Progress®

External Security Administration Manager (ESAM) Unlocked

From Trusted Paths to Platform-Wide Security Governance

PUG Challenge 2026

Shelley Chase, Software Fellow - OpenEdge

November 6, 2026



Agenda

- The security problem ESAM helps solve
- ESAM the product: vision and principles
- Architecture and runtime flow
- ESAM in practice: who, what, where, when and how
- Future direction



© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Application Security Is a Business Issue



Protect Business Data

Customer, financial and operational data flows through every business application.



Secure the Code

Code weaknesses can let attackers execute unauthorized code or commands.



Govern Configuration

Server settings, transports and remote sessions each carry risk if left ungoverned.



Verify Identity and Access

Authentication and access control decide who can do what, and when.



Trust Every Component

Installed software and third-party components must be genuine and verified.



Stay Auditable

A record of who changed what supports compliance and fast incident response.

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Application Security Is a Business Issue



Protect Business Data

Customer, financial and operational data flows through every business application.



Secure the Code

Code weaknesses can let attackers execute unauthorized code or commands.



Govern Configuration

Server settings, transports and remote sessions each carry risk if left ungoverned.



Verify Identity and Access

Authentication and access control decide who can do what, and when.



Trust Every Component

Installed software and third-party components must be genuine and verified.



Stay Auditable

A record of who changed what supports compliance and fast incident response.

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Governing Configuration and Components

Govern configuration: settings, transports and remote sessions each carry risk if left ungoverned.

- Applications depend on server configuration, transports, remote sessions and authentication.
  - Each of these areas needs governance, not just the login screen.

Trust every component: installed and third-party software must be genuine and verified.

  - Vendors can no longer assume their environment is friendly.

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

ESAM the Product

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

The Vision of ESAM

Enhance the security of the OpenEdge platform by providing governance over application configuration and runtime practices.

Use industry standard security architectures necessary to meet corporate security requirements.

ESAM is an independent component, not part of OpenEdge

Progress®

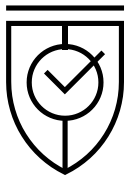
© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

What ESAM Provides



Trusted Location

A protected place for secure configuration data



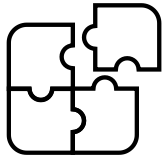
Access Control and Auditing

Control over configuration data, and a record of who changed it



Authenticated Installations

Run only genuine, verified OpenEdge installations



Trusted Components

Allow only trusted third-party components

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Three ESAM Personas

ITOps Admin

- Owns the ESAM service and its OS-level security
- Manages the install registry, policies and audit logs
- Backs up the registry and each install's identity token
- Audit log records when an operation is denied

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Three ESAM Personas

ITOps Admin

- Owns the ESAM service and its OS-level security
- Manages the install registry, policies and audit logs
- Backs up the registry and each install's identity token
- Audit log records when an operation is denied

OpenEdge Admin

- Owns OpenEdge installs governed by ESAM
- Gets ESAM rights through OS groups
- Keeps installs valid: no copied executables
- Includes ESAM in the normal OS backup strategy

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Three ESAM Personas

ITOps Admin

- Owns the ESAM service and its OS-level security
- Manages the install registry, policies and audit logs
- Backs up the registry and each install's identity token
- Audit log records when an operation is denied

OpenEdge Admin

- Owns OpenEdge installs governed by ESAM
- Gets ESAM rights through OS groups
- Keeps installs valid: no copied executables
- Includes ESAM in the normal OS backup strategy

Developer / User

- Builds and runs applications inside a registered install
- ESAM should be invisible

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Security Is Key Component of the Progress® OpenEdge® Platform

Application security spans the whole runtime, not just the login screen.

- The OpenEdge platform covers server configuration, transport security, sessions and authentication; key components within your system.
  - Every area carries risk if security governance is not applied

Vendors can no longer trust their environment from unintended maliciously installed software

  - Applications once relied on a firewall, or simply trusted their environment but this assumption no longer holds

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

First ESAM Use Case: CWE-114 and CWE-78

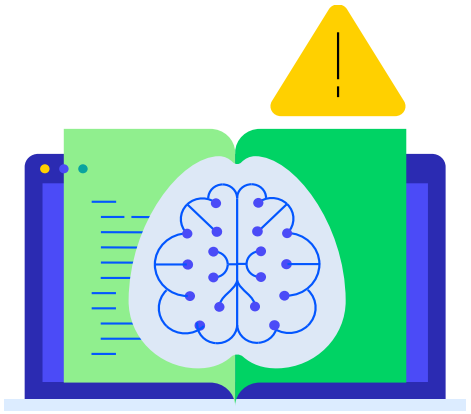
Code weaknesses: execute unauthorized code or commands.

- CWE-114: loading code from an untrusted source runs an attacker's payload
- CWE-78: client-side checks can be bypassed or removed entirely
  - Command **execution using a relative or external path**
  - Library loading using an externally controlled path

“DLC” is flagged by SAST scanners as an untrusted inputs so its usage needed to be secured.

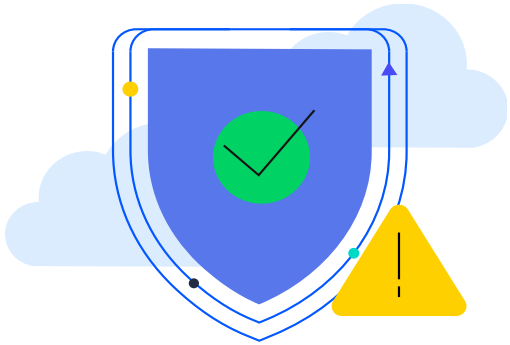
© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

ESAM Manages Trusted Decisions and Secrets



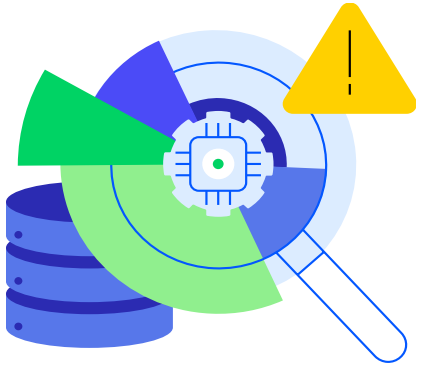
Installation identity

Validate software is genuine before allowing it to run



Policy decisions

Controls execution of requested action
Grant or Deny



Configuration and secrets

Protected storage for sensitive data.

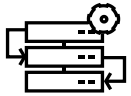
© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

ESAM Principles



Fixed Location

The service runs from a fixed, OS-owned filesystem location



Separation of Duty

OS administrator and OpenEdge administrator roles are separate by default



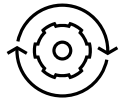
Secure Defaults

OS administrator read/write access, group read-only access



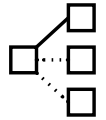
Continuous Operations

Error fallback keeps applications running, at a less secure runtime



Transparency

You do not know it is running unless it denies an unauthorized operation



One per System

A single ESAM can manage multiple OpenEdge installations

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Architecture and Runtime Flow

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Install to Trusted Execution Workflow

OE Install

- ESAM is a prerequisite
- Installer runs transparently
- Requires system admin

Register

- OpenEdge install generates validation artifacts
- ESAM saves GUID, path, digest
- One entry per installation

Validate

- Calls ESAM at startup
- ID and DLC path checked
- Policy rules to define untrusted execution behavior

Trusted Execution

- Only validated software runs



© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

One ESAM, Many OpenEdge Installations

One ESAM per system can govern every OpenEdge installation on that machine.

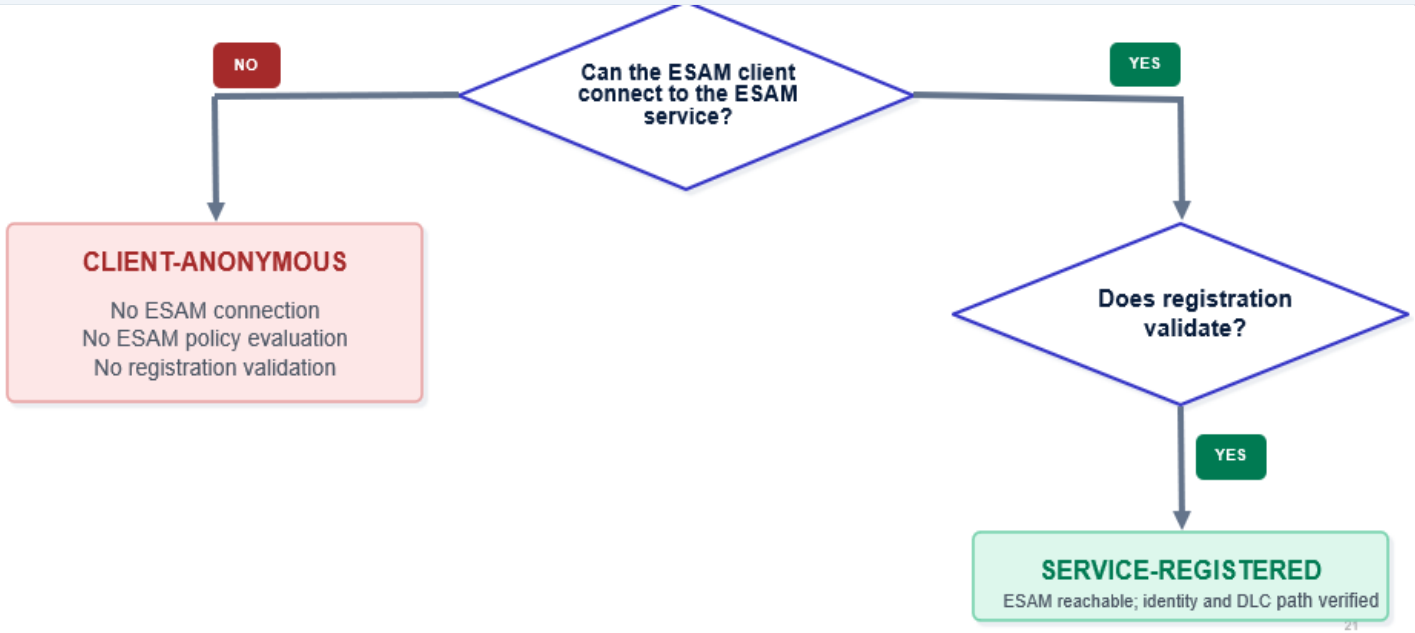
- 12.8+ installs, generates a GUID token
- Registration records the GUID, absolute install path and token digest
- A later 13.0 install updates the single ESAM Service

Note: 12.2 predates ESAM, so its install path cannot be validated

Progress®
© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

OpenEdge ESAM Identity Types

Identity type	Access	Secrets	Notes
Service Registered	Yes	Full access	DLC path and ID token both match
Client Anonymous	No	None	Emergency fallback; no ESAM connection

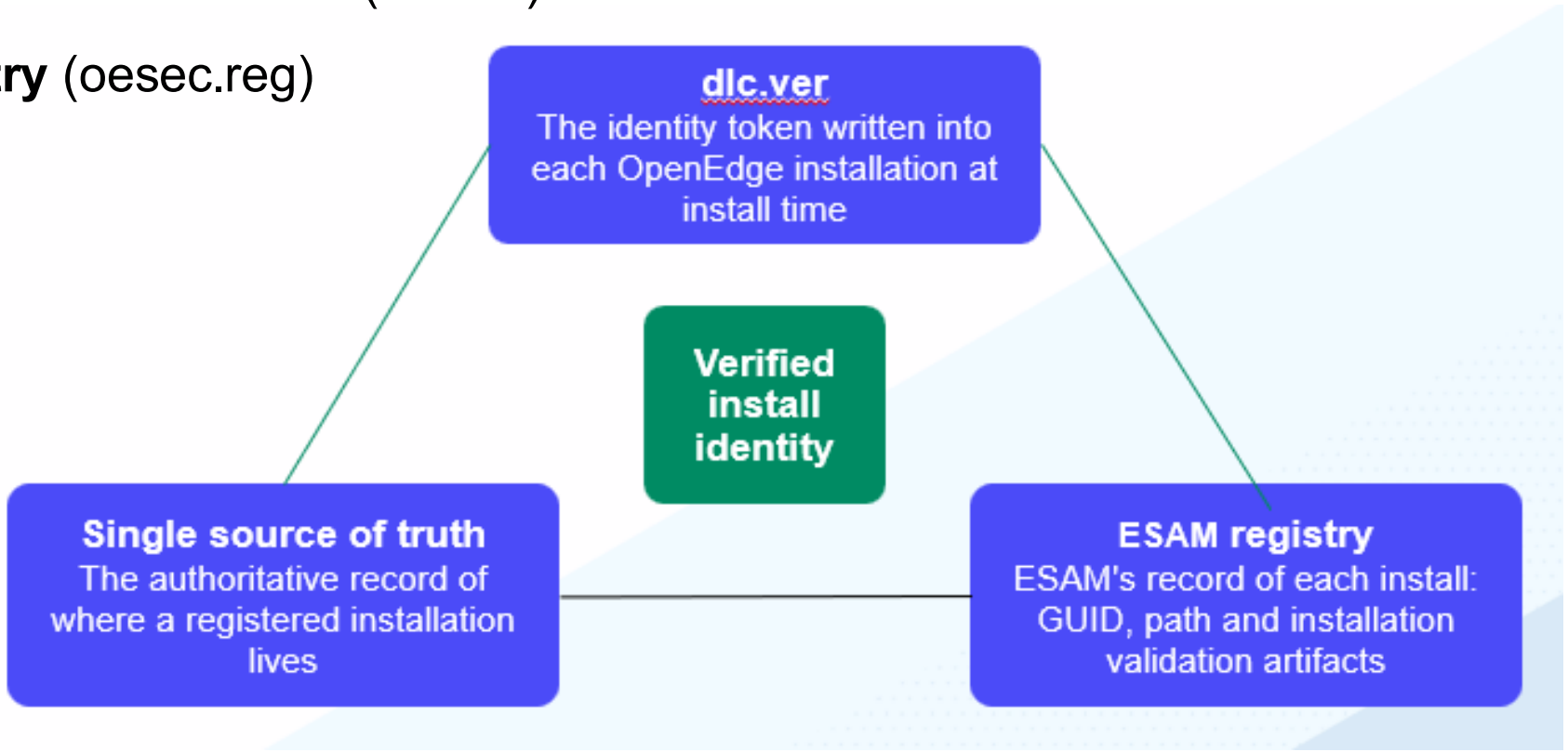


© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

The Trust Triad Behind a Verified Installation

GUID stored in two places:

- The **OpenEdge installation** itself (dlc.ver)
- The **ESAM registry** (oesec.reg)



All three validations must match, or the install is not trusted and policy decides what happens.

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

The ESAM Service and Its Security



Authenticated

OpenEdge executables must authenticate themselves to connect to ESAM.



No Shell Access

The ESAM service does not open access to OS file system or shell commands.



Readable Files

Service files must be readable by the OpenEdge OS account.



Group Access

Access to ESAM protected storage is based on groups, not individual identities.

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

ESAM: Who, What, Where, When and How

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

As an ITOps Admin, What Do I Need to Know?

ESAM is administrator-centric: it is an installation's point of control.

- Secure location for libraries, the install registry, policies and logs
- Service root is always openedge.d, under **`/etc`** or **`/Windows/System32`**
  - Each OpenEdge installation has its own configuration space inside ESAM.
  - Example: **`/etc/openedge.d/12.8/2917aa66`**…

- Each OpenEdge install has a unique token at **`$DLC/install/verify/dlc.ver`**

- Audit logs record failures, warnings and critical events

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Tips for ITOps Administrators

1	Validate ESAM is properly installed and lists all OpenEdge installations expected
2	Run the valdlc utility (13.x) as OS account to validate the ESAM service is running
3	Back up the ESAM private, secure space area
4	Sets and validates access control to protected areas and files
5	Restart OpenEdge products after changing ESAM policy so they pick it up

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

As an OpenEdge Admin, What Do I Need to Know?

ESAM is versioned and administered independently from OpenEdge.

- ESAM arrived in 12.6 and has been a mandate since
- The ESAM installer runs transparently with every OpenEdge install
  - Missing service is created, older is updated, newer is left alone
- Grant OpenEdge Admins ESAM rights via groups
- Include dlc.ver in your normal OS backup strategy

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Tips for OpenEdge Administrators

1	Never delete the install directory to uninstall—it holds registration data
2	Set ESAM policies per install – controls allowed identity types
3	Back up the OpenEdge installation's identity token file
4	Validate ESAM service is accessible at runtime
5	Set ESAM FIPS policy (13.0+)

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Why ESAM Holds the FIPS Artifacts

A FIPS JVM is configured by files, and files on an open filesystem can be swapped.

- Point a JVM at a different provider and it starts, believing it is in FIPS mode
- CWE-114: crypto configuration read from an externally controlled path
- ESAM space is OS-owned, so application code cannot rewrite it
- The install is validated before the policy is asked
- ESAM returns absolute paths, so there is no search order to hijack
- Only policy administrators can toggle FIPS

Progress®

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Starting in FIPS Mode: Policy First, then Artifacts

Administrators set the policy with POLMAN.
The application never reaches into the filesystem for these files itself.

1 Validate the Install

esamDLCValidate confirms the installation is registered before any policy question is asked

2 Evaluate the Policy

esamEvaluatePolicy queries urn:esam:fips140:can-run-without, read from the policy file stored under the install's registration GUID

3 Collect the Artifacts

ESAM returns absolute paths inside its protected space: fips.properties, java_bc.security and the Bouncy Castle FIPS libraries

4 Start OpenEdge in FIPS Mode

jvmStart launches the JVM with that security file and classpath; the result surfaces as SECURITY-POLICY:FIPS-MODE

Progress®
© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

FIPS Mode Is Not the Same as FIPS Compliance

What ESAM Mode Guarantees

- The FIPS configuration came from a protected, administrator-owned location
- The installation is validated
- Trusted Bouncy Castle FIPS libraries are the ones the administrator approved
- Only a policy administrator can turn FIPS on or off

What it Does Not Guarantee

- That your cryptographic modules carry CMVP validation
- That the OS, hardware and third-party libraries meet the standard
- That your own application code uses approved algorithms

ESAM is the difference between asserting FIPS and being able to demonstrate it.

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Demo

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Demo: ESAM Installation Flow

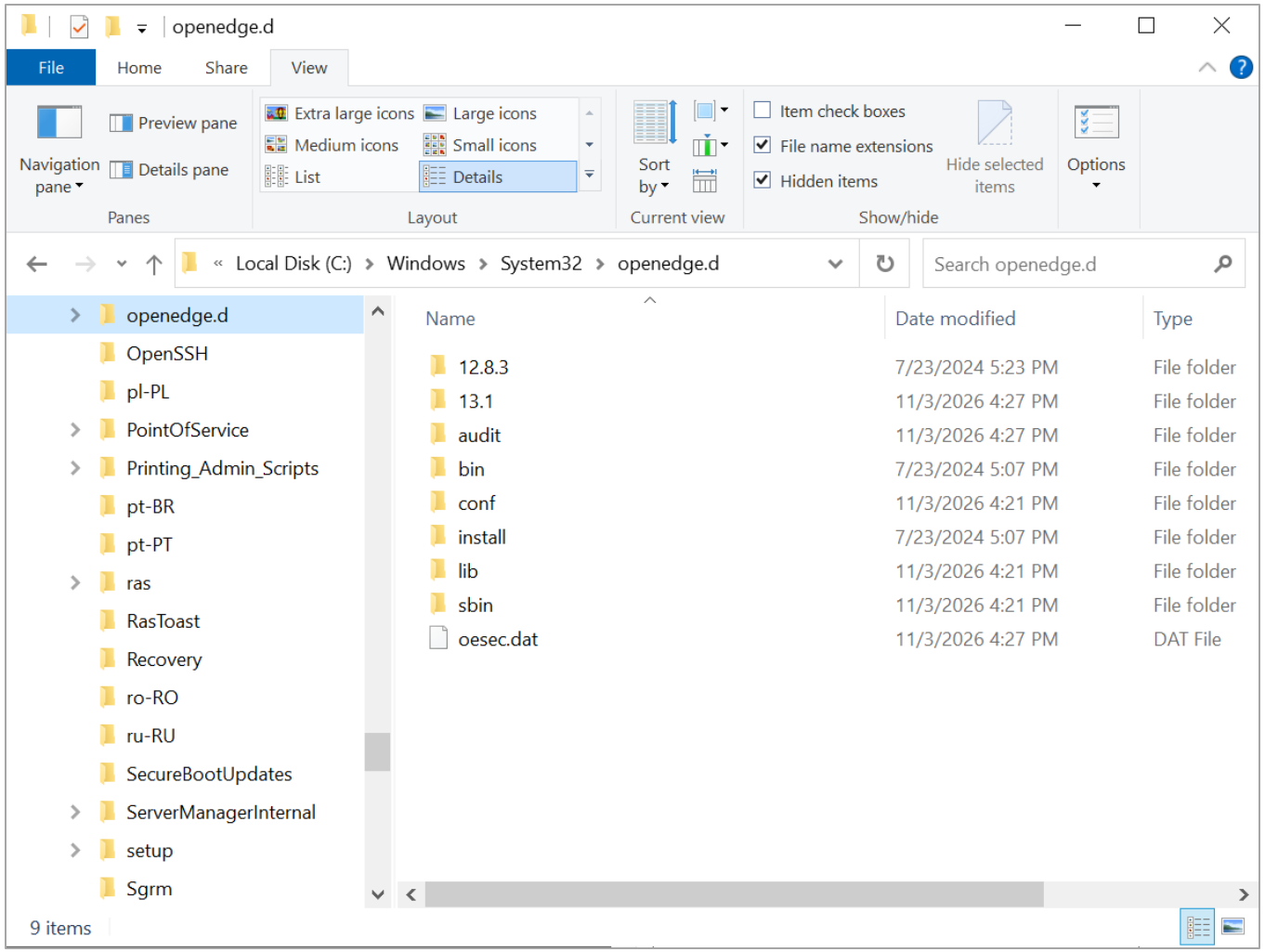
Locate, inspect, validate, administer, register

1. Open ESAM Service Root
2. Inspect the Audit Directory
3. Review ESAM Service Log
4. Validate an OpenEdge Installation
5. Register or Repair an Install

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Locate ESAM Service Root

ESAM private space: C:\Windows\System32\openedge.d



Notice 12.8.3 and 13.1 folders

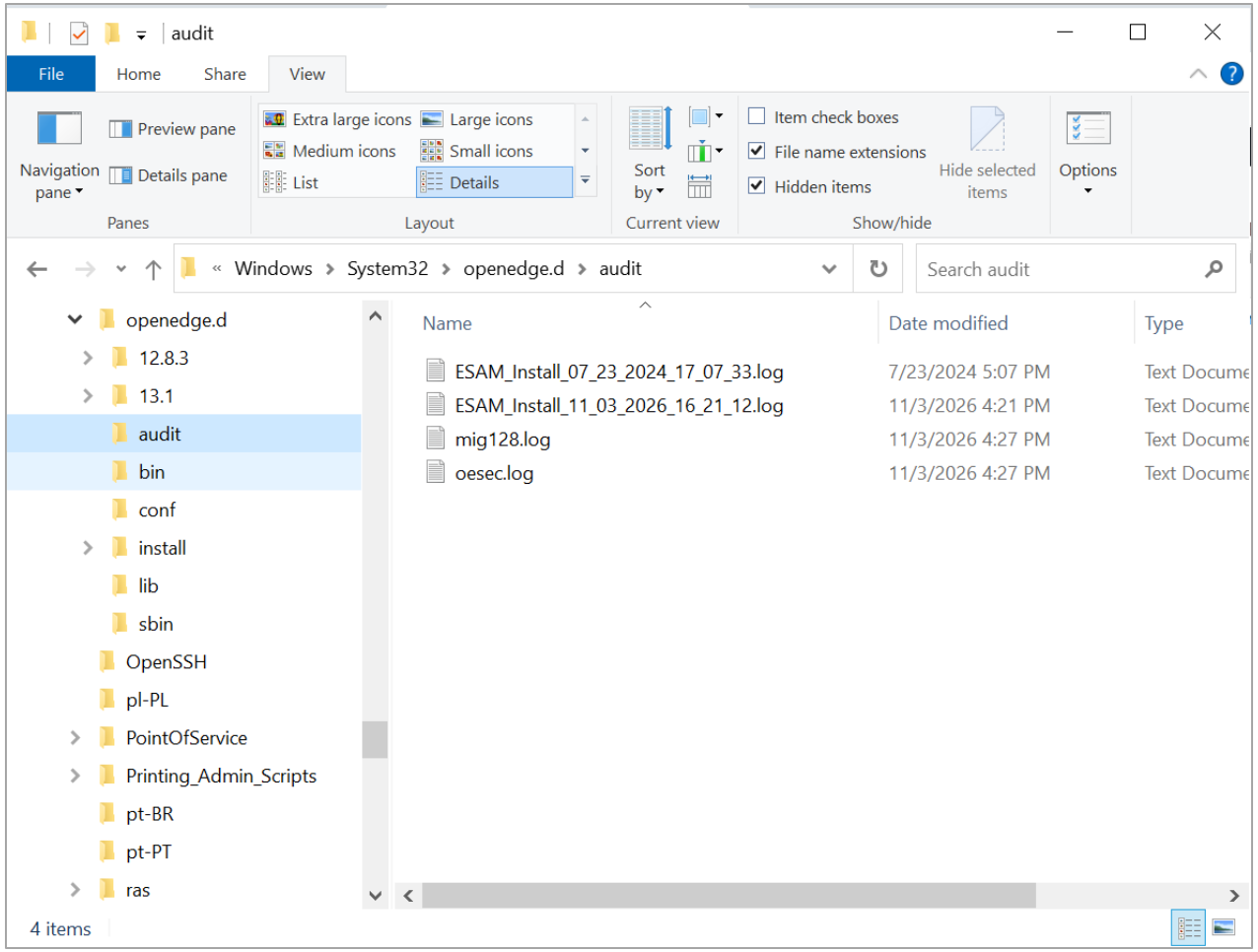
1. Installed 12.8 ESAM and OpenEdge
2. Added 13.1 OpenEdge which updated ESAM

Progress®

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Inspect the Audit Directory

Installation and service diagnostics are written to: C:\Windows\System32\openedge.d\audit



Notice two log files:

`ESAM_Install_07_23_2024_17_07_33.log`

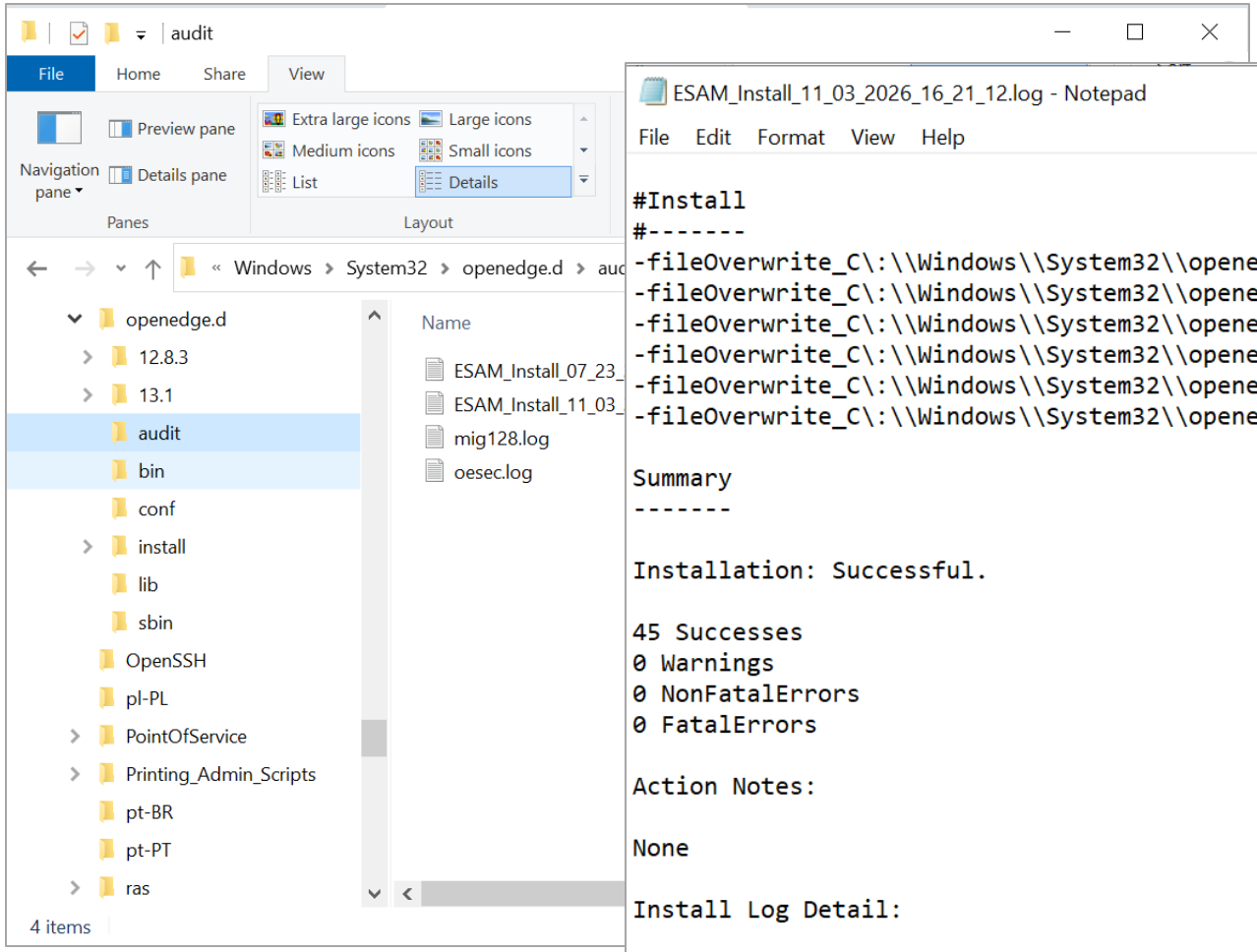
and

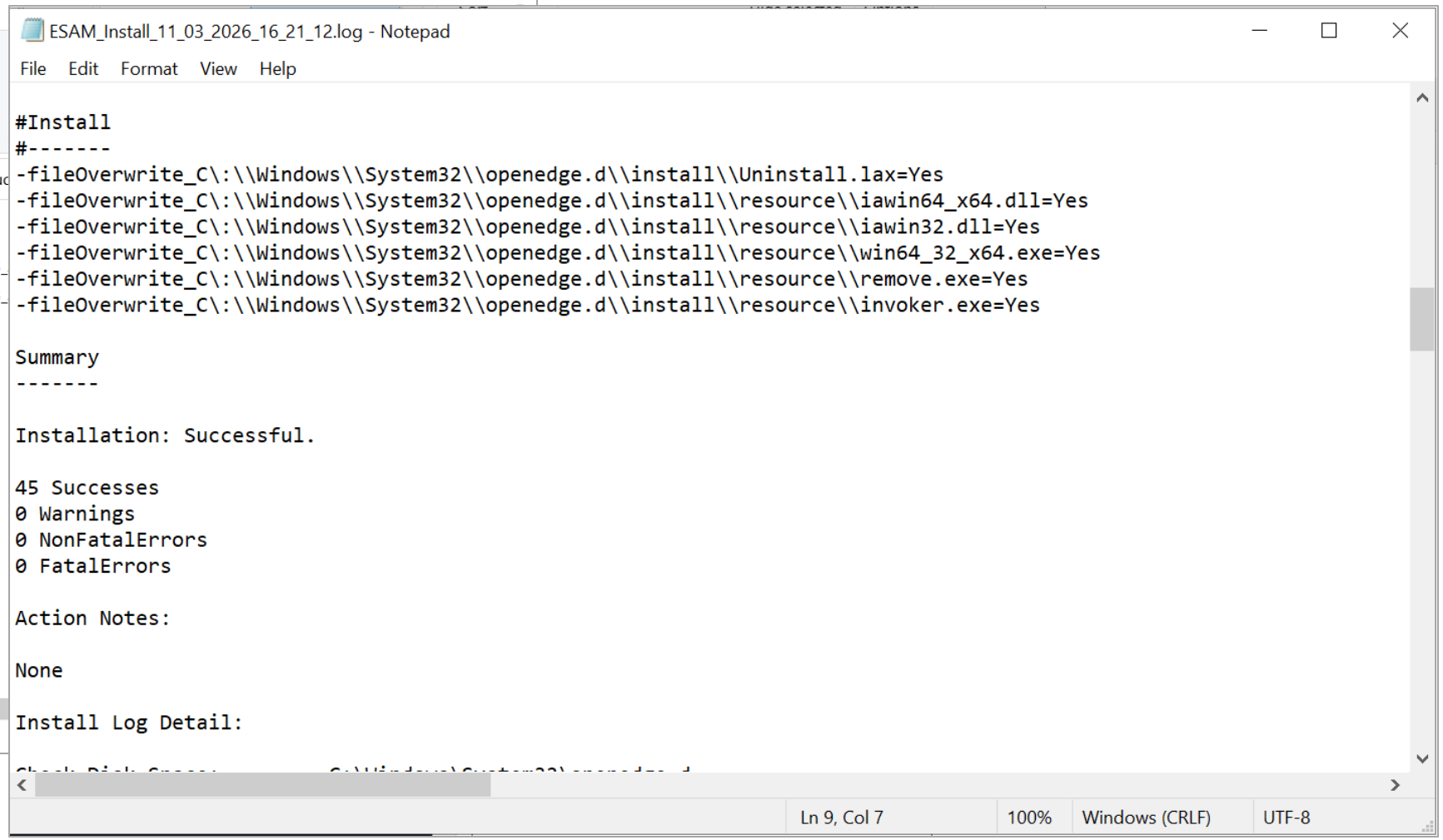
`ESAM_Install_11_03_2026_16_21_12.log`

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Inspect the Audit Installation Log

..\audit\ESAM_Install_11_03_2026_16_21_12.log

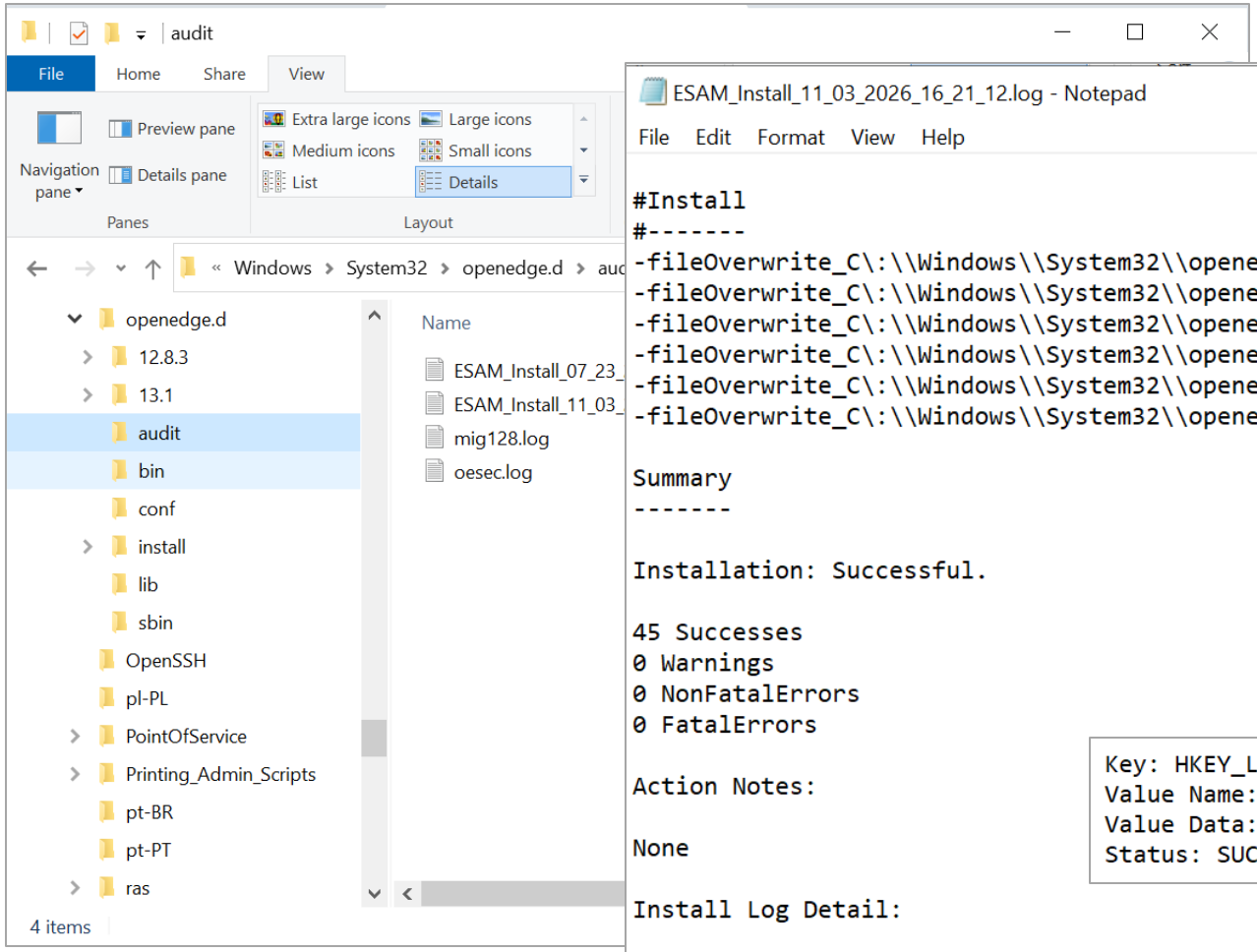


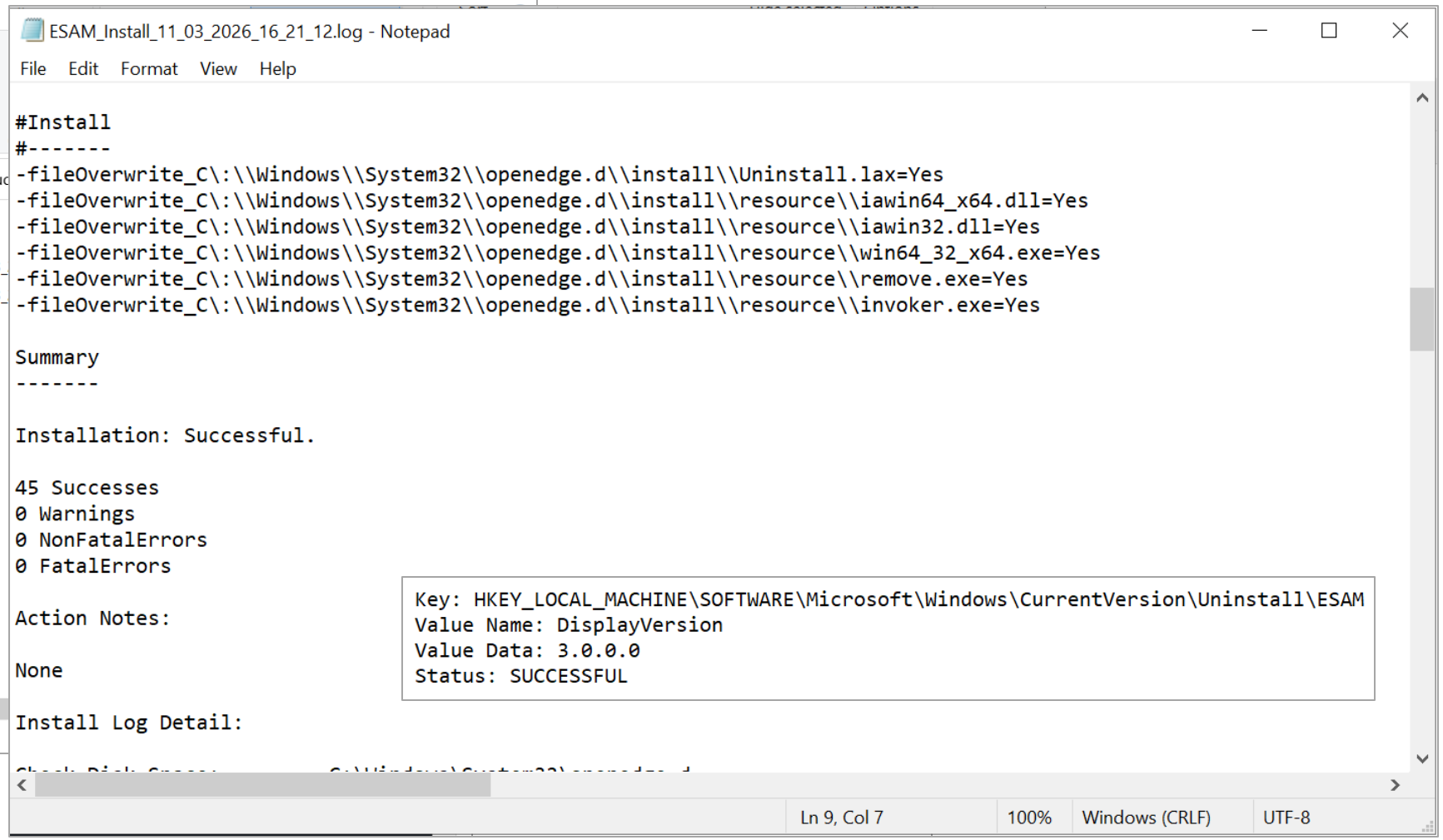


© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Inspect the Audit Installation Log

..\audit\ESAM_Install_11_03_2026_16_21_12.log

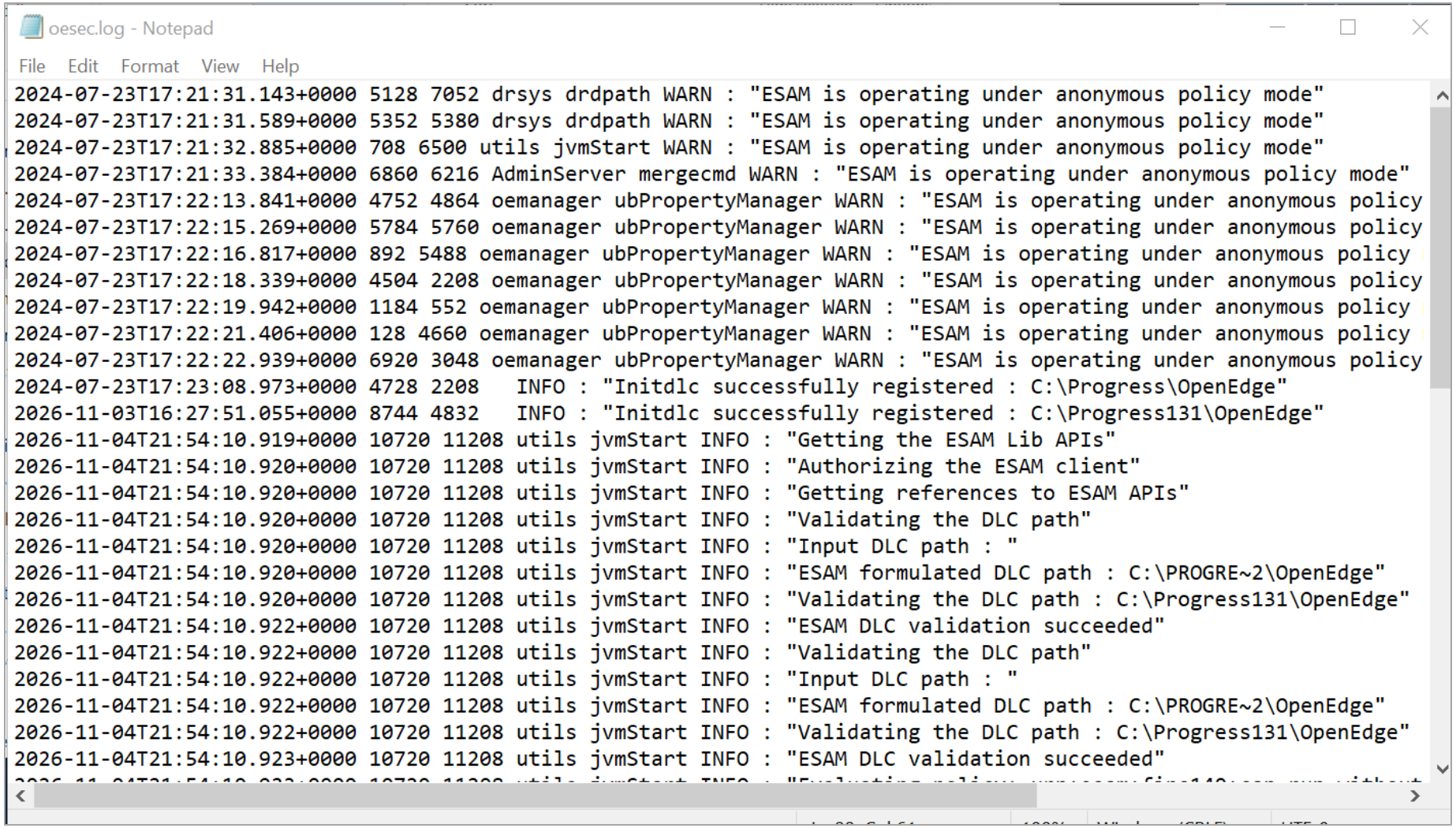




© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

ESAM Service Log

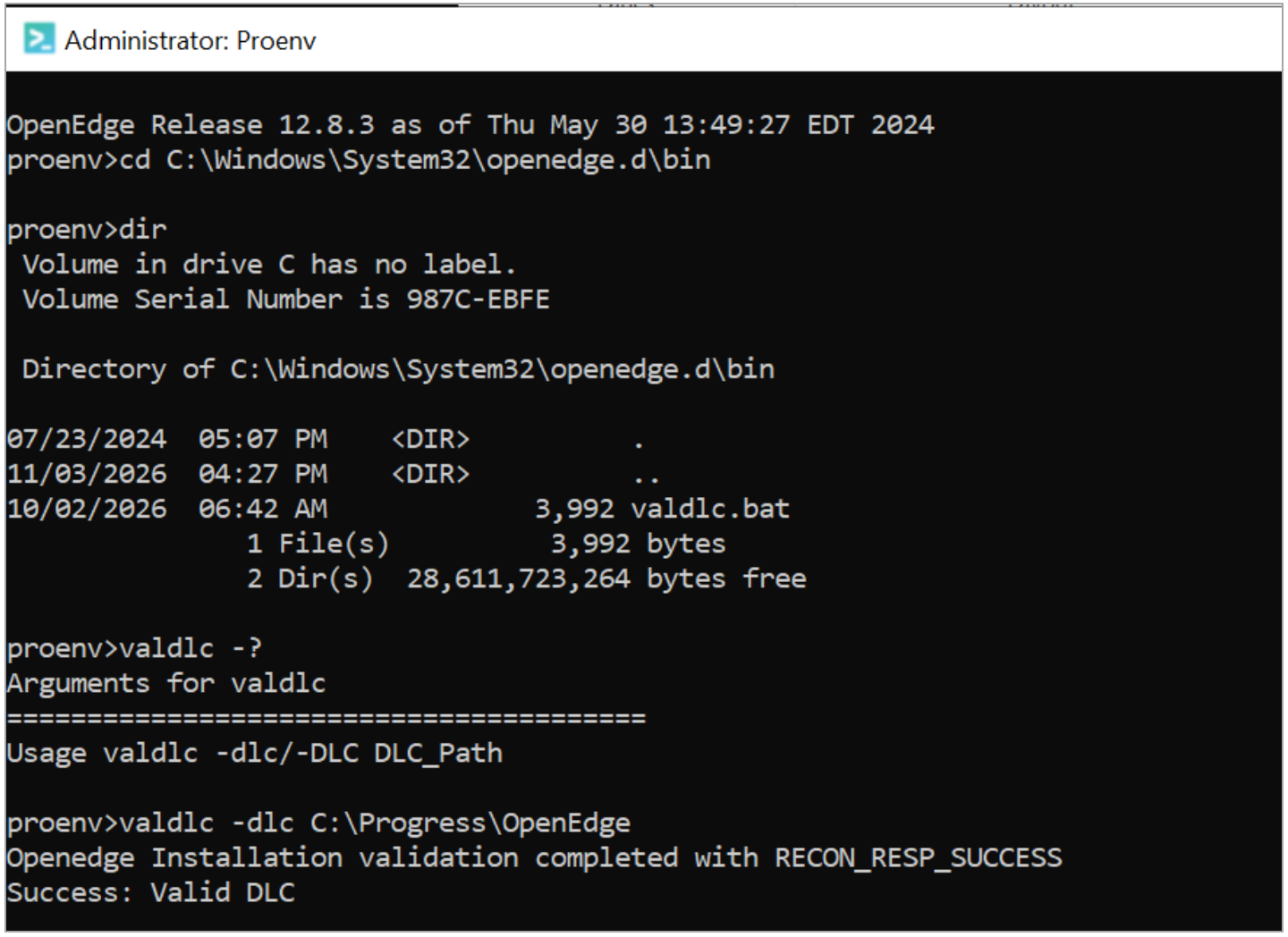
..\audit\ESAM_Install_11_03_2026_16_21_12.log



© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Validate an OpenEdge Installation

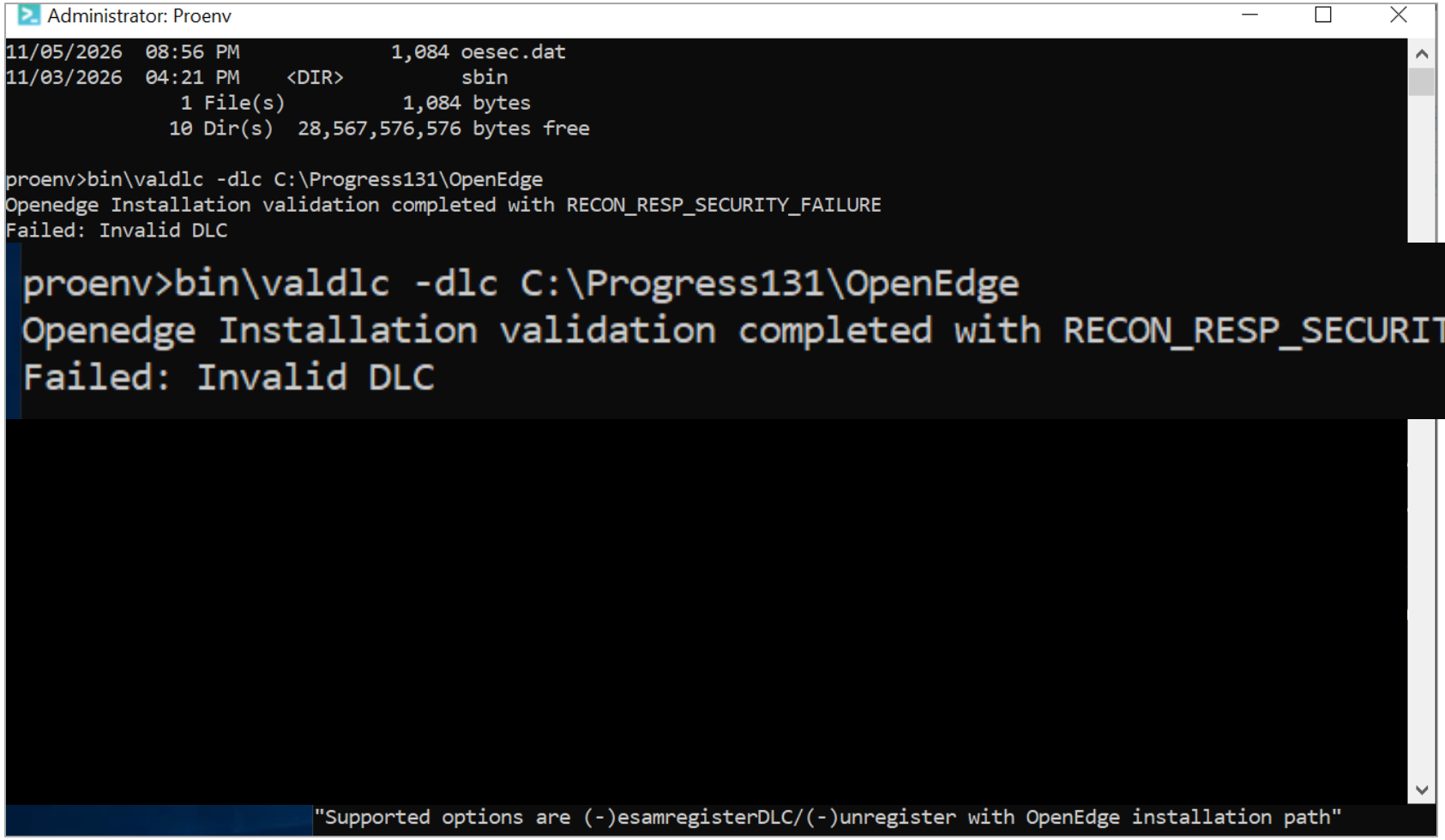
C:\Windows\System32\openedge.d\bin\valdlc.bat



Progress®
© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Register or Repair an Installation

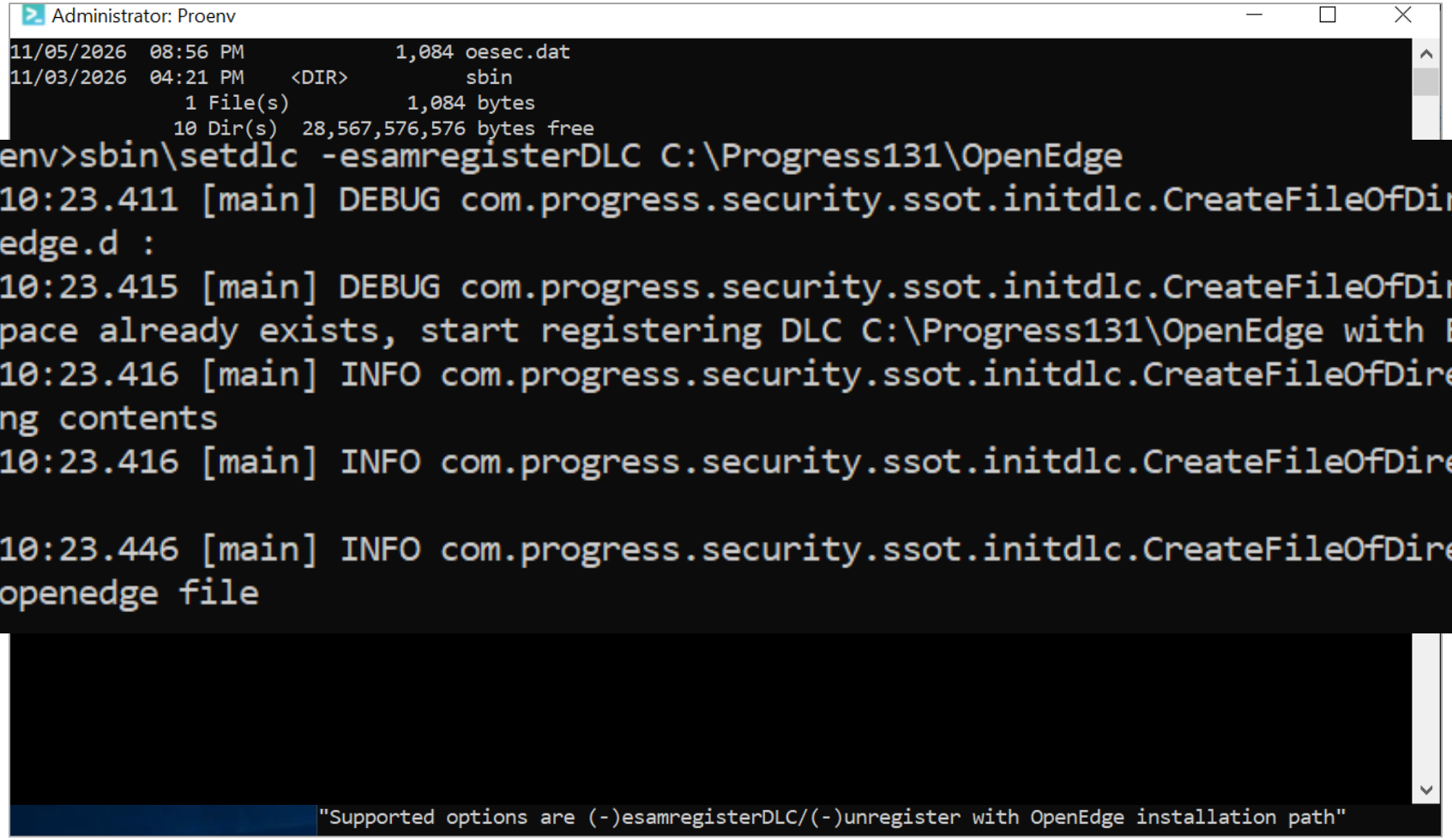
C:\Windows\System32\openedge.d\sbin\setdlc.bat



© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Register or Repair an Installation

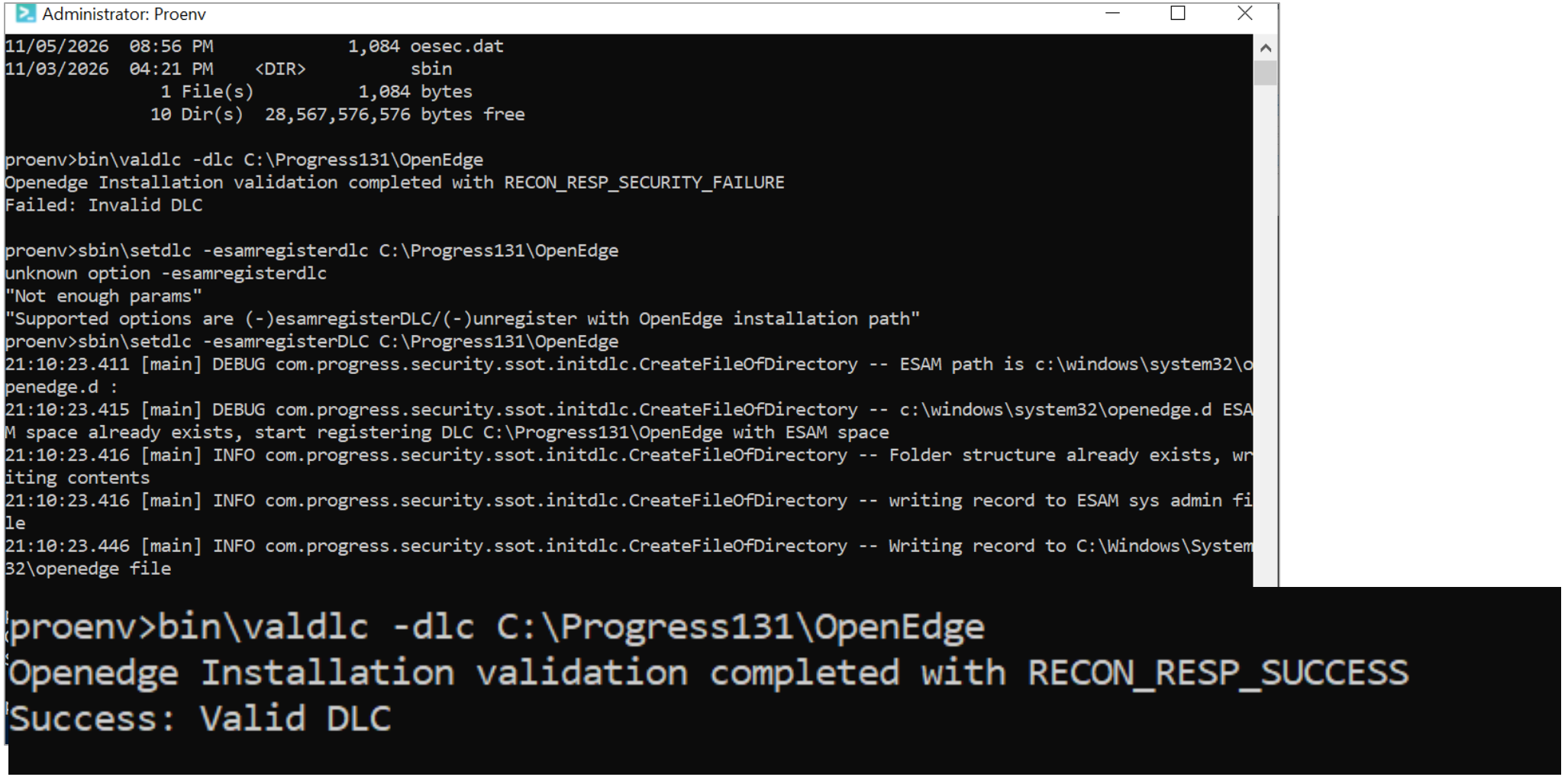
C:\Windows\System32\openedge.d\sbin\setdlc.bat



© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Register or Repair an Installation

C:\Windows\System32\openedge.d\sbin\setdlc.bat

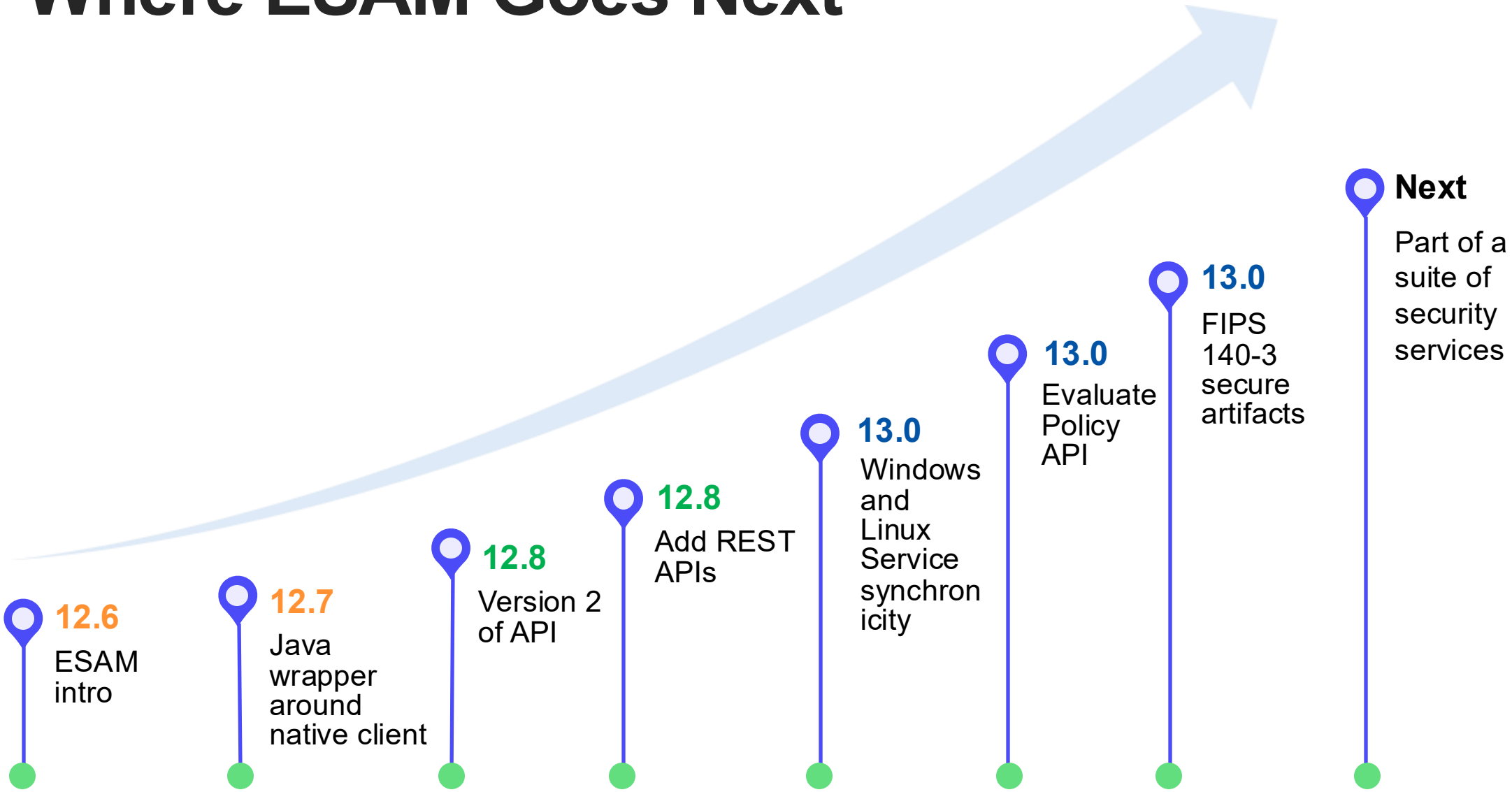


© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

ESAM Futures

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Where ESAM Goes Next



© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

A Versioned API, Not a Moving Target

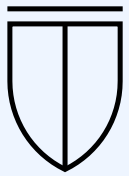
OpenEdge C and Java clients call ESAM through one versioned function table.

- Each version builds on the one before it, so older callers keep working
- Every function takes an API context, and variadic parameters leave room to grow
- Compile-time version checks stop a client and service from silently mismatching

Progress®

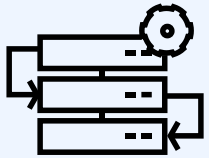
© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

Summary



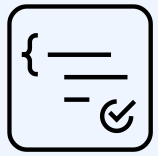
Security Pillar

ESAM is a critical component of OpenEdge platform security



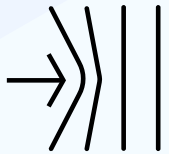
Separately Administered

Installation and administration are separate from the OpenEdge platform itself



Environment-Aware Policy

Policies are expected to differ between development and production



Built to Grow

The foundation for FIPS enablement and centralized governance

https://docs.progress.com/bundle/openedge-security-and-auditing/page/ESAM.html

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.

News You Can Use

- Learn how to access the **OpenEdge AI Assistant**
- Get started with the **OpenEdge MCP Server**
- Book a demo of **Progress Agentic RAG**
- Modernize to **OpenEdge 12.8** today
- Explore what's new in **OpenEdge 13.0**
- Work with **Progress Professional Services** to accelerate adoption
- Learn about **security capabilities** across OpenEdge
- Explore the **developer tools** available for OpenEdge today
- Connect with us: **Discord, Community, CVP and more**



Progress®

© 2026 Progress Software Corporation and/or its subsidiaries or affiliates. All rights reserved.


Progress®