

FR-DEP-002 — Deploy Virtual Machines

[Go to Crucible Deployment Orchestration Requirements](#)

Statement

[Crucible](#) SHALL deploy a [Virtual Machine](#) to a target [Infrastructure Environment](#).

Source Statement

The system shall deploy [virtual machines](#).

Source

Crucible System Requirements Specification, Version 1.1 Draft, Functional Requirements, FR-DEP-002.

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
- **Virtual machines** should use the defined [Virtual Machine](#) concept
- The source statement does not identify the target Infrastructure Environment
- The source statement does not prescribe a virtualization platform, [Machine Image](#) format, provider, or deployment method
- The source statement does not independently require validation, rollback, compliance assessment, or runtime activation

The normalized Statement:

- Replaces **The system** with [Crucible](#)
- Retains the direct and testable verb **deploy**
- Uses the defined Virtual Machine concept
- Identifies the target Infrastructure Environment
- Retains one primary required behavior

Rationale

A [Virtual Machine](#) provides an isolated computing subject through virtualized processor, memory, storage, network, and related resources.

Virtual Machine deployment may use:

- A selected [Machine Image](#)
- Virtual processor configuration
- Virtual memory configuration
- Virtual storage configuration
- Virtual network configuration
- Identity and access configuration
- Security configuration
- Startup parameters
- Provider-specific parameters

The applicable [Infrastructure Configuration](#) determines which inputs apply.

Virtual Machine deployment contributes to:

- Repeatable computing-resource creation
- Consistent Virtual Machine configuration
- Automated workload hosting
- [Reproducibility](#)
- [Provenance](#)
- [Traceability](#)

Applies To

This requirement applies to:

- [Crucible](#)
- [Virtual Machines](#)
- [Machine Images](#)
- Virtualized computing resources
- Virtualization platforms
- [Infrastructure Environments](#)
- [Infrastructure Configurations](#)
- Virtual Machine deployment workflows
- [Provider Implementations](#)
- [CI/CD Pipelines](#)

Verification

1. Verification SHALL confirm that [Crucible](#) executes a deployment operation for a [Virtual Machine](#)
2. Verification SHALL confirm that the deployment operation targets an identified [Infrastructure](#)

Environment

3. Verification SHALL confirm that the Virtual Machine exists in the target Infrastructure Environment after successful deployment

Verification may include:

- Virtual Machine deployment testing
- Virtualization-platform inspection
- Target-environment inspection
- Virtual Machine state inspection
- Deployment-output inspection
- Deployment-log inspection
- Automated CI/CD Pipeline testing

The verification record SHALL identify:

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

Outgoing Traceability

This requirement realizes:

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

This requirement relates to:

- [FR-IMG-001 — Build Virtual Machine Images](#)
- [FR-IMG-003 — Immutable Infrastructure Workflows](#)
- [FR-DEP-001 — Deploy Infrastructure Resources](#)
- [FR-DEP-006 — Deployment Rollback](#)
- [FR-DEP-007 — Deployment Validation](#)
- [6. Machine Images and Image Layers](#)
- [7. Infrastructure and Deployment](#)

Referenced By

The wiki Backlinks function provides the current list of pages that reference FR-DEP-002.

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 builds controlled Machine Images and deploys infrastructure through an automated CI/CD Pipeline.

FR-DEP-002 establishes the required behavior for deploying a Virtual Machine to a target Infrastructure Environment.

Requirements governing Machine Image building, Image Promotion, rollback, and validation define separate behavior.

Delivery Phase

Phase 1

Implementation Status

Not Assessed

Implementation status requires verification that Crucible deploys a Virtual Machine 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-002.

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 a Virtual Machine.

Requirements for Machine Image building, Image Promotion, runtime activation, rollback, validation, and 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-002#Statement&noheader&nofooter&noeditbtn}}
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Last update: 2026/07/20 07:08

