

FR-MC-001 — Cloud Provider Abstraction

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

Statement

Crucible SHALL separate **Cloud Provider** independent deployment information from cloud-provider-specific parameters.

Source Statement

The system shall support **Cloud Provider** abstraction.

Source

Crucible System Requirements Specification, Version 1.1 Draft, Functional Requirements, FR-MC-001.

Assessment

The source statement expresses the approved architectural intent but does not provide a fully testable 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
- **Cloud provider abstraction** names an architectural approach without identifying the required separation
- The source statement does not identify which information remains provider independent
- The source statement does not identify which information may vary by provider
- The source statement does not prescribe a provider, cloud service model, programming language, interface, or implementation technology

The normalized Statement:

- Replaces **The system** with **Crucible**
- Replaces **support** with the direct behavior **separate**
- Identifies cloud-provider-independent deployment information
- Identifies cloud-provider-specific parameters
- Preserves implementation independence
- Retains one primary required behavior

The normalized Statement does not require every deployment capability to remain identical across

providers. Provider-specific extensions may address capabilities that do not have a common provider-independent representation.

Rationale

Cloud providers expose different:

- Resource types
- Service names
- Configuration parameters
- Identity models
- Network models
- Storage models
- Regions and location identifiers
- Management interfaces
- Operational constraints

Cloud Provider Abstraction separates common deployment intent from the details required by a particular provider.

Cloud-provider-independent deployment information may identify:

- Required computing capacity
- Required storage capability
- Required network relationships
- Required security characteristics
- Required identity relationships
- Required [Platform Services](#)
- Required [Acceptance Criteria](#)

Cloud-provider-specific parameters may identify:

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

This separation contributes to:

- [Cloud Portability](#)
- [Platform Independence](#)
- Provider substitution
- Reusable deployment intent
- Reduced provider coupling
- [Reproducibility](#)
- [Traceability](#)

Applies To

This requirement applies to:

- [Crucible](#)
- Cloud-provider-independent deployment information
- Cloud-provider-specific parameters
- [Crucible Descriptions](#)
- [Infrastructure Configurations](#)
- [Infrastructure Baselines](#)
- [Provider Implementations](#)
- Cloud deployment workflows
- Cloud providers

Verification

1. Verification SHALL confirm that a tested deployment identifies cloud-provider-independent deployment information
2. Verification SHALL confirm that the tested deployment identifies cloud-provider-specific parameters separately from the cloud-provider-independent deployment information
3. Verification SHALL confirm that changing a cloud-provider-specific parameter does not require modification of unrelated cloud-provider-independent deployment information
4. Verification SHALL confirm that cloud-provider-independent components do not contain unidentified provider-specific deployment behavior

Verification may include:

- Deployment-description inspection
- Configuration-boundary inspection
- Provider-parameter inspection
- Provider-substitution testing
- Static dependency analysis
- Provider implementation testing
- Cross-provider deployment testing

The verification record SHALL identify:

1. The tested deployment information
2. The cloud-provider-independent information
3. The cloud-provider-specific parameters
4. The tested cloud providers
5. The observed separation
6. The generated [Evidence](#)

Outgoing Traceability

This requirement realizes:

- [MO-003](#)
- [MO-006](#)

This requirement relates to:

- [C.3.1 Configuration Management](#)
- [C.3.3 Deployment Orchestration](#)
- [FR-MC-002 — Provider-Specific Extensions](#)
- [FR-MC-003 — Deployment Portability Across Cloud Providers](#)
- [7. Infrastructure and Deployment](#)

Referenced By

The wiki Backlinks function provides the current list of pages that reference FR-MC-001.

Incoming [Traceability](#) should be derived dynamically from backlinks rather than maintained as a duplicate manual list.

ConOps Relationship

The Crucible Concept of Operations describes common deployment intent combined with platform-specific information before deployment.

FR-MC-001 establishes the separation between cloud-provider-independent deployment information and cloud-provider-specific parameters.

Delivery Phase

Phase 1

Implementation Status

Not Assessed

Requirement Status

Draft

Notes for Editors

This requirement page should retain the stable requirement identifier FR-MC-001.

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

The Statement should remain limited to separation of cloud-provider-independent deployment information from cloud-provider-specific parameters.

Requirements for provider extensions, cross-provider deployment, Hybrid-Cloud Deployment, and Edge Deployment should remain in their applicable requirement pages.

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-mc-001#Statement&noheader&nofooter&noeditbtn}}
```

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