WaTech
Washington Technology Solutions

State Cloud Smart Strategy

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Table of Contents

Executive Summary

Washington state's ability to leverage technology to improve the lives of its residents and communities' hinges on the state's ability to use secure, modern cloud services. Cloud migration will enable the creation of a connected government that transforms the delivery of vital services to Washingtonians.

Pursuing a Cloud Smart strategy will accelerate the state's adoption of cloud technologies and improve the resiliency, security, innovation, scalability, and agility of state services.

This approach was adopted as the result of extensive work that occurred in the wake of House Bill 1274 (RCW 43.105.375), which affirmed the state's intent to migrate state assets to cloud services.

The legislation also created the Cloud Transition Task Force to review the impacts a cloud transition could have on workforce staffing and retraining. The Cloud Transition Task Force report was delivered to the Legislature in 2021.

> ## What is Cloud Smart?
>
> Being "Cloud Smart" means taking advantage of cloud platforms and services and focusing on delivering key business outcomes including enhanced statewide agility, security and resilience, and shifting from a CapEx to an OpEx model. Cloud Smart also means conducting foundational work, including strategic planning, workforce readiness, establishing modernization strategies, and leveraging multi-cloud and hybrid-cloud environments to drive Cloud adoption.

WaTech plays a leadership role in fostering the use and adoption of cloud technologies through its Enterprise Cloud Computing Program (ECCP). The ECCP, guided by House Bill 1274 and built upon an earlier State Cloud Readiness Report, will accelerate state agencies' migration to the cloud.

The ECCP has five strategic goals which include building a statewide framework and service foundation to coordinate and accelerate cloud migrations, developing a well-trained and upskilled state workforce prepared for cloud adoption, and creating a state Enterprise Cloud Marketplace that will use WaTech's cloud brokerage services to provide cloud capabilities to state agencies.

The purpose of this document is to:

- Review the five strategic goals and provide use cases for reference.
- Provide the state's Cloud Computing Strategic Goals & Objectives.
- Lay out the state's Shared Responsibility Model between WaTech and agencies.
- Provide an overview of the business outcomes expected with cloud adoption.

Cloud Smart Outcomes

The state's Cloud Smart direction allows Washington to realize connected government by improving the resiliency, security, innovation, scalability, and agility of state services.

WaTech will partner with agencies – on people, processes, and technology changes – to realize the vision of a Cloud Smart state and deliver services that meet the needs of our agencies and allows them to best serve their customers.

Washington's Cloud Smart direction will result in significant changes such as new programs and services, job classifications, statewide policies, and industry partnership opportunities. These business outcomes will ensure Washington's agencies, employees, and technology investments improve the lives of our residents, by:

- Modernizing and transforming digital government services through the transition to cloud platforms, services, and tools.
- Enhancing statewide security, and resilience through collective application of cloud technologies, modern cloud security services, standard frameworks and controls.
- Shifting from a Capital Expense (CapEx) to an Operational Expense (OpEx) model for state IT investment. This will reduce large upfront investments and replace them with predictable ongoing expenses and allow the state to pay for what's used and scale when needed.
- Improving and optimizing cloud operating costs through aggregated pricing with master contracts, centralized service level monitoring, and transparent "pay as you go" cost metrics.
- Empowering the state IT workforce with the tools and skills to provision and operate systems in a hybrid cloud environment.
- Improve operational and business agility by enabling the agencies to react to federal, state, and business changes more quickly, and deploy cloud-native capabilities.
- Maximizing the use of statewide cloud-shared services, reducing duplicative efforts, and improving the experience of agency customers.

Washington's Cloud Smart Strategic Direction

GOAL 1 FOUNDATION:
Statewide framework to coordinate and accelerate cloud migrations.

To accelerate agency migrations, WaTech created the ECCP, guided by the House Bill 1274 to provide statewide leadership and establish the state's Cloud Center of Excellence (CCoE). The ECCP provides statewide cloud strategy, cloud architecture, cloud shared service design and roadmap, and governance model. The program will develop the state's cloud brokerage (see Goal 4) and cloud marketplace services (see Goal 5). It also leads and organizes cloud communities of practice. Additionally, the ECCP will develop enterprise cloud computing policies and standards for the state to follow. The ECCP also facilitates the development of the Capability Model (CM) which inventories and assesses enterprise cloud capabilities across the state. The CM provides a foundational roadmap to develop shared enterprise cloud capabilities. It also defines and prioritizes critical statewide cloud capabilities and all associated services.

In addition to the WaTech vs. Agency roles in the "Cloud Smart Share Responsibility Model" below, WaTech will further define the state of Washington's shared responsibility model including Cloud Service providers (CSP) and commonly shared responsibility models for IaaS/SaaS/PaaS.

GOAL 2 WORKFORCE:
Well-trained and upskilled state workforce prepared for cloud adoption.

The Cloud Transition Task Force report recommends the state:

- Establish a Cloud Readiness Program within WaTech to help agencies plan and prepare for further transitioning to cloud computing.

- Establish a Cloud Retraining Program to provide a coordinated approach to skills development and retraining.

- Define career pathways and core competencies that will support opportunities for the state's IT workforce for advancement and transferability across agencies.

- Develop public/private partnerships with industry partners to ensure effective planning for staff retraining.

GOAL 3 CONSULTING:
Consistent, mature, adaptive agency cloud migrations.

The state's consulting service will enable agencies' cloud migration success by providing state agencies with a central point of contact for WaTech consultants through "one front door", with access to WaTech staff with expertise in multiple cloud disciplines. This will allow WaTech to help agencies develop a comprehensive approach in planning their cloud migration journeys. Leveraging their assigned WaTech Business Relationship Manager (BRM) or related processes, agencies will meet with WaTech's cloud consulting service, and define a proper scoped consulting engagement based on agency needs.

Use Case 1: CCoE Portal Trainings: Sara, an IT System Administrator at an agency, logs into the CCoE portal's training section to view relevant cloud training roadmaps. She filters by cloud experience level (new to cloud) and views trainings for Cloud System Administrators. She selects a training curriculum that meets her needs, with integration to the state's Learning Management System (LMS)

The consulting service could include foundational planning services, including workload analysis and planning; evaluating workloads for potential cloud migration paths based on factors such as timeframe, levels of effort, and associated costs; and engaging with WaTech internal teams and/or external resources throughout the migration process.

Use Case 2: CCoE Portal:	Use Case 3: Consulting Service:
Marcus, an agency IT Manager, logs into the CCoE portal to browse content, including: • Cloud Service Portfolio. • Case Studies. • Links to Learning & Training. • Links to requesting services. • Cloud Deployment Guidance. • Hybrid/Multi-Cloud Reference Architecture Examples. • Cloud Community of Practice calendar.	An agency plans to implement a new Platform as a Service (PaaS) solution and is unable to choose between solutions. The agency contacts their Business Relationship Manager, who arranges a meeting with the WaTech Cloud Consulting team or they request consulting service through WaTech's Customer Portal. After the consulting engagement is scoped and agreed upon, a consultant will be assigned to work with the agency to guide their PaaS selection and implementation.

GOAL 4 BROKERAGE:
Accelerated purchasing and increased buying power for state agencies.

The Statewide Cloud Readiness Assessment concluded that WaTech should transform its cloud support role to become a Cloud Services Broker (CSB). The CSB model introduces an optimized method for agencies to quickly access and deploy cloud workloads while safeguarding the interest of the enterprise via effective governance models. Agencies have the flexibility to choose from a standardized catalog of cloud service options while having access to a broad range of implementation and support services. This presents agencies with a streamlined procurement and deployment process, greater efficiency using shared services, and the most competitive pricing available through the marketplace.

The state's cloud brokerage service will work in close partnership with the Department of Enterprise Services (DES) to put contracts in place that leverage economies of scale across state agencies by negotiating cloud provider products and services for statewide use. This means multiple agencies will not need to renegotiate or duplicate contracting and procurement efforts for the same technologies and all agencies will receive the best-negotiated rates.

New enterprise services such as the brokerage and cloud consulting services will be transformational as WaTech strives to provide more value-added services. All those services will be delivered through the Goal 5 marketplace to enable agencies to accelerate their workloads transition to the cloud.

GOAL 5 MARKETPLACE:
Accelerated cloud technology deployments for state agencies.

The state's Enterprise Cloud Marketplace will use enterprise contracts defined through brokerage to provide cloud services to state agencies, which can be used in a hybrid cloud environment for Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS) based on the agency's requirements. The full-service Enterprise Cloud Marketplace vision includes licensing so separate or additional procurements, solutions, or licenses would not be required outside the marketplace. Agencies can also track their costs and billing through the marketplace's cost management module.

For vendor-hosted business applications and SaaS solutions not in the marketplace, agencies should complete cloud consulting services and a Security Design Review (SDR) before procuring an

additional solution to ensure correct cloud capabilities are included. Existing agency cloud solutions must transition to the state's standardized cloud capabilities and consume services in alignment with developed policies. Agencies moving to the cloud before the state's Enterprise Cloud Marketplace is deployed will need to comply with the latest cloud policies and standards. Agencies should complete a cloud consulting services engagement to evaluate options to comply, which includes a SDR if needed.

Use Case 4: Cloud Marketplace – IaaS: An agency wants to adopt Virtual Machines. Juanita logs into the Enterprise Cloud Marketplace, creates an account if needed, and selects the cloud service provider and purchases the number of virtual machines (VMs) the agency needs through self-service. Juanita does not need to submit a ticket. Billing invoices are available in the marketplace.	**Use Case 5: Cloud Marketplace – PaaS:** An agency wants to move away from running their relational databases on virtual machines. Thomas logs into the Cloud Marketplace to choose a PaaS database offering from a major cloud service provider and purchase the service. Thomas can submit a ticket if there are implementation issues.	**Use Case 6: Cloud Marketplace – SaaS:** An agency wants to begin using a cloud-based project management tool. Dionne logs into the Cloud Marketplace to purchase the number of licenses needed from the approved software. As in Use Cases 4 & 5, an additional SDR is not needed.

Use Case 7: Existing Cloud Workloads:
Example 1: An agency has existing workloads in the cloud. New cloud policies and standards have been introduced. Because the existing workloads are not grandfathered in, they need to build a plan to comply leveraging the cloud consulting service. Since the agency already completed an SDR, an additional SDR or waiver may not be needed.
Example 2: A different state agency also has existing cloud workloads that are not grandfathered in. To align with new cloud policies, they contact WaTech for consultation and engagement. Through the cloud consulting engagement, the agency adopts a pre-configured enterprise cloud environment to comply with policies and standards.

State's Cloud Computing Strategic Goals & Objectives

Goal 1 Foundation: Statewide framework to coordinate and accelerate cloud migrations.

- Objective 1.1: Build a foundational enterprise cloud computing program.
  - o Deliverable 1.1.1: Publish a statewide cloud strategy.
  - o Deliverable 1.1.2: Publish a statewide adoption framework.
  - o Deliverable 1.1.3: Provide agencies with tools and metrics to speed adoption, improve security, and optimize efficiency.

- o Deliverable 1.1.4: Enhance the state cloud operating model, resources and organization planning to support the cloud strategy.
- Objective 1.2: Develop a cloud shared services roadmap that contains a plan for when enterprise services and capabilities will be available to agencies.
    - o Deliverable 1.2.1: Publish an enterprise capability model.
    - o Deliverable 1.2.2: Continue to evolve existing mandatory Enterprise Shared Services: such as Identity & Access Management and Security Design Review (SDR).
    - o Deliverable 1.2.3: Future mandatory Enterprise Shared Services: Most of these cloud enterprise services are in the process of aligning with the Cloud Capability Model, prioritizing, and building out at an enterprise level and then going through the governance process.
    - o Deliverable 1.2.4: Optional Enterprise Shared Services: Build new enterprise shared services that utilize modern public cloud technology and reduce duplicated efforts from agencies. Example: a shared enterprise data analytics service.
- Objective 1.3: Publish a statewide cloud governance model.
- Objective 1.4: Develop required cloud policies and standards to streamline cloud adoption.
- Objective 1.5: Provide clear architectural guardrails and templates to reduce risk, increase consistency, achieve compliance with statewide IT policy, and enhance statewide agility, security, and resilience.
- Objective 1.6: Establish the state's Cloud Center of Excellence framework.
- Objective 1.7: Establish forums such as cloud communities of practice, build trust through inclusion, transparency, and communication, and work together with agencies for planning and developing cloud roadmaps.

Goal 2 Workforce: Well-trained and upskilled state workforce prepared for cloud adoption.

- Objective 2.1: Establish a cloud readiness program to focus on developing appropriate tools and technical assistance to help agencies prepare agency-specific cloud transition roadmaps, associated staff training plans and organizational change management (OCM).
- Objective 2.2: Establish a Cloud Retraining Program and fund within the Cloud Readiness Program to provide a coordinated approach to skills development and retraining to ensure IT staff can prepare appropriately for the state's transition to cloud computing.
- Objective 2.3: Define career pathways and core competencies that will support opportunities for the state's IT workforce for advancement and transferability across agencies.
- Objective 2.4: Develop public-private partnerships with industry partners to ensure effective planning for staff retraining.

Goal 3 Consulting: Consistent, mature, adaptive agency cloud migrations.

- Objective 3.1: Implement a cloud consulting service to support agency cloud migrations.

- Objective 3.2: Build internal capacity and expertise to support cloud migrations and product deployments.

- Objective 3.3: Establish a portfolio of vendors and consultants for agencies' use.

- Objective 3.4: Steward implementation of a Cloud Center of Excellence portal, including content, that provides tools, templates, and resources to guide state agencies' cloud adoption.

    o Deliverable 3.4.1: Provide cloud resources to help agencies architect, develop, secure, and migrate to cloud environments.

Goal 4 Brokerage: Accelerated purchasing and increased buying power for state agencies.

- Objective 4.1: In partnership with the Department of Enterprise Services and applicable resellers, develop statewide technology contracts leveraging the state's economies of scale that are available to all agencies.

    o Deliverable 4.1.1: Develop minimum standard contract terms to be used for contracts, including security, data, integration, standards, etc.

- Objective 4.2: Integrate existing WaTech services or establish new value-added enterprise services such as cloud consulting services to enable agencies to accelerate their workload transitions to the cloud.

- Objective 4.3: Develop necessary process, business, and tools requirements for the Cloud Marketplace, such as configuration, automation and integration, based on agency engagement and feedback.

Goal 5 Marketplace: Accelerated cloud technology deployment for state agencies.

- Objective 5.1: Establish a statewide full-service Enterprise Cloud Marketplace for agencies to purchase hybrid/multi-cloud capabilities, solutions, services, and licenses.

- Objective 5.2: Setup and maintain services catalog in the Cloud Marketplace; publish external and WaTech provided services to the marketplace as defined in the Cloud Service Brokerage, (updating catalog regularly); and integrate with external marketplaces as needed.

- Objective 5.3: Accelerate deployment by having security design reviews completed for cloud marketplace solutions prior to agency purchase.

- Objective 5.4: Implement a cost and billing management module and performance reporting including key performance indicators (KPIs) and service level agreements (SLAs).

- Objective 5.5: Develop an enterprise cloud financial operations (FinOps) strategy for cloud cost management and optimization, as the state transitions to a hybrid-cloud ecosystem, including agencies' shift from capital expenditures (CapEx) to operating expenditures (OpEx).

Cloud Smart Shared Responsibility Model

To execute on Washington's Cloud Smart strategy, WaTech will develop a comprehensive shared responsibility model including WaTech, agency and cloud service providers. The following table explains a federated shared responsibility model between WaTech and state agencies (Table 1).

Table 1. Federated Shared Responsibility Model

WaTech's Role	Agency's Role
Provide statewide cloud strategic direction.	Align cloud adoption and migration projects with the state cloud strategy.
Provide a cloud retraining program.	Utilize the Cloud Center of Excellence portal and retraining program to train and upskill staff.
Provide cloud enterprise architecture and enterprise shared services.	Leverage multi/hybrid cloud architecture and shared enterprise services in cloud adoption and migration, including mandatory and optional services.
Provide cloud policies and standards.	Adhere to cloud policies and standards. Leverage different WaTech or Agency managed options available.
Provide cloud consulting services.	Leverage consulting services to plan and implement cloud adoption and migration projects. Agency engagements with vendors should align with the overall consulting guidance.
Provide cloud brokerage.	Leverage statewide cloud brokerage in contracting and procurement.
Provide a cloud marketplace.	Utilize the cloud marketplace to purchase new services, solutions and licenses.
Provide cloud governance & facilitate agency partnership.	Engage in communities of practice and cloud governance bodies & collaborate with WaTech.

Contact

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