

# FR-DEP-004 — Deploy Containerized Workloads

[Go to Crucible Deployment Orchestration Requirements](#)

## Statement

[Crucible](#) SHALL deploy a [Containerized Workloads](#).

## Source

Crucible System Requirements Specification, Version 1.1 Draft, Functional Requirements, FR-DEP-004.

## Assessment

The source statement expresses a direct functional behavior but requires normative-language normalization and identification of the deployment target.

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
- **Containerized workloads** identify the deployment subject but do not identify the target platform
- The source statement does not prescribe a container runtime, orchestration platform, [Container Image](#) format, provider, or deployment method
- The source statement does not independently require workload validation, availability, scaling, rollback, or compliance assessment

The normalized Statement:

- Replaces **The system** with [Crucible](#)
- Retains the direct and testable verb **deploy**
- Identifies a containerized workload as the deployment subject
- Identifies a target container platform
- Preserves implementation independence
- Retains one primary required behavior

**Containerized Workload** and **Container Platform** should receive glossary definitions because they identify distinct architectural subjects used by this and related requirements.

## Rationale

A containerized workload comprises one or more container instances and the configuration required to perform an application, service, processing, or platform function.

Containerized-workload deployment may use:

- One or more [Container Images](#)
- Workload configuration
- Runtime parameters
- Identity and access configuration
- Network configuration
- Storage configuration
- Resource requirements
- Security controls
- Service-discovery configuration
- Scaling configuration

The applicable deployment specification determines which inputs apply.

Containerized-workload deployment contributes to:

- Repeatable workload creation
- Consistent runtime configuration
- Automated application and service deployment
- Workload portability
- [Reproducibility](#)
- [Provenance](#)
- [Traceability](#)

## Applies To

This requirement applies to:

- [Crucible](#)
- Containerized workloads
- [Container Images](#)
- Container instances
- Container platforms
- Container runtimes
- Kubernetes Clusters
- Workload configuration
- Workload deployment workflows
- [Infrastructure Environments](#)
- [Provider Implementations](#)
- [CI/CD Pipelines](#)

## Verification

1. Verification SHALL confirm that [Crucible](#) executes a deployment operation for a containerized workload
2. Verification SHALL confirm that the deployment operation targets an identified container platform
3. Verification SHALL confirm that the containerized workload exists on the target container platform after successful deployment

Verification may include:

- Containerized-workload deployment testing
- Container-platform inspection
- Container-runtime inspection
- Workload-state inspection
- Deployment-output inspection
- Deployment-log inspection
- Automated CI/CD Pipeline testing

The verification record SHALL identify:

1. The deployed containerized workload
2. The target container platform
3. The deployment operation
4. The deployment result
5. The observed workload state
6. The generated [Evidence](#)

## Outgoing Traceability

This requirement realizes:

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

This requirement relates to:

- [FR-IMG-002 — Build Container Images](#)
- [FR-IMG-003 — Immutable Infrastructure Workflows](#)
- [FR-IMG-006 — Image Promotion Workflows](#)
- [FR-DEP-003 — Deploy Kubernetes Clusters](#)
- [FR-DEP-006 — Deployment Rollback](#)
- [FR-DEP-007 — Deployment Validation](#)
- [7. Infrastructure and Deployment](#)

## Referenced By

The wiki Backlinks function provides the current list of pages that reference FR-DEP-004.

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 Container Images and deploys platform and application components through an automated CI/CD Pipeline.

FR-DEP-004 establishes the required behavior for deploying a containerized workload to a target container platform.

Requirements governing Container Image building, Kubernetes Cluster deployment, platform services, rollback, and validation define separate behavior.

## Delivery Phase

Phase 1

## Implementation Status

Not Assessed

Implementation status requires verification that Crucible deploys a containerized workload to a target container platform.

## 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-004.

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 containerized workload.

Requirements for Container Image building, Image Promotion, scaling, availability, rollback, validation, and workload 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-004#Statement&noheader&nofooter&noeditbtn}}
```

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