



ARCHITECTURE DECISION RECORD (ADR)

Decision Summary: Designate “Windows Subsystem for Linux 2” (WSL2) as an Enterprise Standard utility within the Software Factory (SWF) Containerization category

Approved by the VA Chief Architect (OIT/OCTO) on May 1, 2026

Context

All developers across the organization are currently provisioned with Windows Government Furnished Equipment (GFEs). Development teams both within platform teams and across the broader organization require the ability to develop and test containers locally as part of their standard workflows.

Podman is the approved container development and testing tool. However, Podman cannot run natively on Windows without a Linux kernel environment and therefore requires a Linux runtime to operate. Windows Subsystem for Linux 2 (WSL2) provides that Linux kernel environment directly on Windows GFEs, making it a prerequisite for running Podman.

Without WSL2, developers are left with the following alternatives: spinning up virtual machines in a cloud environment and accessing them remotely over their GFE, or being issued macOS devices, which can run Podman natively. Neither alternative is practical at scale given the current Windows GFE standard.

Decision

Designate WSL2 as an approved and standardized utility within the Containerization category of the Software Factory (SWF) Utilities framework, to be made available on Windows GFEs for developers requiring local container development and testing capabilities.

WSL2 will serve as the Linux kernel runtime required for Podman on Windows and is not intended as a general-purpose Linux development environment.



Rationale

WSL2 is designated within the Containerization category as a supporting runtime dependency required to enable container development tools (e.g., Podman) on Windows GFEs.

WSL2 is a hard technical dependency for Podman on Windows; there is no supported alternative path. Given that all developers are provisioned with Windows GFEs, WSL2 is the only practical way to enable local container development at scale without introducing significant cost or hardware changes.

Local container development via Podman over WSL2 is faster and more iterative than remote VM-based workflows, reducing latency and improving developer productivity across all teams. It also eliminates the need for persistent cloud VMs used solely for container testing, reducing compute spend. Standardizing on WSL2 achieves this without requiring procurement of alternate devices such as MacBooks, which would introduce inconsistent tooling environments and significant policy overhead.

The alternatives considered cloud-hosted VMs, MacBook provisioning, and maintaining the status quo with no supported path each carry higher cost, operational complexity, or productivity impact than adopting WSL2 on existing GFEs

Operational Impact(s)

- WSL2 installation and configuration will need to be enabled and managed across Windows GFEs where required.
- Support ownership for WSL2 configuration and troubleshooting must be defined prior to rollout.
- Additional guidance and documentation will be required for developers to properly use WSL2 with Podman.
- Endpoint security and compliance controls may need to be reviewed to account for the embedded Linux runtime environment.



For questions or further clarification, contact the Enterprise Architecture team at ea@va.gov.

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