

NOD-002d — Allocate Node Resources

[Go to NOD-002 — Provision a Node](#)

Statement

The [DIDO-TE](#) SHALL allocate the [Test Resources](#) required to provision a [Node](#).

Derived From

- [NOD-002 — Provision a Node](#)
- [NOD-001e — Define Node Resource Requirements](#)
- [NOD-002a — Select the Node Definition](#)
- [NOD-002b — Select the Node Implementation](#)
- [\[DTE5\] DIDO-TE Requirements Register](#), source requirement identifier and obligation to be assigned
- [\[DTE6\] Structured Information Processing Reference Architecture \(SIP-RA\)](#)
- [\[DTE7\] Federated Data Interpretation Systems Reference Architecture \(FDIS-RA\)](#)

Rationale

A Node requires computing, memory, storage, network, device, timing, software, operating-system, middleware, and environmental resources. Resource allocation assigns identified Test Resources to satisfy these requirements within the Test Environment.

Controlled allocation establishes the capacity, performance, availability, isolation, location, and ownership conditions under which the DIDO-TE provisions the Node. It also establishes the information needed to reproduce those conditions and interpret resource-related behaviour.

Missing, insufficient, incompatible, contested, or unrecorded resource allocations prevent reliable provisioning and may cause behaviour unrelated to the Node Implementation.

Applies To

- [DIDO-TE](#)
- [Node](#)
- Node Definition
- Node Implementation
- [Test Resource](#)
- [Provisioning](#)
- [Test Environment](#)
- [Evidence](#)

Verification

Verification confirms that:

- Each Node resource requirement has a unique identity.
- Each allocated Test Resource has a unique identity.
- Each mandatory resource requirement maps to one or more allocated Test Resources.
- Each allocated Test Resource has an identified type, quantity, capacity, performance, quality, location, and availability.
- Each allocation satisfies the minimum resource requirements defined for provisioning.
- Each allocation remains within the applicable maximum limits.
- The allocation identifies each resource as dedicated, exclusive, shared, reserved, limited, persistent, or temporary when the distinction affects Node behaviour.
- The allocation satisfies applicable quotas, reservations, priorities, affinities, isolation constraints, and placement rules.
- The allocation satisfies applicable security, integrity, access-control, jurisdictional, residency, and environmental constraints.
- Resources required during provisioning remain distinguishable from resources required during configuration, execution, observation, shutdown, recovery, and restoration.
- The DIDO-TE verifies the availability and suitability of each mandatory Test Resource before provisioning uses it.
- The DIDO-TE verifies that shared resources have sufficient available capacity.
- The DIDO-TE detects conflicting, duplicate, excessive, or unauthorised resource allocations.
- The DIDO-TE detects a missing, unavailable, insufficient, incompatible, incorrectly located, or incorrectly allocated mandatory resource.
- The DIDO-TE prevents provisioning from proceeding when an unsatisfied resource requirement affects the validity of the provisioned Node.
- The allocation identifies the permitted duration and applicable release conditions for each Test Resource.
- The allocation identifies resources requiring cleanup, restoration, deallocation, or return after use.
- The DIDO-TE records the actual Test Resources allocated to the Node.
- The DIDO-TE records the identities, characteristics, quantities, capacities, constraints, allocation times, release conditions, findings, and exceptions associated with each allocation.
- The DIDO-TE records any approved difference between the required and allocated resources.
- Each approved difference identifies its authority, rationale, scope, duration, and expected effect.
- The DIDO-TE maintains [Traceability](#) among each resource requirement, allocated Test Resource, Node Definition, Node Implementation, Test Environment, provisioning activity, provisioned Node instance, and resulting Evidence.
- A missing, insufficient, incompatible, unauthorised, incorrectly allocated, or untraceable mandatory Test Resource constitutes nonconformance with this requirement.

Verification includes:

- Inspection of the Node resource requirements
- Inspection of allocated Test Resource identities, types, capacities, locations, availability, and constraints
- Comparison of required resources with allocated Test Resources
- Confirmation that minimum and maximum allocation limits remain satisfied

- Confirmation of applicable reservations, quotas, affinities, isolation, and placement constraints
- Verification of Test Resource availability before provisioning
- Verification of sufficient capacity for shared resources
- A negative assessment involving a missing or unavailable mandatory resource
- A negative assessment involving an insufficient or incompatible allocation
- A negative assessment involving a conflicting or unauthorised allocation
- Confirmation that an unsatisfied mandatory allocation prevents invalid provisioning
- Inspection of approved allocation differences
- Inspection of allocation, release, restoration, Evidence, and Traceability records

Referenced By

- [NOD-002e — Instantiate the Node](#)
- [NOD-002g — Record Node Provisioning](#)
- [NOD-002h — Validate the Provisioned Node](#)

Related Architecture Sections

- Add links to the architecture sections governing Test Resources, resource allocation, capacity, isolation, Test Environment composition, Provisioning, Evidence, and Traceability.

Delivery Phase

Assign the applicable delivery phase.

Requirement Status

Draft

Statement Reference

Use the following syntax to reference this requirement's Statement section from another DokuWiki page:

```
{{section>dido:03-dido-te:99-annexes:annex-c-requirements:03-node-requirements:nod-002-provision-a-node:nod-002d-allocate-node-resources#Statement&noheader&nofooter&noeditbtn}}
```

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