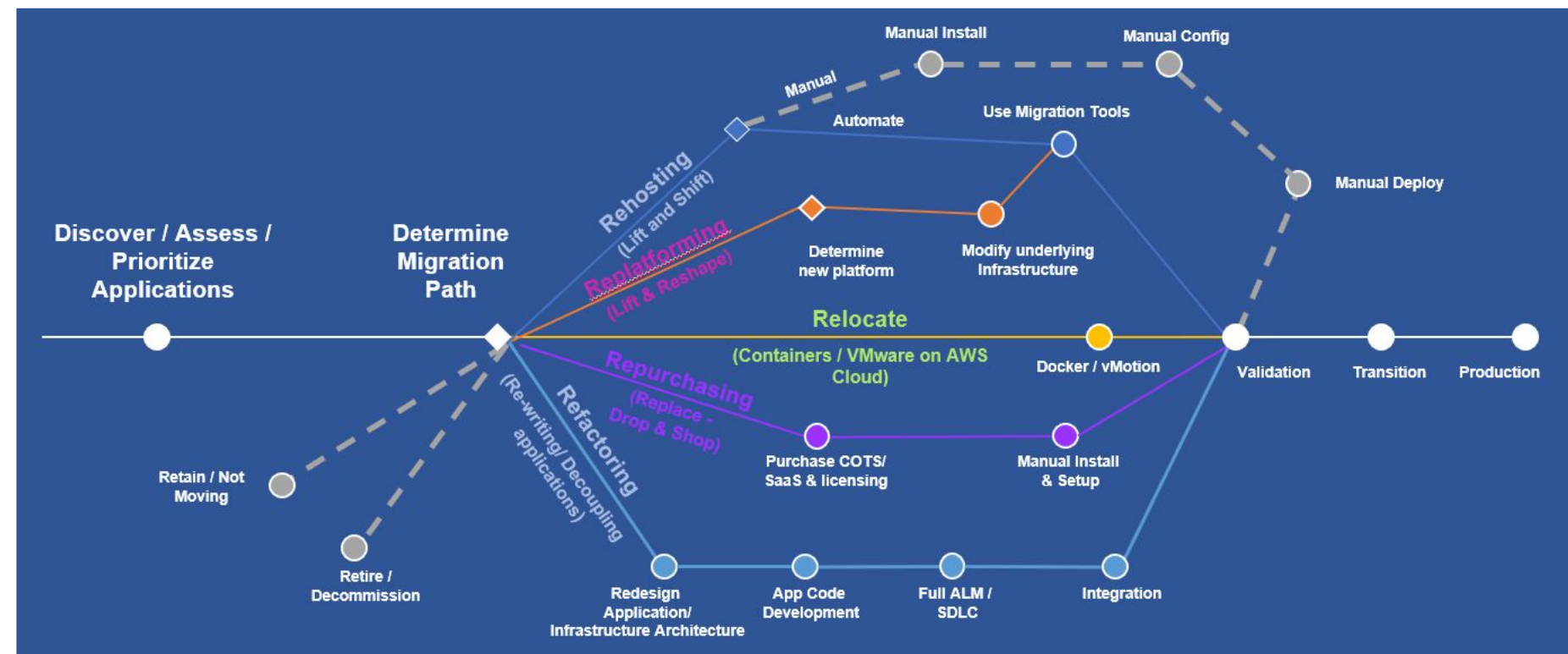
Example: Moving a CRM to [Salesforce.com](https://www.salesforce.com), an HR system to [Workday](https://www.workday.com), a CMS to [Drupal](https://www.drupal.org), and so on.

**Refactoring /Re-imagining** how the application is architected and developed, typically using cloud-native features.

Typically driven by a strong business need to add features, scale, or performance that would be difficult to achieve in the application’s existing environment.

**Retire**—Eventual decommission of application and resources

**Retain**—Usually this means “revisit” or do nothing (for now).



# Physical Approach

**Objective:** Decommission end of support hardware, move everything else that's not going to AWS to the state hosted Data Center

- Design Infrastructure at IM
- Review with ADOA and AZNET
- Create schedule and roadmap
- Procure Services & Equipment
- Test Networks
- Test Storage
- Test Servers
- Test Security & Compliance
- Monitor and Stabilize
- Optimizations
- Decommissions



- Define project Objectives
- Define Success Criteria
- Assess current Infrastructure
- Define Budget Requirements
- Define 5 year strategy
- Build Network Infrastructure
- Build Storage Infrastructure with Zadara
- Build New Server Infrastructure
- Upgrade old Server OS's
- Finalize Support Structure
- Server Migration Plan
- Storage Migration Plan
- Network Migration Plan
- Migrate Remaining Networks
- Migrate Virtual Servers & Storage
- Migrate Physical Servers & Storage

# Current Budget

Funding Category	Current Approved Development Budget	Total Dev Project Spent to Date	Remaining Budget	% Spent to Date
Original Budget	\$ 366,500	\$ 366,500	\$ 0	100%
Change Order #1 (CR0539)	\$ 194,915	\$ 0.00	\$ 194,915	0%
<b>TOTAL</b>	<b>\$ 561,415</b>	<b>\$ 366,5000</b>	<b>\$ 194,915</b>	

# Proposed Budget

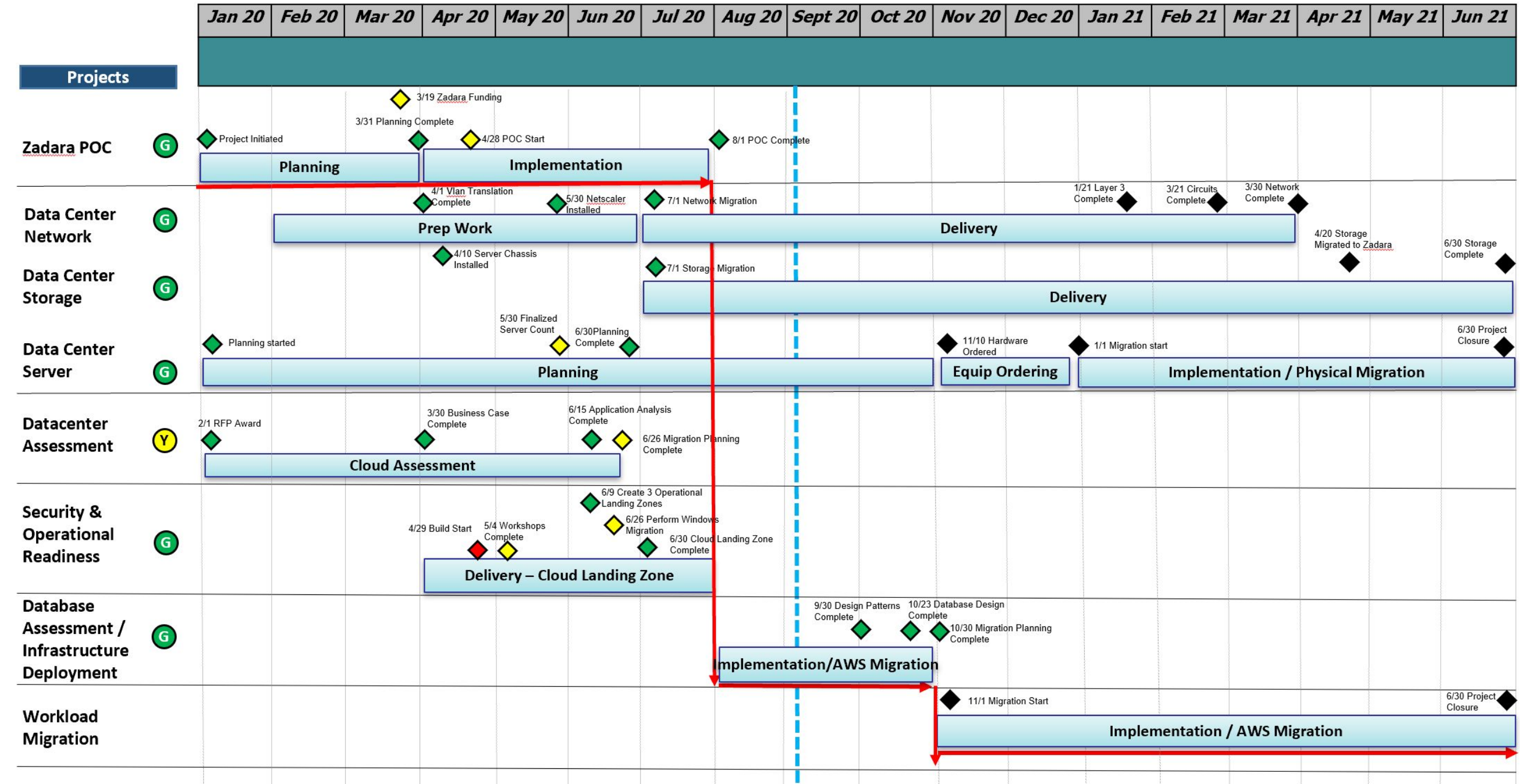
Funding Category	Proposed Development Budget	Total Dev Project Spent to Date	Remaining Budget	% Spent to Date
Current Budget	\$ 561,415	\$ 366,500	\$ 194,915	65%
Proposed Change	\$ 1,555,328	\$ 0	\$ 1,555,328	0%
<b>TOTAL</b>	<b>\$ 2,116,743</b>	<b>\$ 366,500</b>	<b>\$ 1,750,243</b>	

- Original PIJ included limited scope due to timing and the availability of only a portion of the funds to start the project.
- Change Order #1 (CR0539) was introduced as additional funding was allocated to the project.
- Proposed Budget amount includes the remaining project scope now that full funding has been allocated.

# Schedule – Program Roadmap



DC Move Program Roadmap (as of 9/4/20)



# Program Deliverables

Deliverable	Due Date
Workload Migration Start	11/01/2020
Hardware Ordered	11/10/2020
Physical Data Center Move Start	1/1/2021
Layer 3 Network Complete	1/21/2021
Authorized Third Party Offices off Citrix	1/29/2021
Circuits & Extranet and Partner Mapping Complete	3/31/2021
VPN Tunnel Complete	6/30/2021
Netscaler Migration Complete	6/30/2021
Storage Complete	6/30/2021
Physical Move Complete	6/30/2021
Workload Migration Complete	6/30/2021



# Summary

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The proposed change will increase the development costs by \$1,555,328 and extend the project end date to June 2021.

The proposed scope change will:

- Enable the agency to complete the workload, network and storage migrations
- Finalize the Physical Data Center Move to the state hosted Data Center for remaining applications/servers that cannot migrate to the cloud

# Questions