

MO-003

[Go to Mission Objectives](#)

Statement

Crucible SHALL deploy an **Infrastructure Baseline** to each supported **Deployment Platform** from the same platform independent **Crucible Description**, except for explicitly identified platform specific parameters.

Source Statement

The system SHALL provide cloud-agnostic deployment capabilities.

Source

Crucible System Requirements Specification, Version 1.1 Draft, Mission Objectives, MO-003.

Assessment

The source statement expresses the approved mission objective but does not define a fully testable requirement.

The following Specification Discipline and Authoring findings apply:

- **The system** does not use the defined system name
- **Provide** is a weak verb that does not identify the behavior **Crucible** performs
- **Cloud agnostic** does not identify the characteristics required for conformance
- **Deployment capabilities** does not identify the deployable artifact, deployment inputs, target platforms, or required outcome
- The source statement does not distinguish platform independent information from platform specific information
- The source statement does not define how verification determines whether cloud specific behavior has leaked into platform independent components

The normalized Statement replaces the weak verb with **deploy**, identifies the deployable **Infrastructure Baseline**, identifies the common input, and bounds permitted platform specific variation.

Rationale

Organizations may deploy equivalent infrastructure across commercial cloud, private cloud, on premises, edge, and disconnected environments.

Without an explicit separation between platform independent and platform specific information, deployment logic becomes coupled to individual providers. Such coupling increases migration effort, produces inconsistent deployment behavior, and allows provider specific implementation details to spread through the core architecture.

[Crucible](#) addresses this problem through:

- [Crucible Descriptions](#)
- [Infrastructure Baselines](#)
- Platform independent deployment information
- Explicitly identified platform specific parameters
- A provider abstraction
- Provider implementations
- Consistent deployment results across supported [Deployment Platforms](#)

This separation allows the same deployment intent to target multiple platforms without embedding provider specific behavior in platform independent Crucible components.

Applies To

This requirement applies to:

- [Crucible](#)
- [Crucible Descriptions](#)
- [Baseline Composition](#)
- [Infrastructure Baselines](#)
- [Infrastructure Deployment](#)
- [Deployment Platforms](#)
- [Platform Independence](#)
- [Platform Specific Parameters](#)
- [Provider Abstraction](#)
- [Provider Implementations](#)
- [Connected Environments](#)
- [Disconnected Environments](#)
- [Air-Gapped Environments](#)
- [CI/CD Pipelines](#)
- [Operational Lifecycle](#)

Verification

1. Verification SHALL confirm that the same platform independent [Crucible Description](#) can identify deployments for at least two supported [Deployment Platforms](#)
2. Verification SHALL confirm that each tested deployment uses the same [Infrastructure Baseline](#)
3. Verification SHALL confirm that differences between tested deployments are limited to explicitly identified platform specific parameters

4. Verification SHALL confirm that platform independent Crucible components do not contain provider specific deployment behavior
5. Verification SHALL confirm that each provider implementation conforms to the applicable provider contract
6. Verification SHALL confirm that each tested deployment produces an environment that satisfies the common acceptance criteria
7. Verification SHALL confirm that each tested deployment satisfies the platform specific acceptance criteria for the target [Deployment Platform](#)
8. Verification SHALL confirm that changing the target [Deployment Platform](#) does not require modification of the platform independent deployment intent

Verification may include:

- Cross platform deployment tests
- Provider contract tests
- Provider implementation tests
- [Crucible Description](#) comparison
- [Infrastructure Baseline](#) comparison
- Platform specific parameter inspection
- Core dependency analysis
- Provider dependency analysis
- Deployment result comparison
- End-to-end [CI/CD Pipeline](#) tests

The verification record SHALL identify:

1. The tested [Crucible Description](#)
2. The tested [Infrastructure Baseline](#)
3. The tested [Deployment Platforms](#)
4. The common platform independent information
5. The platform specific parameters
6. The applicable provider contract
7. The provider implementations
8. The common acceptance criteria
9. The platform specific acceptance criteria
10. The observed deployment results
11. The generated [Evidence](#)

Outgoing Traceability

This requirement is realized by:

- [FR-DEP-001 through FR-DEP-007](#)
- [FR-MC-001 through FR-MC-005](#)
- [FR-AG-001 through FR-AG-005](#)
- [FR-DSO-001 through FR-DSO-006](#)
- [FR-BAS-001 through FR-BAS-004](#)
- [INT-001 through INT-007](#)
- [KVP-006 — Enable cloud portability](#)

The phrase **Enable cloud portability** is retained only as the title of the source requirement. The KVP-006 requirement statement should undergo the same SDA and CWE assessment because **enable** is weak.

This requirement also relates to:

- [5. Descriptions, Composition, and Baselines](#)
- [7. Infrastructure and Deployment](#)
- [8. Dependencies and Air Gap Operations](#)
- [10. Reproducibility, Provenance, and Traceability](#)

Referenced By

The wiki Backlinks function provides the current list of pages that reference `MO-003`.

Incoming traceability should be derived dynamically from backlinks rather than maintained as a duplicate manual list.

Backlinks identify incoming references but do not define the semantics of each relationship. Referencing pages should identify whether the relationship represents realization, refinement, verification, dependency, or another defined traceability relationship.

ConOps Relationship

The Crucible Concept of Operations describes Phase 1 as a command-line utility invoked through [CI/CD Pipeline](#) steps.

The Phase 1 workflow uses declarative inputs and currently orchestrates external deployment tools. The target architecture separates platform independent Crucible behavior from provider specific behavior.

The architecture uses a provider contract as the boundary between the core system and individual [Deployment Platforms](#). Each provider implementation performs the behavior required for its target platform without introducing provider specific dependencies into platform independent core components.

Delivery Phase

Phase 1 and subsequent phases

Implementation Status

Not Assessed

Implementation status requires verification across at least two supported [Deployment Platforms](#) using the same platform independent deployment intent.

Requirement Status

Draft

The source System Requirements Specification identifies Version 1.1 as a draft.

Notes for Editors

This requirement page should retain the stable requirement identifier `MO-003`.

Changes to the Statement SHALL preserve the approved intent of the source requirement.

Material changes should receive review and should update the related outbound traceability, verification criteria, acceptance criteria, and source records.

The Source Statement should preserve the original wording from the controlling System Requirements Specification.

Incoming traceability should use the wiki Backlinks function rather than a manually maintained list.

The shared Terms and Definitions corpus should include definitions for:

- Cloud Agnostic
- Cloud Portability
- Deployment Platform
- Platform Independence
- Platform Independent Information
- Platform Specific Information
- Platform Specific Parameter
- Provider Abstraction
- Provider Contract
- Provider Implementation
- Supported Deployment Platform

The proposed namespaces are:

- `dido:99\_annexes:annex-b-terms-and-definitions:c:cloud\_agnostic`
- `dido:99\_annexes:annex-b-terms-and-definitions:c:cloud\_portability`
- `dido:99\_annexes:annex-b-terms-and-definitions:d:deployment\_platform`
- `dido:99\_annexes:annex-b-terms-and-definitions:p:platform\_independence`
- `dido:99\_annexes:annex-b-terms-and-definitions:p:platform\_independent\_information`
- `dido:99\_annexes:annex-b-terms-and-definitions:p:platform\_specific\_information`
- `dido:99\_annexes:annex-b-terms-and-definitions:p:platform\_specific\_parameter`
- `dido:99\_annexes:annex-b-terms-and-definitions:p:provider\_abstraction`

- `dido:99\_annexes:annex-b-terms-and-definitions:p:provider\_contract`
- `dido:99\_annexes:annex-b-terms-and-definitions:p:provider\_implementation`
- `dido:99\_annexes:annex-b-terms-and-definitions:s:supported\_deployment\_platform`

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