

FR-DEP-007 — Deployment Validation

[Go to Crucible Deployment Orchestration Requirements](#)

Statement

Crucible SHALL perform **Deployment Validation** by evaluating an identified deployment result against the applicable **Acceptance Criteria**.

Source Statement

The system shall support **Deployment Validation**.

Source

Crucible System Requirements Specification, Version 1.1 Draft, Functional Requirements, FR-DEP-007.

Assessment

The source statement expresses the approved intent but does not provide a fully testable formulation.

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 Validation** names an activity but does not identify the evaluated subject
- The source statement does not identify the criteria used for validation
- The source statement does not identify an observable validation result
- The source statement does not prescribe a validation tool, test framework, provider, validation method, or implementation technology

The normalized Statement:

- Replaces **The system** with **Crucible**
- Replaces **support** with the direct behavior **perform**
- Uses the defined Deployment Validation concept
- Identifies an identified deployment result as the evaluated subject
- Identifies applicable Acceptance Criteria as the evaluation basis
- Retains one primary required behavior
- Preserves implementation independence

The normalized Statement does not define the Acceptance Criteria. The applicable deployment specification, **Baseline**, policy, or lower-level requirement defines those criteria.

Rationale

A completed deployment does not by itself establish that the resulting subject satisfies the conditions required for its intended use.

[Deployment Validation](#) evaluates the deployment result against identified [Acceptance Criteria](#).

The evaluated deployment result may include:

- Deployed [Infrastructure Resources](#)
- A deployed [Virtual Machine](#)
- A deployed [Kubernetes Cluster](#)
- A deployed [Containerized Workload](#)
- A deployed Platform Service
- A resulting [Infrastructure Environment](#)
- Relationships among deployed subjects

Acceptance Criteria may evaluate:

- Resource existence
- Required configuration
- Required relationships
- Required operational state
- Required network behavior
- Required identity and access behavior
- Required security controls
- Required service availability
- Required health conditions
- Required compliance results

FR-DEP-007 does not independently establish any particular Acceptance Criterion.

Deployment Validation differs from deployment execution:

- Deployment execution creates or changes a deployment subject
- Deployment Validation evaluates the resulting state against Acceptance Criteria

Deployment Validation differs from compliance assessment:

- Deployment Validation evaluates a deployment result against deployment Acceptance Criteria
- Compliance assessment evaluates a subject against identified compliance criteria

Compliance results may form part of the applicable Deployment Validation criteria.

Deployment Validation contributes to:

- Detection of incomplete deployments
- Detection of incorrect deployment state
- Controlled acceptance of deployment results
- Rollback or recovery decisions
- [Evidence](#)

- [Auditability](#)
- [Traceability](#)

Applies To

This requirement applies to:

- [Crucible](#)
- [Deployment Validation](#)
- Deployment results
- [Acceptance Criteria](#)
- [Infrastructure Resources](#)
- [Virtual Machines](#)
- [Kubernetes Clusters](#)
- [Containerized Workloads](#)
- Platform Services
- [Infrastructure Environments](#)
- Deployment workflows
- Validation operations
- Validation results
- [CI/CD Pipelines](#)

Verification

1. Verification SHALL confirm that the tested deployment result is identified
2. Verification SHALL confirm that the applicable [Acceptance Criteria](#) are identified
3. Verification SHALL confirm that [Crucible](#) evaluates the identified deployment result against the applicable Acceptance Criteria
4. Verification SHALL confirm that Crucible determines whether the deployment result satisfies each applicable Acceptance Criterion
5. Verification SHALL confirm that Crucible records the Deployment Validation result

Verification may include:

- Infrastructure Resource validation testing
- Virtual Machine validation testing
- Kubernetes Cluster validation testing
- Containerized Workload validation testing
- Platform Service validation testing
- Successful-validation testing
- Failed-validation testing
- Acceptance Criteria inspection
- Deployment-result inspection
- Validation-output inspection
- Validation-log inspection
- Automated [CI/CD Pipeline](#) testing

The verification record SHALL identify:

1. The evaluated deployment result
2. The applicable Acceptance Criteria
3. The observed result for each Acceptance Criterion
4. The Deployment Validation operation
5. The Deployment Validation result
6. The generated [Evidence](#)

Outgoing Traceability

This requirement realizes:

- [MO-001](#)
- [MO-002](#)
- [MO-005](#)
- [MO-006](#)

This requirement relates to:

- [FR-DEP-001 — Deploy Infrastructure Resources](#)
- [FR-DEP-002 — Deploy Virtual Machines](#)
- [FR-DEP-003 — Deploy Kubernetes Clusters](#)
- [FR-DEP-004 — Deploy Containerized Workloads](#)
- [FR-DEP-005 — Deploy Platform Services](#)
- [FR-DEP-006 — Deployment Rollback](#)
- [C.3.6 Compliance Management](#)
- [7. Infrastructure and Deployment](#)
- [9. Compliance and Security](#)
- [10. Reproducibility, Provenance, and Traceability](#)

Referenced By

The wiki Backlinks function provides the current list of pages that reference [FR-DEP-007](#).

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 predeployment and postdeployment activities within an automated Phase 1 [CI/CD Pipeline](#).

FR-DEP-007 establishes the behavior required to evaluate an identified deployment result against the

applicable Acceptance Criteria.

Requirements governing deployment execution, compliance assessment, rollback, recovery, logging, and Evidence retention define separate behavior.

Delivery Phase

Phase 1

Implementation Status

Not Assessed

Implementation status requires verification that [Crucible](#) performs Deployment Validation by evaluating an identified deployment result against the applicable Acceptance Criteria.

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-DEP-007.

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 evaluating an identified deployment result against the applicable Acceptance Criteria.

The applicable deployment specification, Baseline, policy, or lower-level requirement should define the Acceptance Criteria.

Requirements for deployment execution, compliance assessment, rollback, recovery, logging, and Evidence retention should remain in their applicable requirement pages.

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:03-03-deployment-orchestration:fr-dep-007#Statement&noheader&nofooter&noeditbtn}}
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