

Enterprise Information Services Data Center Services Forecast

Terrence Woods, State Chief Information Officer
James Foster, Data Center Services Director

Joint Committee on Information Management and Technology

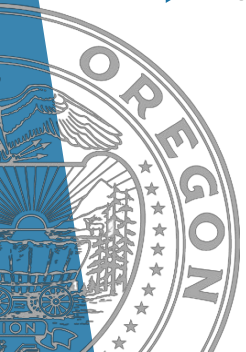
April 5, 2023



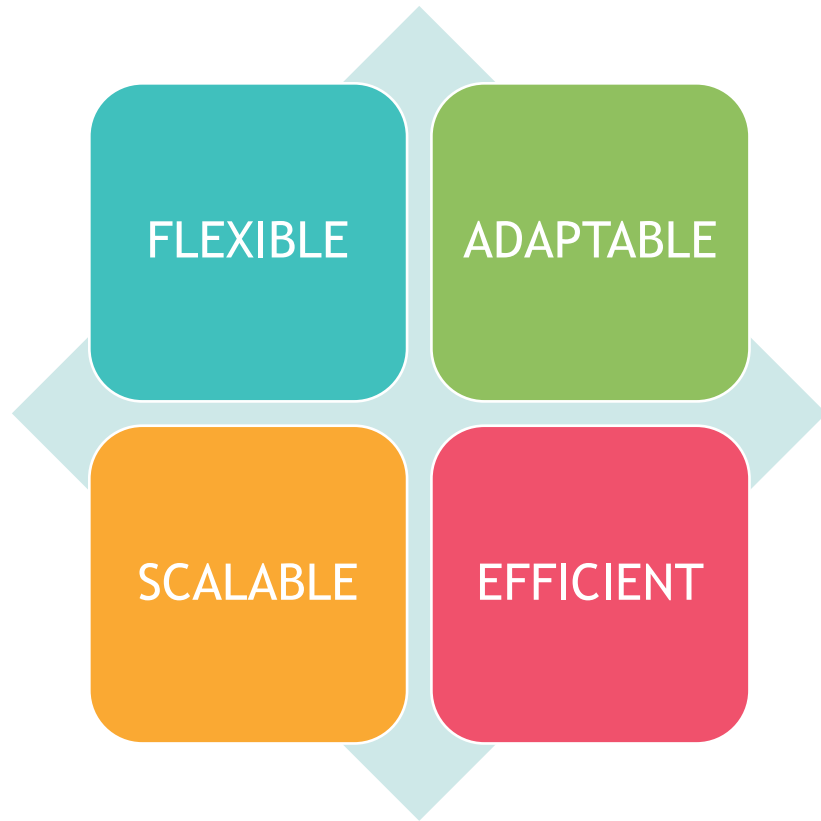
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Agenda

- ▶ Data Center Services (DCS)
- ▶ Cloud Brokering
- ▶ Co-Location
- ▶ Managed Services
- ▶ Agency Managed Equipment Outside of the State Date Center
- ▶ Mainframe Utilization
- ▶ Mainframe Lease
- ▶ Mainframe Migration



Data Center Services



We have committed our long-term future to ensuring that our customers' data and systems are:

- ▶ In a secure, stable and flexible data center
- ▶ Supported by a robust statewide network
- ▶ Reliable and ensure high performance
- ▶ Maintained in a cost-effective manner



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Data Center Services

Disaster Recovery for Shared IT Infrastructure

Network Services

Data and Back-Up Services

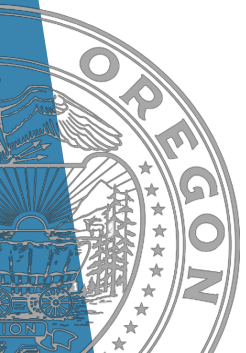
Cloud Brokering

Co-Location Service

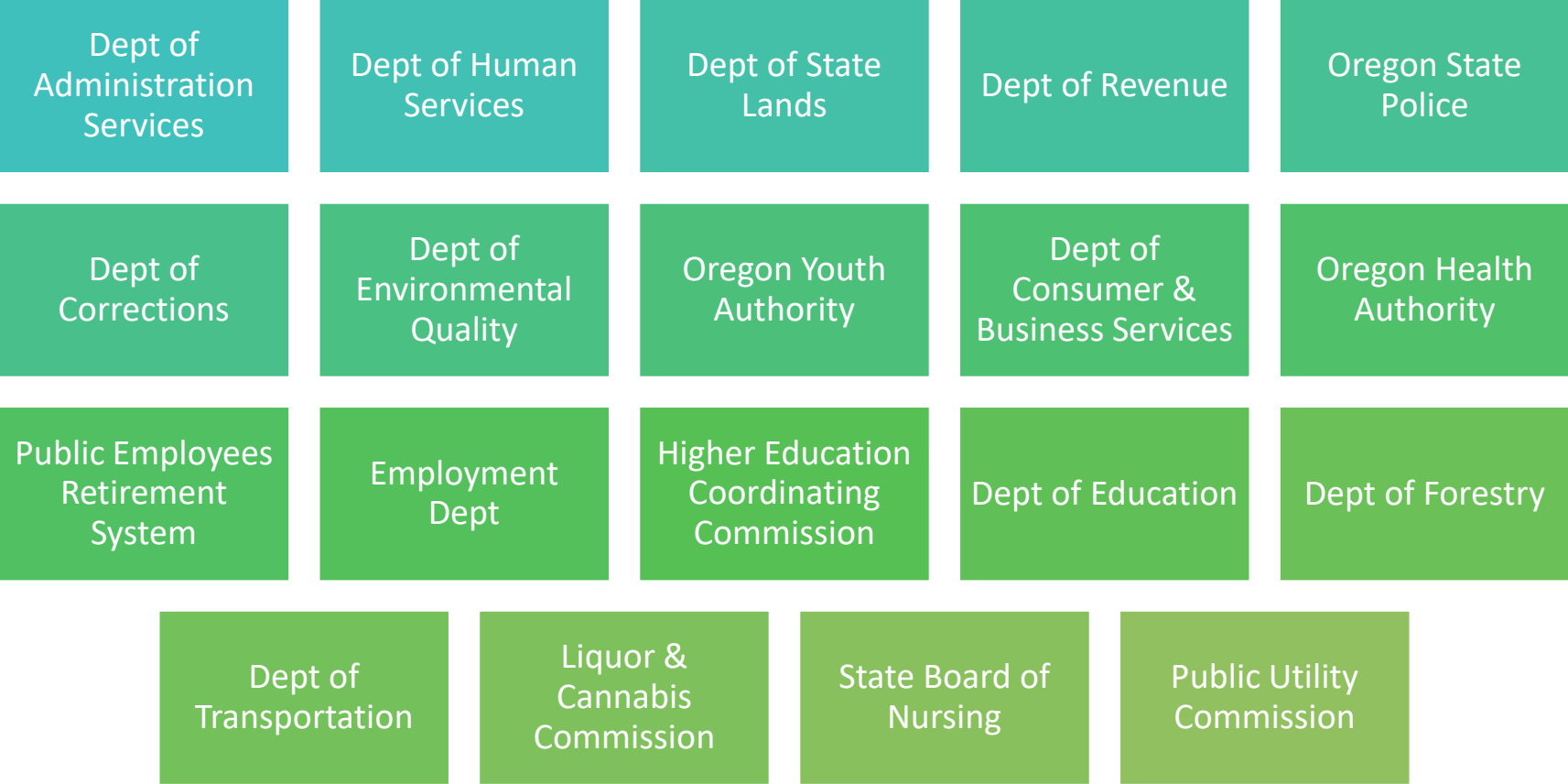
Managed Services

DCS Cloud Brokering

- ▶ Flexibility and choices to meet varying needs
- ▶ DCS is the service provider enabling agency IT divisions, developers, and agency IT professionals to quickly access and deploy cloud environments with minimal friction and IT overhead while maintaining effective guardrails in terms of centralized policies and procedures
- ▶ Tiered approach accommodates varying levels of support needs:
 - Prebuilt template
 - Network connectivity into and within the cloud
 - Security
 - Identity and access
 - Consulting
 - Managed services



DCS Cloud Brokering Customers - Current



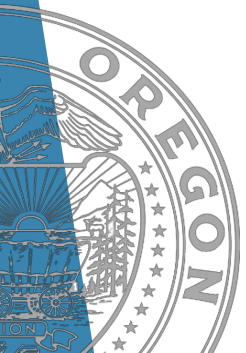
DCS Cloud Brokering Customers – Planned

Dept of
Justice

Construction
Contractors
Board

DCS Co-Location

- ▶ Available to Oregon public sector organizations
- ▶ Opens the door for agencies to host their valuable IT equipment in a tier 3 data center without the additional costs of maintaining their own facility
- ▶ Co-Location Service includes:
 - 24/7 access to their equipment
 - Robust HVAC system for environmental controls
 - Flat-rate monthly billing inclusive of power consumption
 - Redundant and conditioned power



DCS Co-Location Service Customers – Current

Oregon Health
Authority

Public Employees
Retirement
System

Dept of Education

Oregon State
Library

Parks &
Recreation Dept

Oregon State
Lottery

DCS Co-Location Service Customers – Planned

Dept of Energy

Dept of Transportation

Dept Consumer & Business Services

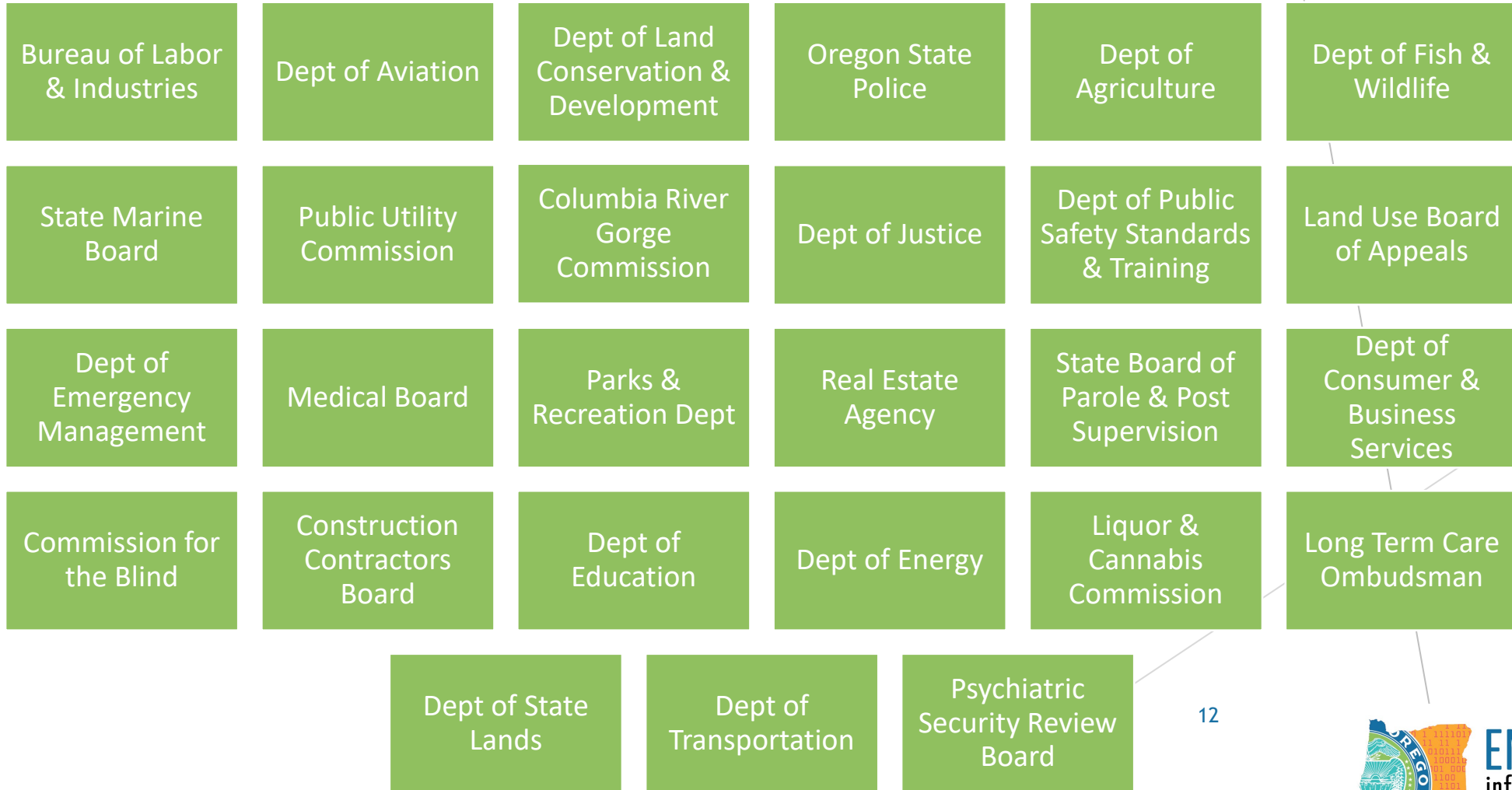
Dept Environmental Quality

DCS Managed Services

- ▶ X86 Server (Window Operating System / Linux Operating System), Midrange, Mainframe
- ▶ DCS provides performance and reliability to our customers
- ▶ Our capabilities can be compared to Cloud offerings known as Platform-as-a-Service (PaaS)
- ▶ Our platforms are designed in alignment with state security standards, built using industry best practices, and maintained and monitored to ensure a reliable computing experience
- ▶ Services include backup, storage, and network
- ▶ 24/7 monitoring

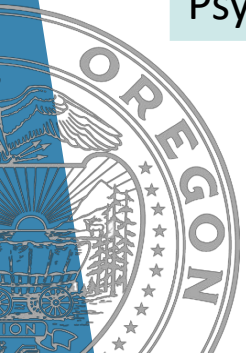


Agency Managed Equipment Outside of the State Data Center



Agency Managed Equipment - Migration Status

Agency	Migration Status
Commission for the Blind	Budgeted and planning to migrate to DCS 2023
Construction Contractors Board	Migrating to DCS managed services 2023
Dept of Education	Majority migrated 2022; some remain
Dept of Energy	Migrating to Co-Location 2023
Liquor & Cannabis Commission	Planning migration
Long Term Care Ombudsman	Policy Option Package requests funding to migrate (as a DAS IT Client Agency)
Dept of State Lands	Migrating to DCS Cloud Brokering Services
Dept of Transportation	Considering Co-Location
Psychiatric Security Review Board	Migrating as DAS IT Client Agency 2023

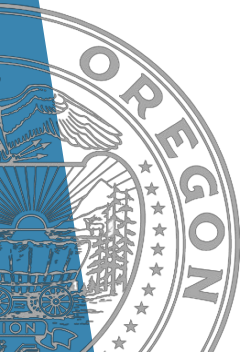


Further Plans to Migrate to DCS

- ▶ Agency IT Strategic Plan Template
 - Required Element #4: IT Strategic Initiatives
 - Example Supporting Item: Data Center Services Adoption

Agency IT Strategic Planning Template and Guide

Version 1.0



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Mainframe Current State

- ▶ Z15 Mainframes leased October 2021
- ▶ Replaced end of life Enterprise Class with Business Class – downsized based on reduced usage
- ▶ 60 month lease term ending September 2026
- ▶ Hardware purchase option at end of lease
- ▶ Lease extension option available
- ▶ End of useful life estimated 2030



Mainframe Support Structure

Vendor

- Hardware

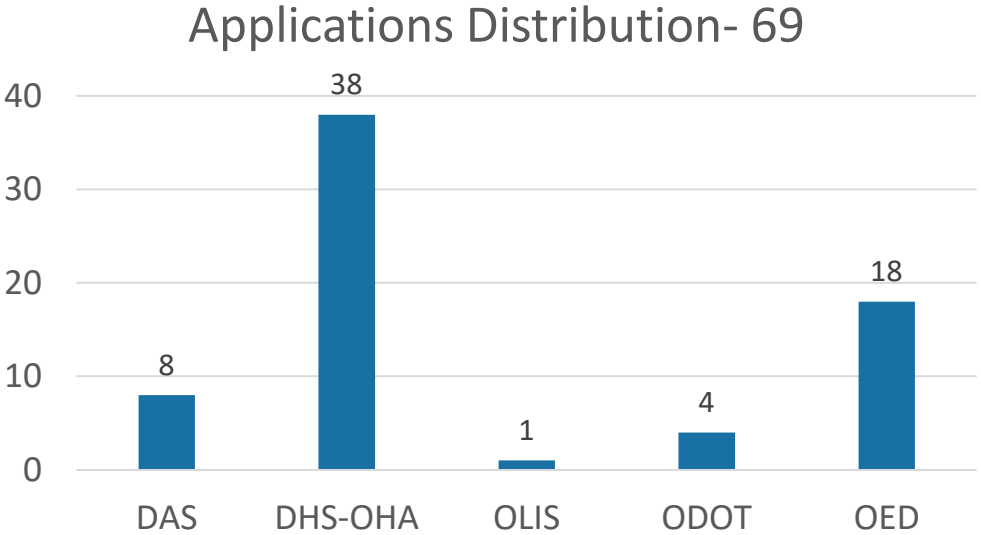
Data Center Services

- Operating System
- Software
- Utilities

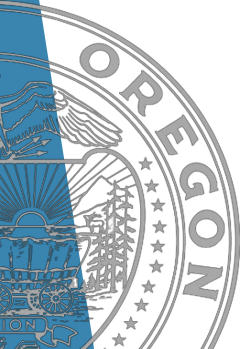
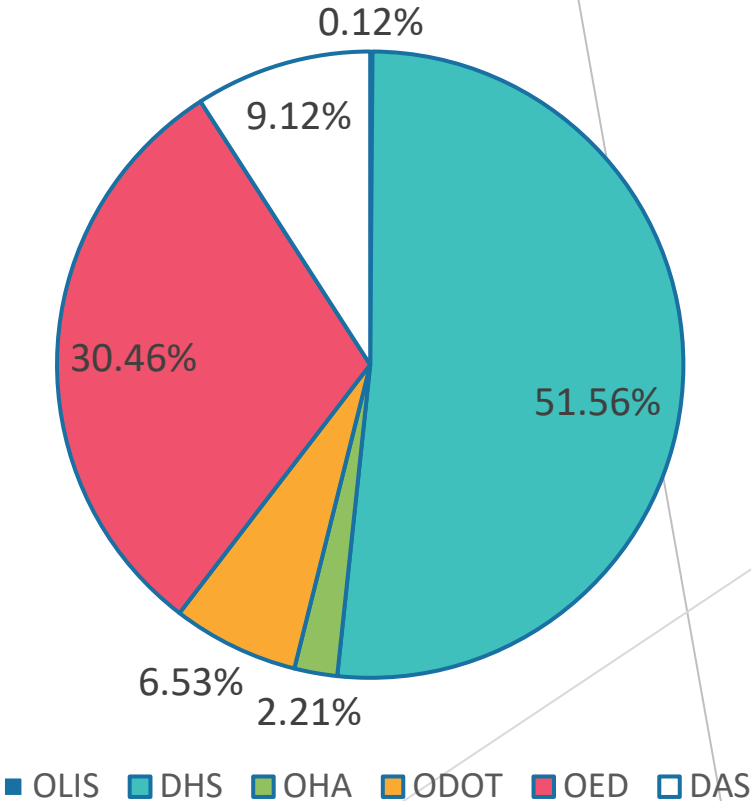
Agencies

- Applications

Mainframe Usage

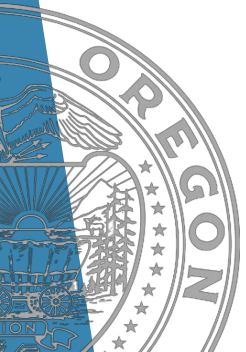


October 2022 - February 2023



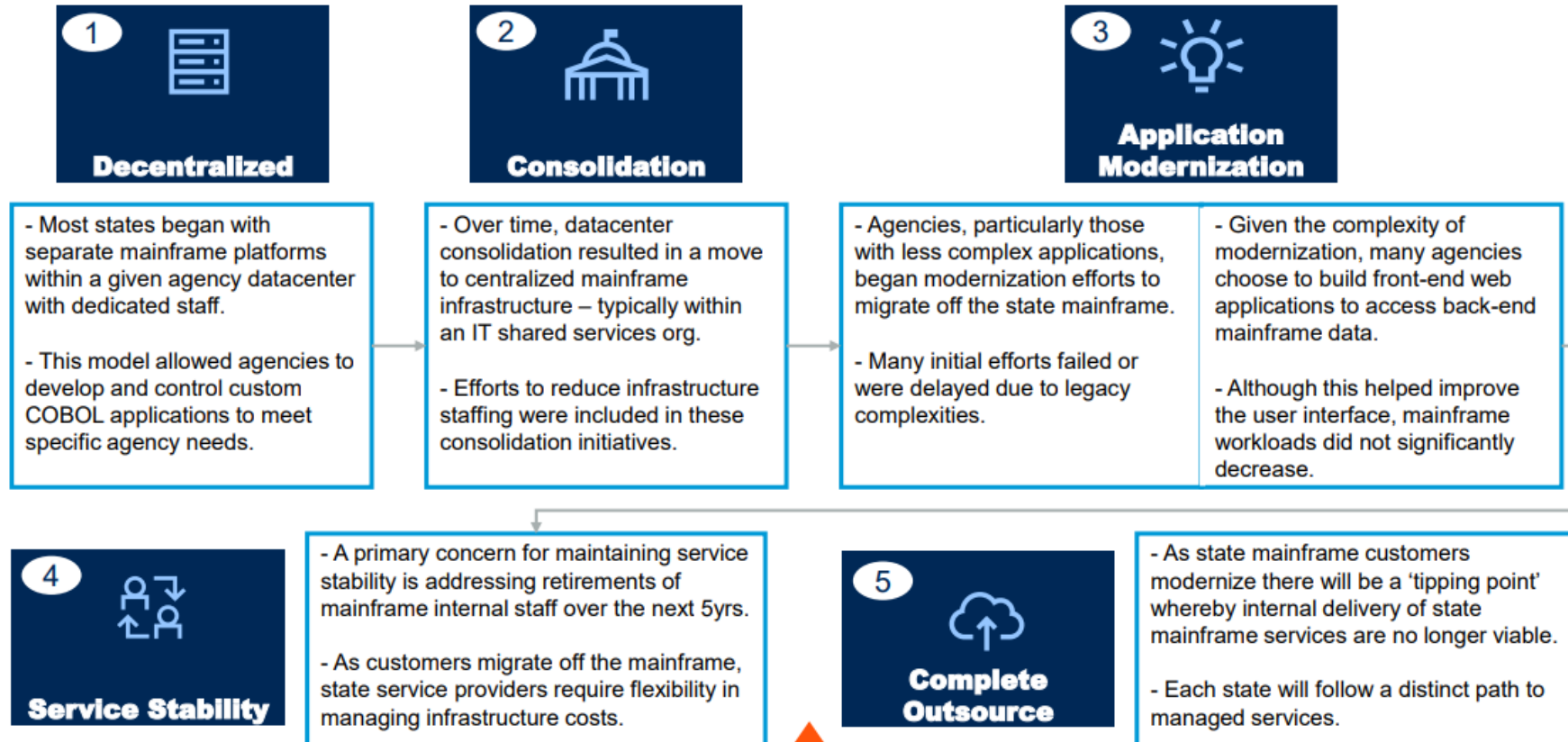
Gartner Mainframe Benchmark Study

- ▶ Study concluded July 2020
- ▶ The objectives of the Mainframe Benchmark Study included:
 - An analysis of the current DCS Mainframe service
 - Mainframe Market Price Assessment
 - Market research of potential alternatives
 - Strategic roadmap for service evolution



Mainframe Service Over time

Conceptual evolution of state mainframe service delivery



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Gartner Mainframe Benchmark Study

Market Research Highlights

Executive Summary

- Gartner's Market Research and Analysis consisted of the following components:
 - Market Assessment Benchmark
 - Mainframe Market Research
 - Peer State Interviews
- Market research validated current state findings and assumptions, as well as preliminary go-forward options for DCS service evolution given similar trends in the market and across peer states.
- Gartner validated the use of vendor managed services can offer states greater flexibility given the uncertainties in customer modernization initiatives and upcoming staff retirements.

Key Findings

1. The Gartner Market Assessment Benchmark concluded that outsourcing the current DCS Mainframe service would likely cost more than the current cost structure.
 - DCS 5yr cost: \$62.1M (annual costs of \$12.4M times five years)
 - Outsource 5yr cost: Market Low of \$61.9M – Market High of \$91.5M
2. Mainframe Market Research and Peer Interviews illustrated a transition to managed services given customer modernization efforts and an impending wave of retirements over the next 5yrs.
3. The transition to managed services for each state is driven by a specific 'tipping point' including significant customer workload transitions, staff related challenges or by executive mandate.

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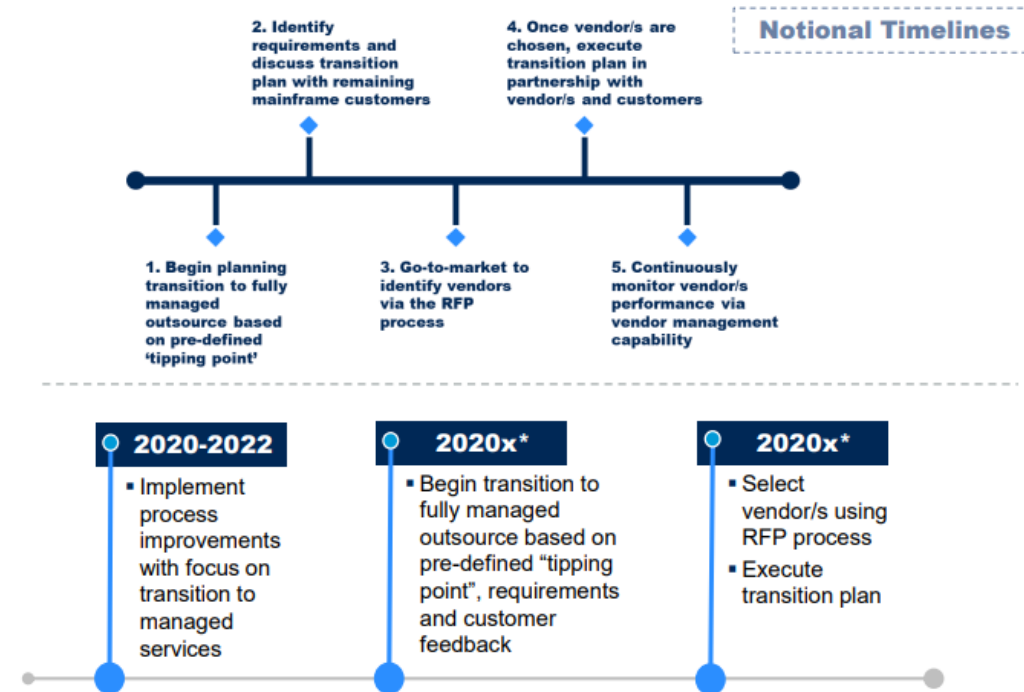
Fully Managed Service

3 Fully Managed Outsource of Mainframe Service



Workforce Plan: Alternative #3

- DCS, in conjunction with state leadership, should define criteria for the 'tipping point' in transitioning the delivery of mainframe services to a fully managed outsource model.
- Given the significant transformation required to transition services, DCS will need to develop a comprehensive transition plan, including resourcing and customer relationship management, to ensure service stability.
- Once the transition to a fully managed outsource is complete DCS vendor management capabilities will be key to maintaining sustained mainframe service support.



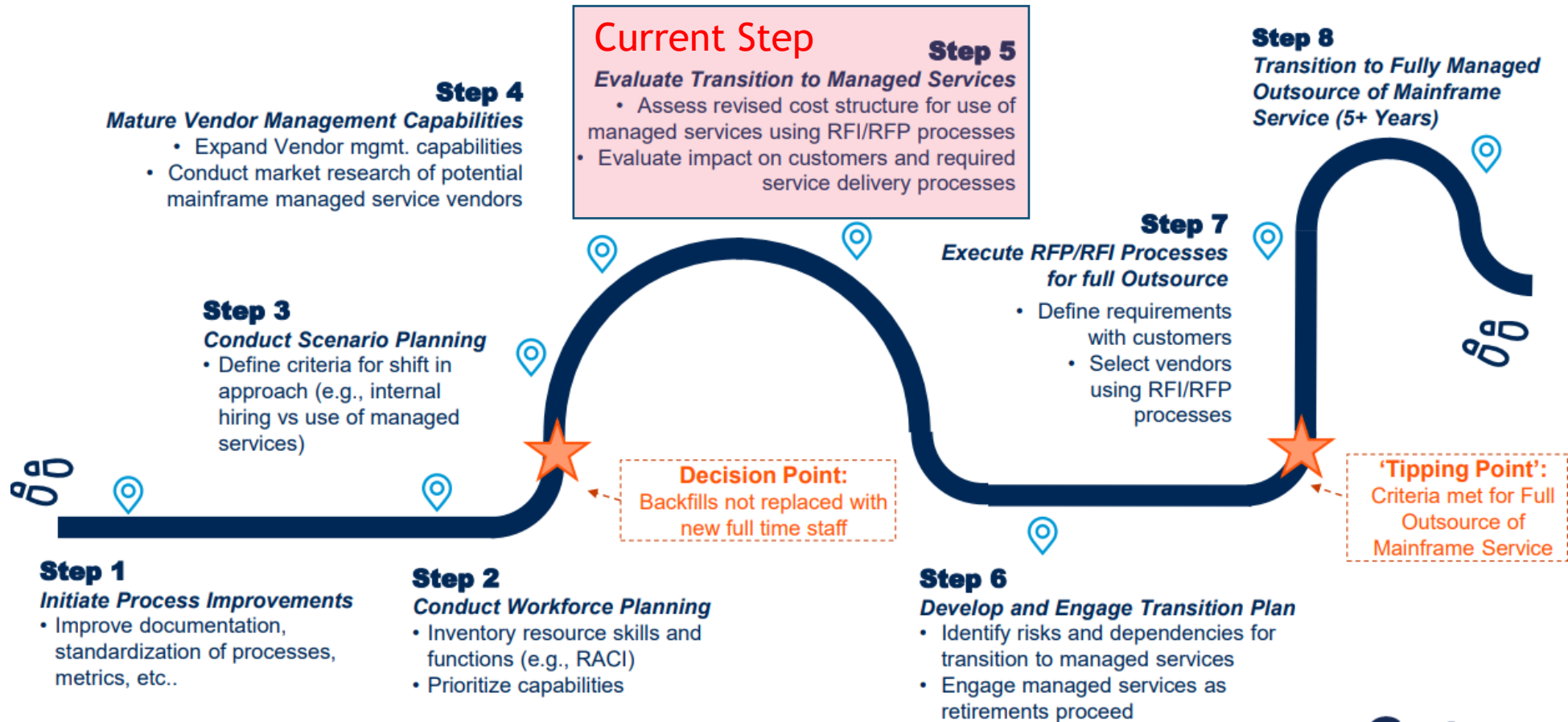
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* Likely post 2025



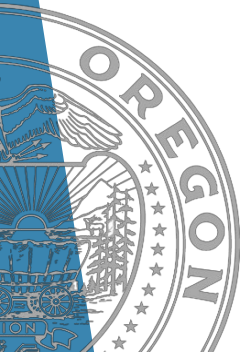
Approach Roadmap

Recommended Approach – Steps for transitioning to managed services



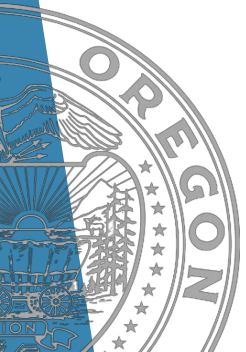
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Request For Proposal (RFP) Status

- ▶ Solicitation for specialized RFP writer closes in April 2023
- ▶ Engagement will result in the release of an RFP for Mainframe Managed Service Provider
- ▶ Support options include:
 - Vendor may support the state leased mainframe equipment at the State Data Center
 - Vendor may assume lease of mainframe equipment at the State Data Center and associated software
 - Vendor may locate vendor owned equipment at the State Data Center and use vendor software
 - Dependent on network requirements of agency mainframe application, vendor owned mainframe may be hosted at vendor facility (MFaaS – Mainframe as a Services)
 - Regardless of physical location, vendor may provide support for agency owned mainframe applications
 - Vendor may provide modernization support or services to assist agencies in mainframe divestiture





Agency Mainframe Summaries



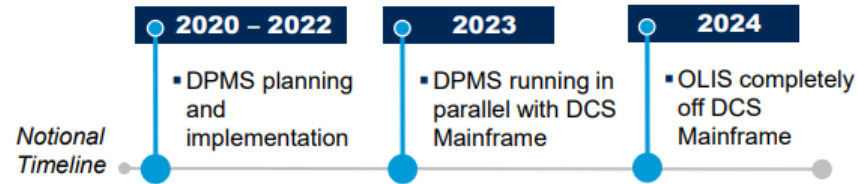
Legislature – Benchmark Status

Customer Interview Results: OLIS High-Level Summary

Migration Plan

- Document Publishing & Management System (DPMS) – Mainframe replacement solution – expected to run in parallel with legacy DCS Mainframe application until 2023
- By 2024, OLIS will be completely off Mainframe
- Primary focus for migrating off Mainframe was related to long-term staffing concerns

Migration Timeline



Mainframe Staff

- 1.0 FTE Mainframe Developer
- 0.25 FTE contractor infrastructure support
- Once off the DCS Mainframe, OLIS plans to utilize x86 developers shared across many applications

Mainframe Cost

- Total DCS related costs for last 9 months:
 - \$38,397

Applications on Mainframe

- The DCS mainframe serves as a virtual host for one legacy OLIS application.
 - The OLIS Legislative application service is hosted on the DCS Mainframe using z/VM.
 - The OLIS Legislative application progress relies upon mainframe content in order to complete bill drafting on OLIS 20+ year old, COTS system
 - This is the second attempt for OLIS to modernize this application off the Mainframe.
- OLIS *does not* leverage DCS for any other applications

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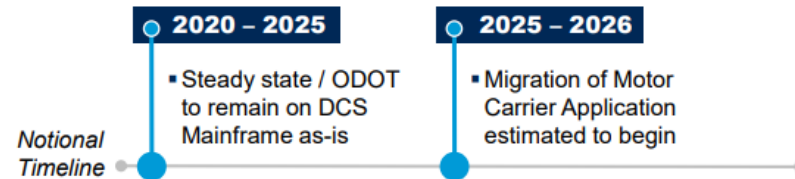
ODOT – Benchmark Status

Customer Interview Results: ODOT High-Level Summary

Migration Plan

- ODOT will continue to be a significant DCS Mainframe customer for the foreseeable future¹
- Migration of their Motor Carrier Application will take roughly 5 years to modernize
 - ODOT is applying for a Federal grant to replace a subset of its Motor Carrier Application

Migration Timeline



Mainframe Staff

- ~7.5 FTEs
 - 4.0 FTEs are Mainframe Developers (DBA and COBOL)
 - 3.5 FTEs Mainframe Infrastructure Support

Mainframe Cost

- Total DCS related costs for last 9 months :
 - \$5.4M

Applications on Mainframe

- Currently supporting 14 COBOL Mainframe applications— including highway maintenance and tracking, finance, contract management, and project management system
- TEAMS (custom finance app) is the largest ODOT application currently on the DCS Mainframe
 - There are hundreds of applications associated with Teams
 - No current modernization plans exist for TEAMS

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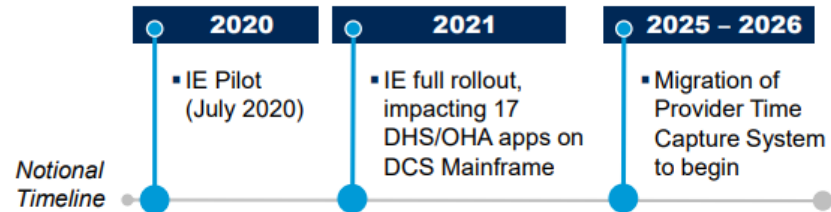
ODHS | OHA – Benchmark Status

Customer Interview Results: DHS/OHA High-Level Summary

Migration Plan

- The goal of DHS/OHA is to ultimately retire all legacy systems off DCS Mainframe; however there is no holistic approach in place
- 17 applications will be somewhat modified / overhauled due to the Integrated Eligibility (IE) project – including SNAP Application (the largest sunset) – representing a 25% reduction
- Provider Time Capture System¹ migration expected in 5 years

Migration Timeline



Mainframe Staff

- 25 FTEs²
 - 21.0 FTEs Mainframe Developers
 - 4.0 FTEs Mainframe Infrastructure Support
- 7 contractors for legacy mainframe application development and documentation in support of the IE project

Mainframe Cost

- Total DCS related costs for last 9 months :
 - \$3.2M

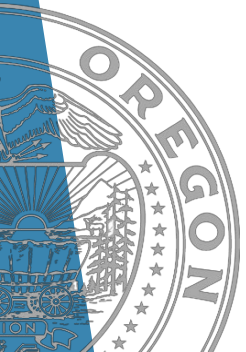
Applications on Mainframe

- DHS/OHA is deeply entrenched in Mainframe
- There are about 20 sizable systems that will remain on the Mainframe after IE cutover:
 - Various specialized, low volume eligibility data and applications not within the scope of the IE project
 - Master Client Index databases that will be synced bi-directionally with the new IE platform integrated client database
 - Various financial data systems that rely on Mainframe to conduct business and integrate with federal systems

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1. Provider Time Capture is the most complicated DHS/OHA application currently on DCS Mainframe.
2. There are normally 35 FTEs; however, there are 9-10 current vacancies on hold due to hiring freeze.

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Employment – Benchmark Status

Customer Interview Results: OED High-Level Summary

Migration Plan

- Long term, OED is committed to moving completely away from DCS Mainframe for its core business applications
- Core Business Modernization in 2 Phases (45% of current footprint) —
 - Phase 1 (Current): Remove Mainframe from business processes for Unemployment Insurance (UI)
 - Phase 2 (Future): Replace Workforce Systems entirely

Migration Timeline



Mainframe Staff

- 7.0 FTEs
 - 6.0 FTEs Mainframe Developers
 - 1.0 FTEs Mainframe Infrastructure Support

Mainframe Cost

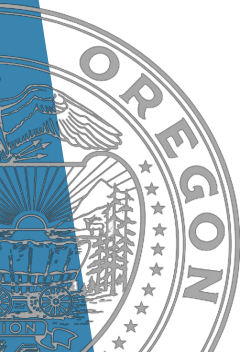
- Total DCS related costs for last 9 months :
 - \$1.2M

Applications on Mainframe

- Custom, core business applications built in-house:
 - Unemployment Insurance System – both tax and business side – is fully on the DCS Mainframe with web front-ends
 - Work Source is a mix of Mainframe and web-based technology
- OED applications on DCS Mainframe average at least 30+ years old

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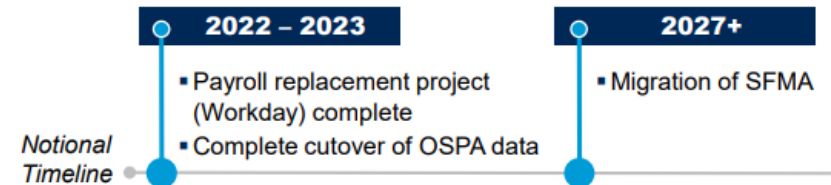
DAS – Benchmark Status

Customer Interview Results: DAS High-Level Summary

Migration Plan

- Current Payroll & Time Tracking Project – OSPA replacement solution – estimated to be complete late 2022 or early 2023¹
- SFMA (state custom financial system) will be replaced eventually, likely in 7-10 years
- There are currently no plans / modernization efforts to replace the Voice Services Billing and Tax Distribution applications

Migration Timeline



Mainframe Staff

- 2.0 FTEs
 - 1.7 FTEs Mainframe Developers
 - 0.3 FTEs Mainframe Infrastructure Support

Mainframe Cost

- Total DCS related costs for last 9 months :
 - \$652,501

Applications on Mainframe

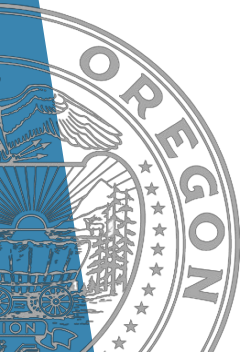
- 4 key applications on DCS Mainframe:
 - Statewide Financial Management Application (SFMA)
 - Oregon State Payroll Application (OSPA)
 - Voice Services Billing
 - Tax Distribution
- All DAS applications on DCS Mainframe are on z/OS
- DAS plans to keep historical data on Data Mart for research purposes

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1. DAS is still looking at 3+ years running OSPA on DCS Mainframe prior to complete cutover.

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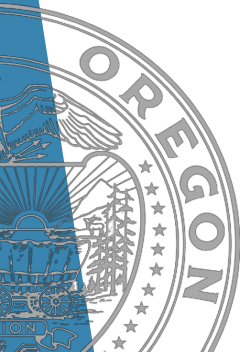


Further Plans to Migrate from Mainframe

- ▶ Agency IT Strategic Plan Template
 - Required Element #4: IT Strategic Initiatives
 - Example Supporting Item: Mainframe [Deprecation] Retirement

Agency IT Strategic Planning Template and Guide

Version 1.0



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Thank you

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