

FR-CFG-005 — Configuration Version History

[Go to Crucible Configuration Management Requirements](#)

Statement

Crucible SHALL preserve each revision of an **Infrastructure Configuration** and the relationship between successive revisions.

Source Statement

The system SHALL maintain complete configuration version history.

Source

Crucible System Requirements Specification, Version 1.1 Draft, Functional Requirements, Configuration Management, FR-CFG-005.

Assessment

The source statement expresses the approved functional intent but does not provide all information required for deterministic verification.

The following Specification, Discipline and Authoring findings apply:

- **The system** does not use the defined system name
- **Maintain** does not identify the specific behavior **Crucible** performs
- **Configuration** does not identify the configuration artifact to which the requirement applies
- **Complete** does not identify the minimum content required for completeness
- **Version history** does not identify whether the history includes revision content, revision identifiers, revision relationships, or other revision metadata
- The source statement does not identify the observable result used to verify preservation of the version history

The normalized Statement:

- Replaces **The system** with the defined system name
- Replaces **maintain** with the direct behavior **preserve**
- Identifies the **Infrastructure Configuration** as the controlled artifact
- Requires preservation of every Infrastructure Configuration revision
- Requires preservation of the relationship between successive revisions

The normalized Statement interprets **complete configuration version history** as the preserved set of Infrastructure Configuration revisions and the succession relationships that order those revisions.

The normalized Statement does not introduce approval, authorship, timestamp, change-rationale, retention-period, rollback, deployment, provenance, or traceability obligations. Separate requirements govern those behaviors when required.

Rationale

Configuration version history records how an [Infrastructure Configuration](#) changes over time.

Each revision represents a distinguishable state of the Infrastructure Configuration.

Preserving the relationship between successive revisions establishes the order in which those states occurred.

Without preserved revisions and succession relationships, an organization cannot reliably determine:

- Which configuration states existed
- How one configuration state followed another
- Whether a later revision replaced an earlier revision
- Which revision represents a particular historical configuration state

Configuration version history provides a foundation for separately governed activities such as:

- Revision comparison
- Prior-state reconstruction
- Change review
- Rollback
- Configuration drift analysis
- Audit
- [Reproducibility](#)

This requirement complements FR-CFG-002:

- FR-CFG-002 requires each Infrastructure Configuration to exist as a machine-readable Artifact managed through [Version Control](#)
- FR-CFG-005 requires preservation of every configuration revision and the relationships among successive revisions

Applies To

This requirement applies to:

- [Crucible](#)
- [Infrastructure Configurations](#)
- Infrastructure Configuration revisions
- Revision content
- Successive revision relationships
- Configuration version history
- [Version Control](#)
- [Version Control Systems](#)

Verification

1. Verification SHALL confirm that each tested [Infrastructure Configuration](#) revision remains preserved after a succeeding revision is created
2. Verification SHALL confirm that the content of each tested revision remains distinguishable from the content of every other tested revision
3. Verification SHALL confirm that each tested revision identifies the immediately preceding revision when a preceding revision exists
4. Verification SHALL confirm that the preserved succession relationships place the tested revisions in their correct revision order
5. Verification SHALL confirm that creation of a succeeding revision does not overwrite the content of a preceding revision

Verification may include:

- Configuration revision inspection
- Revision content comparison
- Successive revision tests
- Revision relationship inspection
- Revision-order reconstruction
- Revision overwrite tests
- [Version Control System](#) history inspection

The verification record SHALL identify:

1. The tested Infrastructure Configuration
2. The tested revisions
3. The content associated with each tested revision
4. The preceding revision associated with each tested revision, when applicable
5. The reconstructed revision order
6. The revision overwrite test result
7. The observed results
8. The generated [Evidence](#)

Outgoing Traceability

This requirement refines:

- [MO-001 — Repeatable, Compliant, and Secure Infrastructure Environments](#)
- [MO-005 — Reusable and Version-Controlled Infrastructure](#)
- [MO-006 — Infrastructure Lifecycle Management](#)

This requirement operates within the conditions established by:

- [OR-001 — Operational Roles](#)
- [OR-002 — Deployment Environments](#)
- [OR-003 — Classified and Unclassified Environments](#)
- [OR-004 — Concurrent Environment Management](#)
- [OR-005 — Distributed Environment Management](#)

This requirement also relates to:

- [5. Descriptions, Composition, and Baselines](#)
- [10. Reproducibility, Provenance, and Traceability](#)

Referenced By

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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 the use of version-controlled configuration inputs within a [CI/CD Pipeline](#) workspace.

Preserved configuration revisions allow the workflow to:

- Identify a particular Infrastructure Configuration state
- Distinguish that state from earlier and later revisions
- Determine the preceding revision
- Reconstruct the order of configuration revisions
- Use an identified historical configuration state in a separately governed activity

The preserved revision history provides the sequence of Infrastructure Configuration states used to understand how the configuration changed over time.

Delivery Phase

Phase 1 and subsequent phases

Implementation Status

Not Assessed

Implementation status requires verification that [Crucible](#) preserves each Infrastructure Configuration revision and the relationship between successive revisions.

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-CFG-005.

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

Material changes should receive review and should update the related outbound traceability, verification criteria, and source records.

The Source Statement should preserve the original wording from the controlling System Requirements Specification.

Verification criteria should test only the preservation of Infrastructure Configuration revisions and their successive relationships.

Approval status, authorship, timestamps, change rationale, retention periods, deletion controls, comparison, rollback, deployment association, provenance, and traceability should not be introduced as normative behavior on this page unless the Statement changes through an approved requirements process.

Incoming traceability should use the wiki Backlinks function rather than a manually maintained list.

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```
{{section>dido:02-crusible:99-annexes:annex-c-requirements:03-functional-requirements:03-01-configuration-management:fr-cfg-005#Statement&noheader&nofooter&noeditbtn}}
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