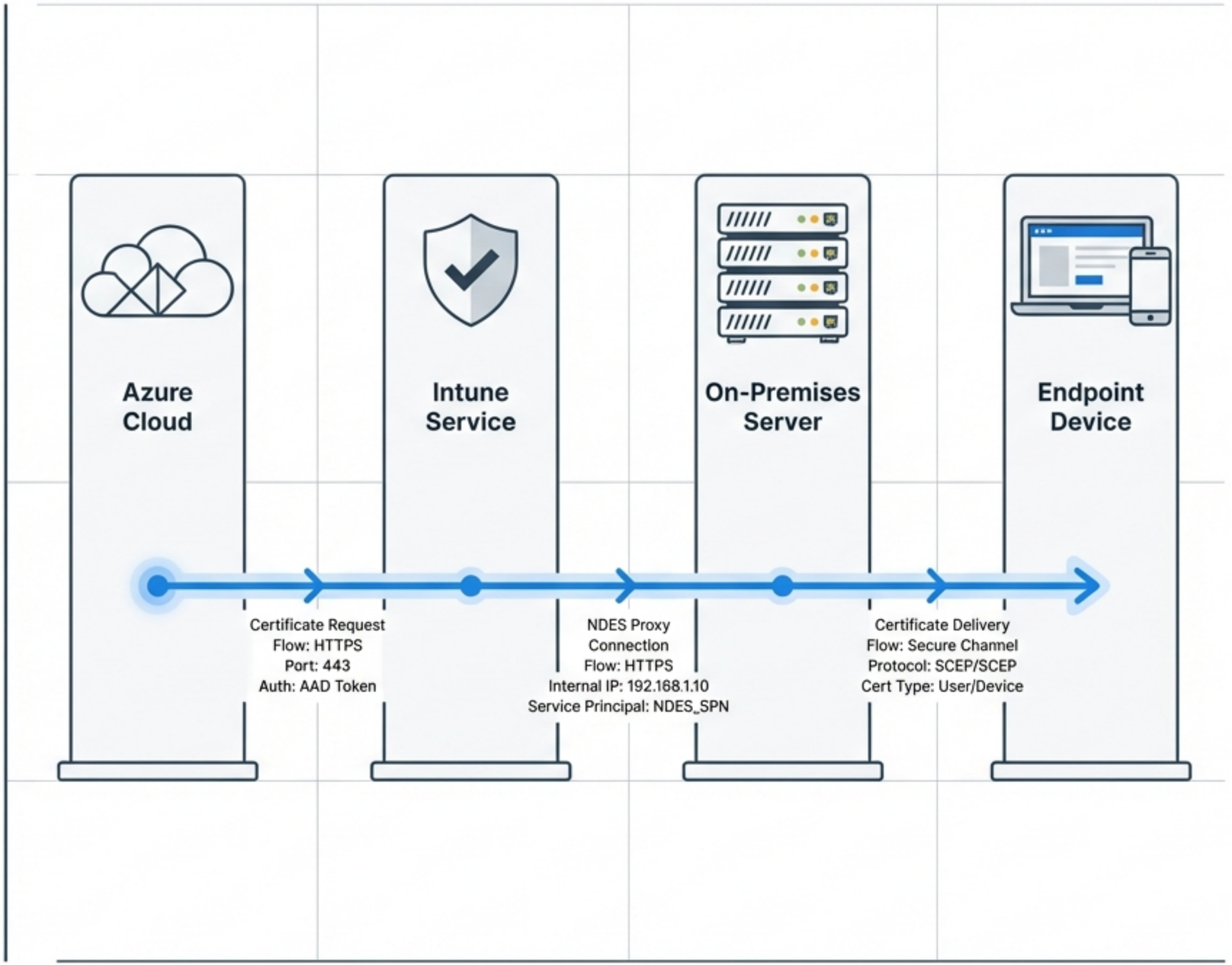
Modern PKI Architecture: Intune, NDES, & Azure App Proxy

A Configuration Walkthrough & Validation Guide for Secure Certificate Deployment

Eliminating VPN dependencies for certificate issuance by establishing a secure, authenticated bridge between Azure Active Directory and on-premises Certificate Authorities.



The Architecture of Trust

Traffic & Trust Flow Logic

Architecture Note: Direct network exposure is eliminated. The NDES server is hidden behind the Azure App Proxy. Traffic is pre-authenticated via Entra ID before it ever touches the internal network boundary.

Identity Foundation: App Registration & Enterprise Applications

App Registration Definition

Search

Display name ↑	Application (client) ID	Created on ↑	Certificates & secrets
N ndes-proxy	dd5c6d1e-857a-4893-9fa6-1f0ce7aee8c2	06/01/2026	Current

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Service Principal Context

Name	Object ID	Application ID
N ndes-proxy	d17f0fc1-a49d-444e-95b8-478...	dd5c6d1e-857a-4893-9fa6-1f0ce7aee8c2

Critical Match: The App Registration defines identity; the Enterprise App enables operation. IDs must align.

Architecture Note: Direct network exposure is eliminated. The NDES server is hidden behind the Azure App Proxy. Traffic is pre-authenticated via Entra ID before it ever touches the internal network boundary.

The Secure Tunnel: Private Network Connectors

Private Network Connectors

Health Status	Groups	IP	Status	Country/Region
	Default			
	NDES01.lab02.local	37.228.234.241	Inactive	Europe
	NDES02.lab02.local	37.228.234.241	Active	Europe

Connector Details: NDES02.lab02.local

ID:
`023b5807-40c5-400e-b968-9ac510062950`

Status:
Active

Machine Name:
`NDES02.lab02.local`

External IP:
`37.228.234.241`

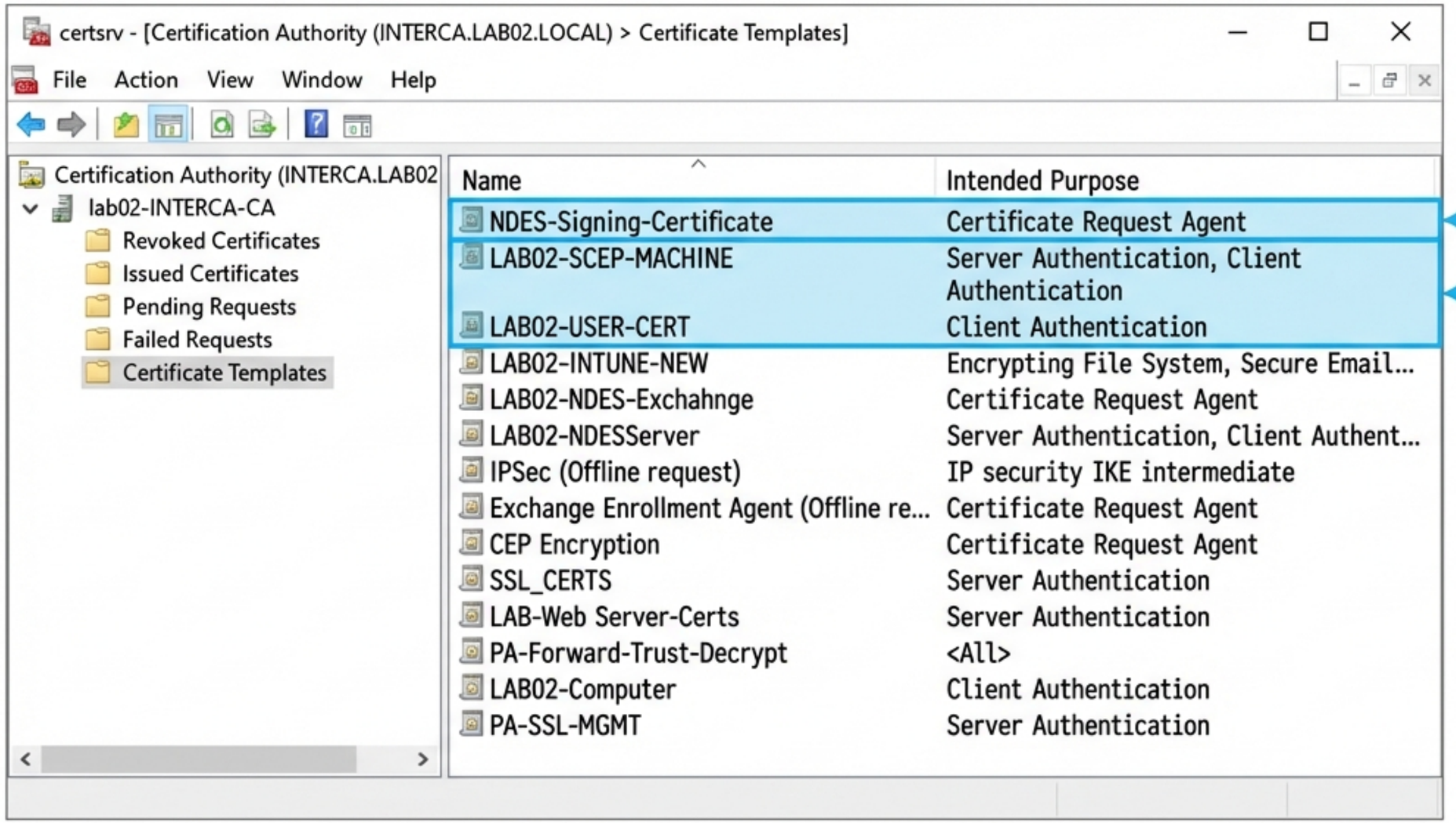
Version:
`1.5.4594.0`

Connector Group:
Default - Europe

Note: Inactive status on NDES01 illustrates redundancy or maintenance. Check outbound 443 access if unexpected.

The Authority: Certificate Templates Configuration

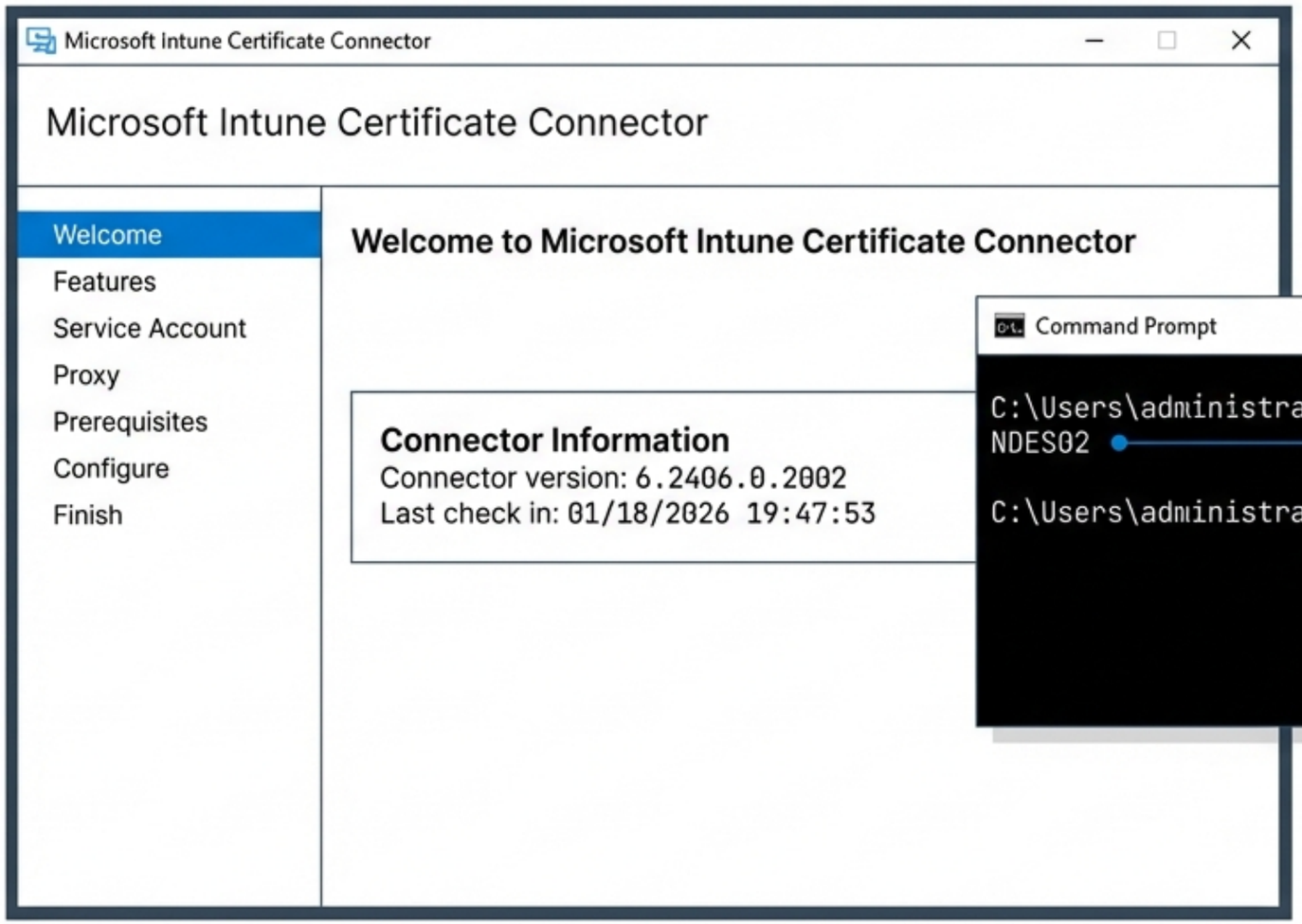
On-Premises CA Configuration (Host: interca)

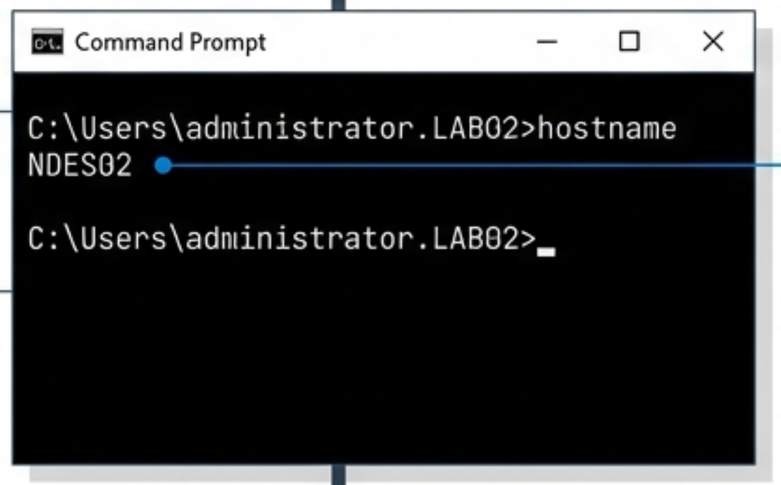


CRITICAL: Used by the NDES server to sign and vouch for incoming requests.

The payload template distributed to endpoints.

The Bridge: Intune Certificate Connector





Service Verification: The connector runs locally on the NDES02 host. It polls Intune for requests and communicates directly with the CA.

Policy Definition: Establishing Trust

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Policy name	Platform	Policy type
LA02-INTER-CA-CERT	Windows 8.1 and later	Trusted certificate
LAB02-SCEP-MACHINE	Windows 8.1 and later	SCEP certificate
LAB02-SCEP-USER	Windows 8.1 and later	SCEP certificate

Prerequisite: The Trusted Certificate profile pushes the Public Key of `lab02-INTERCA-CA` to the device's Trusted Root Store. The device must trust the issuer before requesting a personal certificate.

Policy Definition: SCEP Configuration

Policy name	Platform	Policy type
LA02-INTER-CA-CERT	Windows 8.1 and later	Trusted certificate
LAB02-SCEP-MACHINE	Windows 8.1 and later	**SCEP certificate**
LAB02-SCEP-USER	Windows 8.1 and later	SCEP certificate

2

Configuration Details

Contains External URL: The Azure App Proxy address configured in Phase 1.

Contains Template Ref: Matches `LAB02-SCEP-MACHINE` on the CA.

Operational Validation: Deployment Status

Policy Profile: LAB02-SCEP

1	0	0	0
Succeeded	Error	Conflict	Not applicable

This metric confirms the device successfully:

1. Received Policy,
2. Contacted App Proxy,
3. Authenticated,
4. Received Certificate.

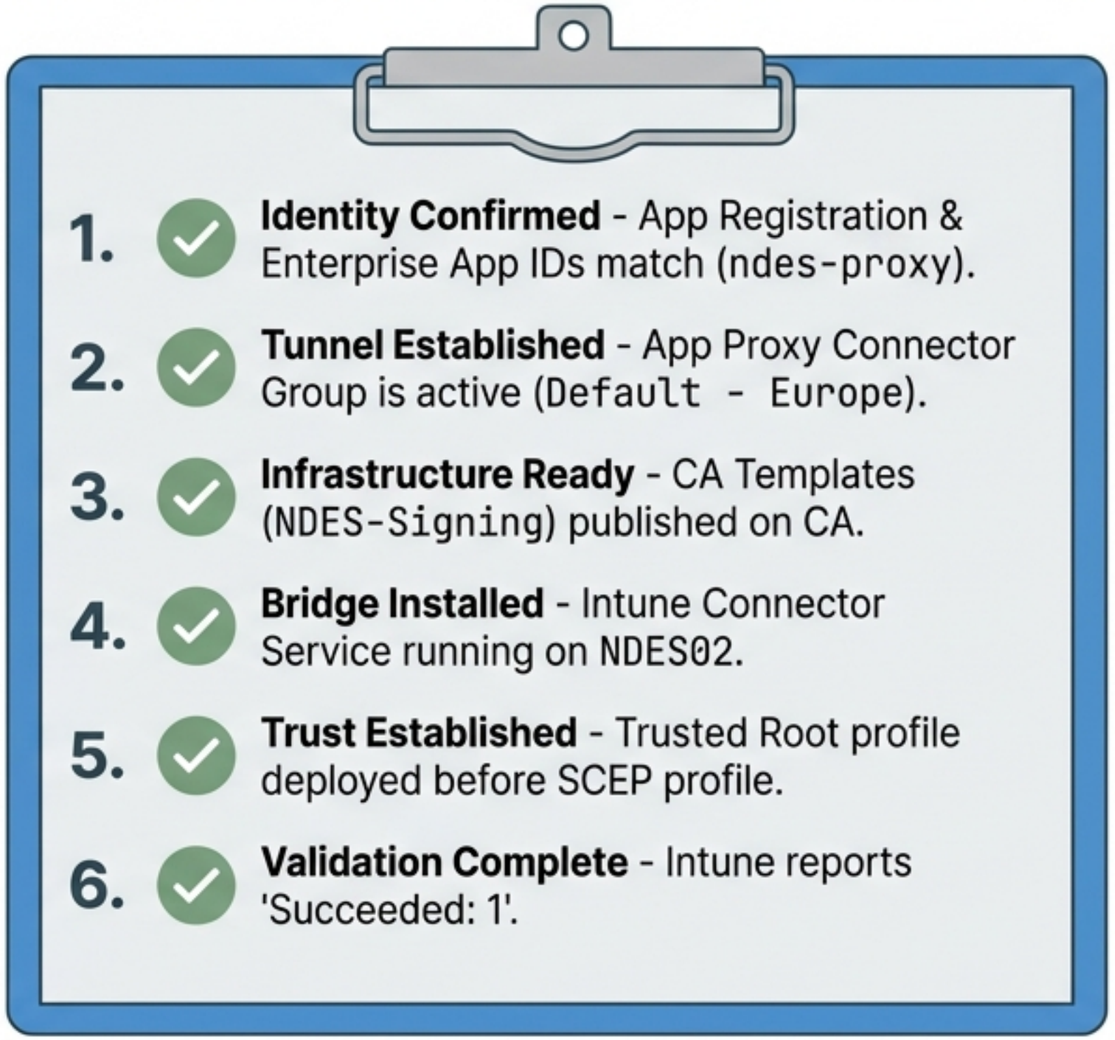
Operational Success

Endpoint Verification: Issued Certificates

Device name	Thumbprint	Serial number	Issuer	Key usage
DESKTOP-GM7NF61	C5D1F11A61F9822D0F26…	1A0000006BA620B66AA0A154FE…	CN=lab02-INTERCA-CA, DC=lab02, DC=local	160

Proof of Trust: The Cloud-joined device holds a certificate signed by the internal On-Premises CA.

Implementation Checklist & Summary



Final State: Secure, certificate-based authentication without VPN.