

FR-MC-003 — Deployment Portability Across Cloud Providers

[Go to Crucible Multi-Cloud Management Requirements](#)

Statement

[Crucible](#) SHALL deploy the same [Platform Independent Information](#) to at least two cloud [Providers](#) by varying only the applicable [Platform Specific Information](#).

Source Statement

The system shall support deployment portability across cloud providers.

Source

Crucible System Requirements Specification, Version 1.1 Draft, Functional Requirements, FR-MC-003.

Assessment

The source statement identifies a portability objective but does not state an observable portability behavior.

The following Specification, Discipline, and Authoring findings apply:

- **The system** does not use the defined system name
- **shall** does not follow the established uppercase normative convention
- **Support** is a weak verb that does not identify the required behavior
- **Deployment portability** does not identify which deployment information remains unchanged
- **Across cloud providers** does not identify the minimum number of Providers needed to demonstrate portability
- The source statement does not distinguish [Platform Independent Information](#) from [Platform Specific Information](#)
- The source statement does not require identical Provider services, resource types, interfaces, or physical implementations
- The source statement does not prescribe particular cloud Providers

The normalized Statement:

- Replaces **The system** with [Crucible](#)
- Replaces **support** with the direct behavior **deploy**
- Uses the defined Platform Independent Information concept

- Uses the defined Platform Specific Information concept
- Identifies the information that remains unchanged
- Requires deployment through at least two cloud Providers
- Limits deployment-input variation to the applicable Platform Specific Information
- Preserves Provider-specific realization
- Retains one primary required behavior

The phrase **at least two** establishes the minimum observable condition required to demonstrate deployment across more than one cloud Provider.

The normalized Statement does not require identical Provider resources, service names, interfaces, prices, performance characteristics, or physical implementations.

Rationale

[Cloud Portability](#) requires Crucible to preserve applicable deployment intent while realizing that intent through different cloud Providers.

[Platform Independent Information](#) expresses deployment information without depending on the implementation details of a particular Provider.

[Platform Specific Information](#) supplies the Provider-specific values, mappings, identifiers, constraints, and other details required to realize that information through a particular Provider.

Platform Specific Information may include:

- Provider resource types
- Provider service identifiers
- Provider regions
- Provider account or project identifiers
- Provider network identifiers
- Provider storage classes
- Provider machine types
- Provider authentication parameters
- Provider-specific security parameters
- Provider-specific service configuration

Cloud Portability does not require:

- Identical Provider resource identifiers
- Identical Provider service names
- Identical Provider interfaces
- Identical physical infrastructure
- Identical costs
- Identical performance
- Identical operational constraints
- Availability of every Provider-specific capability through every Provider

Cloud Portability requires preservation of the applicable Platform Independent Information while Platform Specific Information varies for each Provider.

The applicable [Acceptance Criteria](#) determine whether each Provider-specific deployment constitutes an acceptable realization of the same Platform Independent Information.

Applies To

This requirement applies to:

- [Crucible](#)
- [Cloud Portability](#)
- [Platform Independent Information](#)
- [Platform Specific Information](#)
- [Providers](#)
- [Provider Plugins](#)
- [Provider Contracts](#)
- [Provider Abstractions](#)
- [Infrastructure Baselines](#)
- [Acceptance Criteria](#)
- Cloud deployment workflows

Verification

1. Verification SHALL confirm that one set of [Platform Independent Information](#) is selected for testing
2. Verification SHALL confirm that at least two cloud [Providers](#) are selected for testing
3. Verification SHALL confirm that the same Platform Independent Information is used for each tested Provider
4. Verification SHALL confirm that differences in deployment input are limited to identified [Platform Specific Information](#)
5. Verification SHALL confirm that [Crucible](#) deploys the selected Platform Independent Information through each tested Provider
6. Verification SHALL confirm that each resulting deployment satisfies the applicable common [Acceptance Criteria](#)

Verification may include:

- Cross-Provider deployment tests
- Platform Independent Information comparison
- Platform Specific Information comparison
- Provider Plugin tests
- Provider Contract conformance tests
- Infrastructure Baseline comparison
- Deployment-result comparison
- Acceptance testing

The verification record SHALL identify:

1. The tested Platform Independent Information
2. The tested cloud Providers

3. The applicable Platform Specific Information for each Provider
4. The applicable [Provider Plugin](#) for each Provider
5. The applicable [Provider Contract](#)
6. The common Acceptance Criteria
7. Any Provider-specific Acceptance Criteria
8. The observed deployment results
9. The generated [Evidence](#)

Outgoing Traceability

This requirement realizes:

- [MO-003](#)
- [KVP-006 — Enable Cloud Portability](#)

This requirement relates to:

- [FR-MC-001 — Cloud Provider Abstraction](#)
- [FR-MC-002 — Provider-Specific Extensions](#)
- [C.3.3 Deployment Orchestration](#)
- [7. Infrastructure and Deployment](#)

Referenced By

The wiki Backlinks function provides the current list of pages that reference FR-MC-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 separates [Platform Independent Information](#) from [Platform Specific Information](#).

FR-MC-003 establishes the observable cross-Provider deployment behavior required for [Cloud Portability](#).

The same Platform Independent Information remains applicable to each deployment, while the Platform Specific Information varies according to the selected [Provider](#).

[Provider Plugins](#) and [Provider Contracts](#) may realize the Provider-specific behavior governed by FR-MC-002.

Delivery Phase

Phase 1

Implementation Status

Not Assessed

Implementation status requires verification that [Crucible](#) deploys the same [Platform Independent Information](#) to at least two cloud [Providers](#) by varying only the applicable [Platform Specific Information](#).

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 FR-MC-003.

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

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

The Statement should remain limited to deploying the same Platform Independent Information to at least two cloud Providers by varying only the applicable Platform Specific Information.

Cloud Portability should not be interpreted as requiring identical Provider-specific realizations.

Provider Plugin and Provider Contract obligations should remain governed by FR-MC-002 unless the controlling source adds those obligations directly to FR-MC-003.

Verification criteria should test only the behavior stated in the normalized Statement and should not introduce additional normative obligations.

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

To reference this requirement Statement from another wiki page, insert:

```
{{section>dido:02-crusible:99-annexes:annex-c-requirements:03-functional-requirements:03-04-multi-cloud-management:fr-
```

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