

FR-DEP-001 — Deploy Infrastructure Resources

[Go to Crucible Deployment Orchestration Requirements](#)

Statement

[Crucible](#) SHALL deploy identified infrastructure resources to a target [Infrastructure Environment](#).

Source Statement

The system shall deploy infrastructure resources.

Source

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

Assessment

The source statement expresses a direct functional behavior but requires terminology and normative-language normalization.

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
- **Infrastructure resources** identifies the deployment subject but does not identify the target environment
- The source statement does not prescribe a resource type, provider, deployment tool, interface, or implementation method
- The source statement does not independently require deployment validation, rollback, compliance assessment, or lifecycle recording

The normalized Statement:

- Replaces **The system** with [Crucible](#)
- Retains the direct and testable verb **deploy**
- Identifies the infrastructure resources as the deployment subjects
- Identifies a target Infrastructure Environment
- Preserves implementation independence
- Retains one primary required behavior

The normalized Statement does not prescribe which infrastructure resources apply to a particular

deployment. The applicable [Infrastructure Configuration](#) identifies those resources.

Rationale

Infrastructure resources establish the computing, storage, networking, security, identity, and related capabilities required by an [Infrastructure Environment](#).

Infrastructure resources may include:

- Compute resources
- Storage resources
- Network resources
- Identity resources
- Security resources
- Load-balancing resources
- Monitoring resources
- Logging resources
- Name-resolution resources
- Key-management resources
- Provider-managed services

The deployment operation realizes the applicable [Infrastructure Configuration](#) within the target Infrastructure Environment.

Infrastructure-resource deployment contributes to:

- Repeatable environment creation
- Consistent infrastructure state
- Automated environment establishment
- [Reproducibility](#)
- [Provenance](#)
- [Traceability](#)

Applies To

This requirement applies to:

- [Crucible](#)
- Infrastructure resources
- [Infrastructure Environments](#)
- [Infrastructure Configurations](#)
- [Infrastructure Deployment](#)
- Compute resources
- Storage resources
- Network resources
- Identity resources
- Security resources
- Monitoring resources

- Logging resources
- Deployment tools
- [Provider Implementations](#)
- [CI/CD Pipelines](#)

Verification

1. Verification SHALL confirm that [Crucible](#) executes a deployment operation for identified infrastructure resources
2. Verification SHALL confirm that the deployment operation targets an identified [Infrastructure Environment](#)
3. Verification SHALL confirm that the identified infrastructure resources exist in the target Infrastructure Environment after successful deployment

Verification may include:

- Infrastructure-resource deployment testing
- Target-environment inspection
- Infrastructure-state inspection
- Provider-interface inspection
- Deployment-output inspection
- Deployment-log inspection
- Automated [CI/CD Pipeline](#) testing

The verification record SHALL identify:

1. The deployed infrastructure resources
2. The target Infrastructure Environment
3. The deployment operation
4. The deployment result
5. The observed infrastructure state
6. The generated [Evidence](#)

Outgoing Traceability

This requirement realizes:

- [MO-001](#)
- [MO-002](#)
- [MO-003](#)
- [MO-006](#)

This requirement relates to:

- [FR-CFG-001](#)
- [FR-CFG-002](#)
- [FR-DEP-006 — Deployment Rollback](#)
- [FR-DEP-007 — Deployment Validation](#)
- [7. Infrastructure and Deployment](#)

- [10. Reproducibility, Provenance, and Traceability](#)

Referenced By

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

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 a Phase 1 workflow that composes controlled configuration inputs and performs [Infrastructure Deployment](#) through an automated [CI/CD Pipeline](#).

FR-DEP-001 establishes the required behavior for deploying infrastructure resources to a target Infrastructure Environment.

Requirements governing virtual machines, Kubernetes clusters, containerized workloads, platform services, rollback, and validation define separate deployment behavior.

Delivery Phase

Phase 1

Implementation Status

Not Assessed

Implementation status requires verification that Crucible deploys identified infrastructure resources to a target Infrastructure Environment.

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-001.

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 deployment of identified infrastructure resources.

Requirements for deployment rollback, validation, compliance assessment, lifecycle recording, and resource retirement 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-001#Statement&noheader&nofooter&noeditbtn}}
```

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