

7.5 Populate Offline Repositories

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After successful import of the [Transfer Bundle](#), [Crucible](#) uses the imported dependency content to populate repositories available within the destination [Disconnected Environment](#) or [Air-Gapped Environment](#).

An [Offline Repository](#) provides locally available content that would otherwise require access to an external connected source.

Repository population makes imported Dependencies available to the tools and lifecycle activities that require them. It does not independently authorize use of every imported Dependency.

Identify the Destination Repositories

Crucible identifies the Offline Repositories required by the planned destination lifecycle activity.

The destination environment can contain repositories for:

- Software packages
- Operating-system packages
- Language-specific packages
- Machine Images
- Container Images
- Build artifacts
- Compliance content
- Provider tools and plugins
- Other preserved Dependencies

The applicable dependency type and destination activity determine which repository receives the imported content.

Select Imported Content

Crucible selects the imported Dependencies intended for each Offline Repository.

The selected content can include:

- Direct Dependencies
- Transitive Dependencies
- Package metadata
- Repository metadata
- Dependency identifiers
- Version or revision information
- Integrity information
- Relationships among Dependencies

Crucible preserves the identity of each imported item while preparing it for repository population.

Populate the Offline Repositories

Crucible places the selected imported content into the applicable Offline Repository.

Repository population can include:

1. Identify the destination repository
2. Select the applicable imported Dependencies
3. Convert or arrange the content into the repository structure required by the destination tooling
4. Add required repository metadata
5. Preserve Dependency identifiers and versions
6. Preserve available integrity information
7. Record the population result

The repository representation can differ from the original connected source when the destination tooling requires a different local organization.

A change in repository organization does not change the identity or revision of the preserved Dependency.

Preserve Dependency Relationships

Crucible preserves the relationships needed to use the populated repository correctly.

These relationships can identify:

- A package and its required Dependencies
- A direct Dependency and its transitive Dependencies
- An Image and its required build inputs
- Compliance content and the assessment activity that uses it
- A repository item and the Transfer Bundle from which it originated
- A repository item and its original connected source

Preserving these relationships supports subsequent construction, assessment, deployment, validation, maintenance, and recovery activities within the destination environment.

Support Multiple Repository Types

Crucible can populate more than one type of Offline Repository when the imported dependency set contains content used by different tools or lifecycle activities.

Repository types can differ in their:

- Content organization

- Metadata requirements
- Index formats
- Naming conventions
- Version-resolution behavior
- Integrity mechanisms
- Client interfaces

Crucible does not require every Dependency to use one repository format.

The applicable repository implementation determines how the preserved Dependency content becomes available to destination-side tools.

Verify Repository Population

Crucible determines whether the selected imported content became available in the applicable Offline Repository.

Verification can include:

- Confirmation that the expected Dependency is present
- Confirmation of the expected version or revision
- Comparison with recorded integrity information
- Confirmation that required repository metadata exists
- Confirmation that direct and transitive Dependencies remain resolvable
- Confirmation that destination-side tools can locate the repository content

A successful repository-population result establishes that the selected content is available through the Offline Repository. It does not independently establish that the content is compliant, approved, secure, or suitable for every use.

Handle Population Exceptions

Crucible records conditions that prevent successful repository population.

Exceptions can include:

- Missing imported content
- Missing repository metadata
- An unsupported Dependency type
- An unsupported repository format
- An integrity mismatch
- A version conflict
- An unresolved transitive Dependency
- Insufficient repository storage
- A destination access restriction
- An unreadable or incomplete imported item

Crucible does not silently substitute another Dependency version when the selected version cannot

be populated.

The applicable operator or workflow determines whether an exception requires correction, replacement of the Transfer Bundle, additional import activity, or another authorized response.

Offline-Repository Result

The repository-population result identifies:

- The destination environment
- Each Offline Repository populated
- Each imported Dependency selected
- Each Dependency successfully populated
- The version or revision of each Dependency
- The repository location
- The integrity-verification result, when performed
- Any missing or unresolved Dependency
- Any population exception
- The overall population status

The populated Offline Repositories provide controlled inputs to [7.6 Rebuild and Deploy](#).

Requirements Addressed

Requirement	Statement
FR-DEPC-004 — Populate Offline Repositories	Crucible SHALL populate Offline Repositories in a Disconnected Environment from a Transfer Bundle .

The linked leaf requirement page remains the canonical source.

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