

Progress OpenEdge World Tour 2024

OpenEdge 12.8

February 7, 2024

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OpenEdge Release Life Cycle



Innovation releases are shorter-lived and Retire with the next release

The focus is on agility and the ability to innovate

Currently OpenEdge 12.7



LTS releases are currently supported for 5 Active + 3 Sunset years

LTS Retirement:

11.7 - April 2025



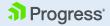
12.2 - October 2028

OE 12.8 – Q1 2024

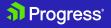


All roadmaps are for informational purposes only, and the reader is hereby cautioned that actual product development may vary significantly from roadmaps.

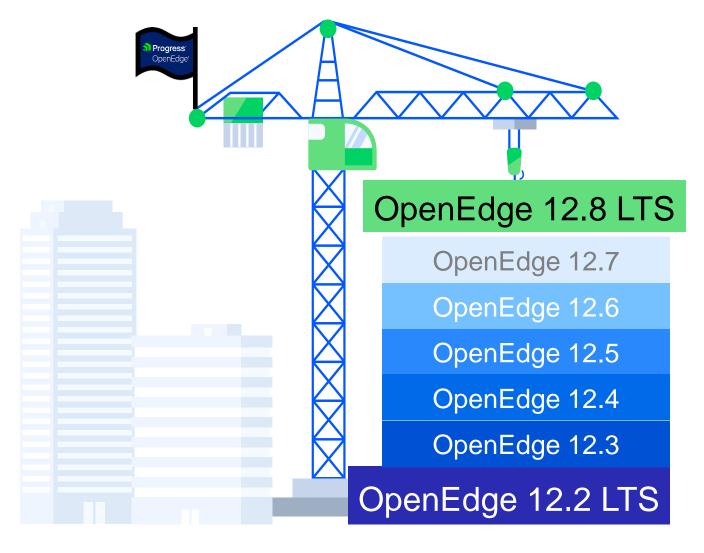
These roadmaps may not be interpreted as any commitment on behalf of Progress, and future development, timing and release of any features or functionality described in the roadmaps remains at our sole discretion.



Introducing OpenEdge 12.8



La version 12.8 LTS d'OpenEdge



January 16 2024 Target Q1 2024

GA - May 2023

GA - September 2022

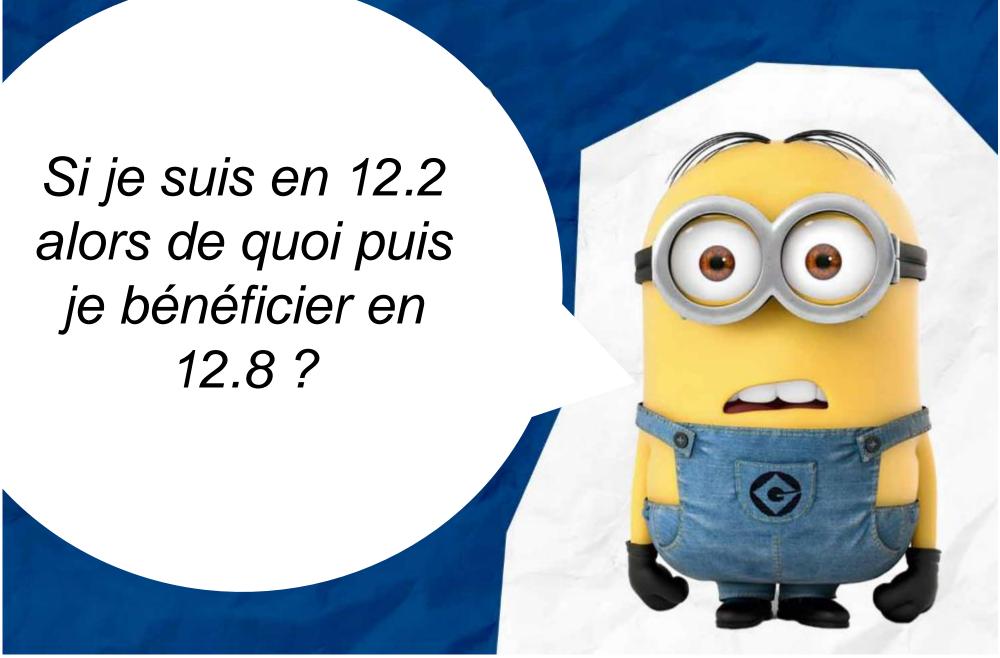
GA - February 2022

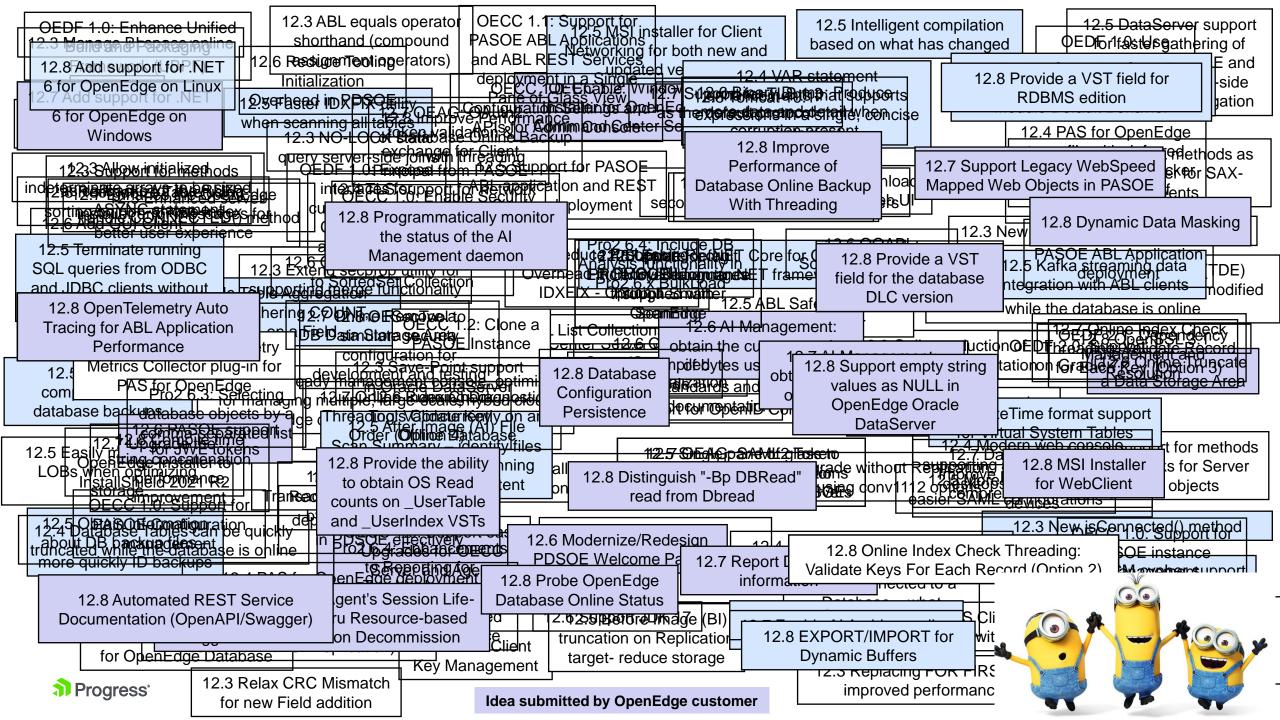
GA - July 2021

GA - October 2020

GA - April 2020

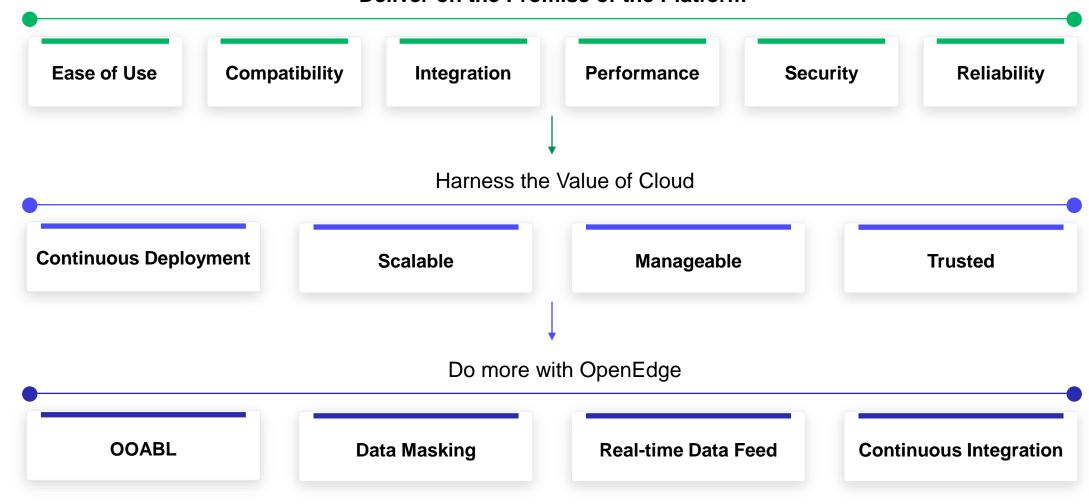






OpenEdge 12 Strategic Themes

Deliver on the Promise of the Platform

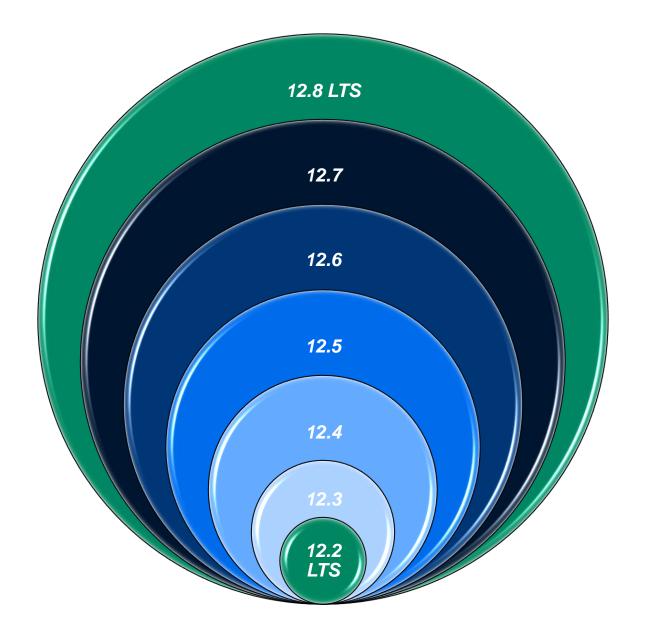




OE12.8 LTS Summary

- Under Construction Since Early 2020
- Most New Capabilities Already Proven In Production
 - LTS = Stability!
- Upgrading From OpenEdge 12.2 Is Compile-And-Go (with testing)







A Few OpenEdge 12.8 Feature Highlights

- Kafka
- OpenEdge Command Center
 - OpenTelemetry Tracing
- Hardware Security Module (HSM)
- Dynamic Data Masking
- A Few More Key Features

February 22





Kafka



Publish (write) streams of events



Subscribe to (read) streams of events



Store streams of events



Process streams
of events
(as they occur or later)

Activity Tracking

The original use case for Kafka. Clicks, likes, orders, registrations, preferences, etc.

Log Aggregation

Centralized storage and processing of logs as a stream of messages.

Data Processing

Low-latency data transmission to consumers. Used for financial data, logistics, etc.

Messaging

Kafka can work as a replacement for message brokers.



OpenEdge Command Center

- The next generation for monitoring & managing OpenEdge environments
- Gather metric data from the system, OpenEdge DB, and PAS for OpenEdge, with OE12.8 and OE12.2
- Bring your own choice of best-in-class APM tools for data analysis



Cloud-ready Management Console



Browser-based responsive UI, Easily accessible through Your Computer & Tablet devices



Light weight, Secure & Reliable Agents



Easy to use, Secure, Open REST API for automation



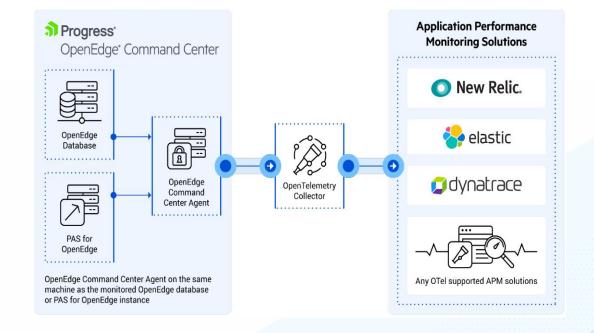
ABL Applications – Single Pane of Glass View ABL REST Services Deployment **OECC 1.1** ABL Applications Progress OpenEdge Command Center 0 tab: Single Pane > of Glass View for benifits payroll **ABL Applications** Actions ▼ G **ABL Applications** Services ·e Q Type here to filter **Web Applications** By: Name 1 Deploy Service By: Name ↓ PASOE INSTANCE AGENT NAME ~ benifits HumanResource v12.5.0 (2021-12-17) HumanResource oe-tf-1-Services Count Path insurance /benifits oeauthserver oeauthserver oe-tf-1-URIC URIO http://oe-tf-1-HC91OD.dev.progress.com:17321/benifits/rest/i... http://oe-tf-1-HC91OD.dev.progress.com:17321 oeauthserver oeauthserver oe-tf-1-Secure URI Secure URI 10 https://oe-tf-1-HC91OD.dev.progress.com:17322/benifits/rest/... oepas1 oepas1 oe-tf-1https://oe-tf-1-HC910D.dev.progress.com:17321 Service Version oepas1 oe-tf-1oepas1 v12.5.0 (2021-12-17) UNDEPLOY Service Descriptor payroll v12.5.0 (2021-12-17) HumanResource oe-tf-1insurance.paar procurement v12.2.7 (2021-10-29) procurement oe-tf-1 Service Location WEB-INF/adapters/rest/insurance/insurance.paar supplychain v12.2.7 (2021-10-29) procurement oe-tf-1 UNDEPLOY _oepingService URITO http://oe-tf-1-HC91OD.dev.progress.com:17321/benifits/rest/_...

OECC Architecture Server 1 OE **REST Client** 12.2 **OECC Browser Client OECC** HTTP/S with Agent HTTP/S WebSocket HTTP/S with WebSocket Server 2 **OECC Server** OE OECC HTTP/S with WebSocket Agent 12.2 Config & Updates **JSON Document** Messaging OE 12.4 MongoDB File Store

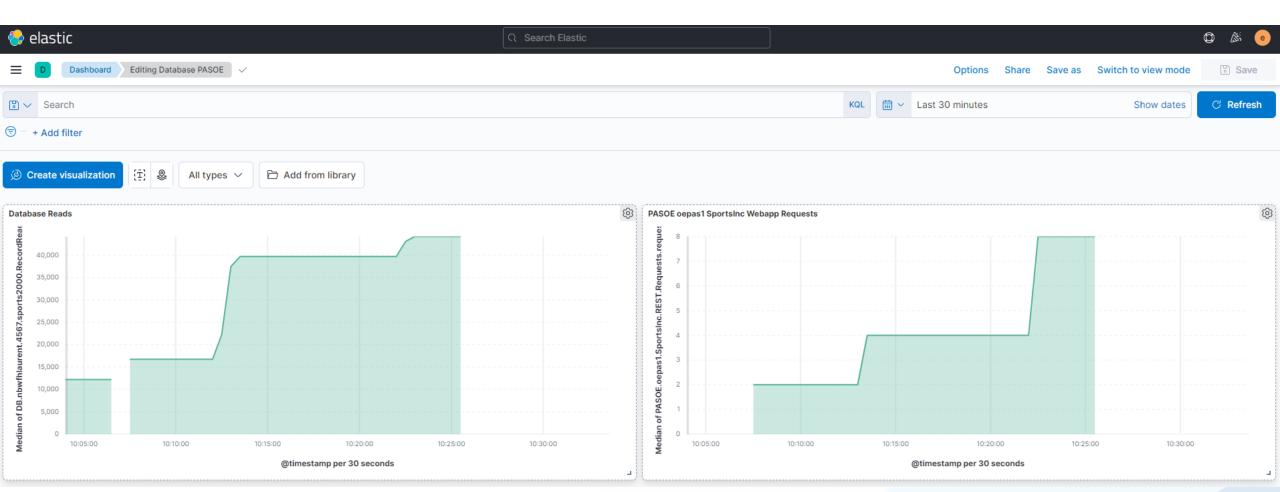
Progress

OpenTelemetry Traces

- AVM Auto Tracing
- Configurable: ABL Procedure/Class/Method begin/end first, Transaction begin/end & DB Connect/Disconnect planned
- Trace Id propagated to external PAS for OpenEdge Instances
- No changes to the application code
- New Built-in "Progress.Lang.Telemetry" Class
- Application-level integration: insert Begin/End Spans
- Add Data to current Span to propagate Trace ID for ABL & HTTP Client first, .NET & Java planned
- PAS for OpenEdge Session Manager Tracing
- Trace Request through all transports (APSV first, Web, REST, SOAP planned), through stages of request fulfilment







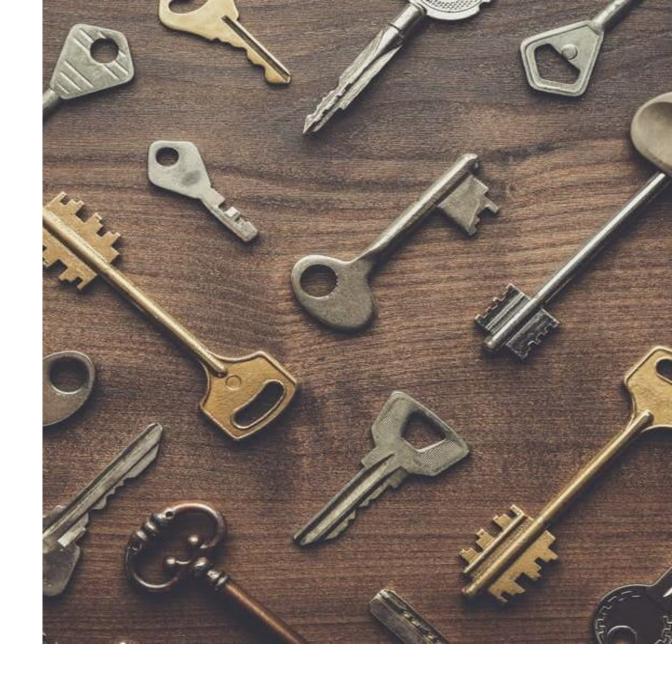


Hardware Security Module (HSM)

Used when cryptographic keys need the highest level of protection

HSMs are specialized devices that securely store/use cryptographic keys

- Tamper-resistant hardware
- Stores and protects keys, and makes available to authorized users
- Keys do not need to be loaded into the web/application server memory

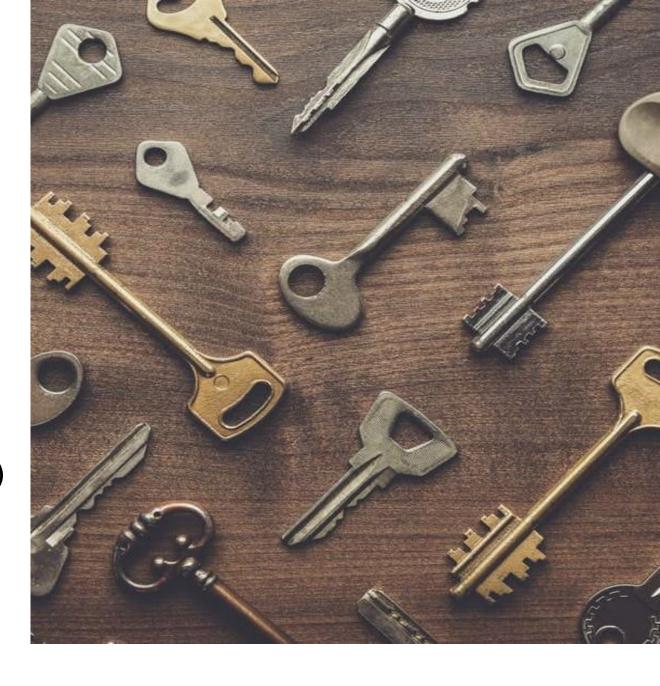




Hardware Security Module (HSM)

For security compliance purposes Includes

- JSON Web encryption (JWE)
- Hardware Security Module (HSM)
- Transparent Data Encryption (TDE)



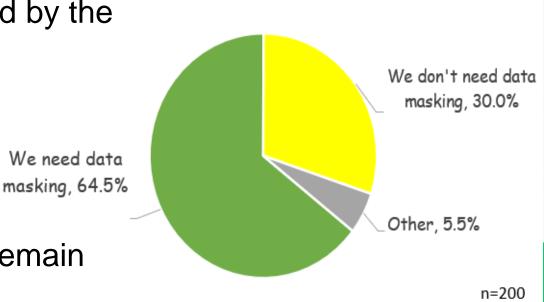


Dynamic Data Masking

Obfuscate sensitive data when displayed by the application

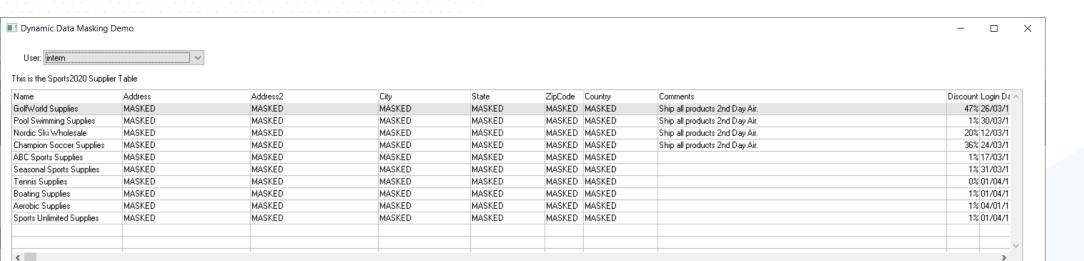
- Based on Admin-defined user permissions
- Configurable masking patterns

Used for regulatory compliance and to remain competitive



Dynamic Data Masking Need





This is the Sports2020 Employee Table

First Name	Last Name	Address	Address2	City	State	Home Phone	Work Phone	Birthdate	Dept Code	Emp No Position	Postal Code Sic 🗸
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A***a	##drews	10 SmZZZZZZ		B?dford	GA	(617) 555-1111	(617) 280-4599	12/12/1984	1 100	2 Con%%%ant	66766
J****e	Smith	1342 7777777777	Apt 345b	Boston	MA	617 333-3334	800 787-8484	08/01/1979	9 400	3 Sal%%%ger	01834
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K×××y	###dford	344 BZZZZZZZ		N?? York	NY	212 444-4433	212 334-3433	04/12/1969	3 200	5 Adm%%%Rep	89987
F***k	###ersen	123 AZZZZZZZ	Apt 34A		VA	703 292-2222	703 332-3433	09/01/1994	4 400	6 Sal%%%ger	03443
K****e	Weiss	323 SZZZZZZZ		P?????lphia	PA	215 393-3309	215 933-2022	03/07/1989	9 500	7 Sen%%%ner	33233
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OpenEdge 12 Feature Summary

12.0 Mar 2019

12.1 Sep 2019

12.2 Apr 2020

12.3 Oct 2020

12.4 12.5 Jul 2020 Feb 2020

12.6 Sep 2020

12.7 May 2020 **12.8** Q1 2024



OpenEdge 12.0

Multi-threaded DB Server

Al streaming Replication

Server-side JOINs – For Each

Server-side ABL Profiling

PASOE OAuth2 & SAML, and Docker container support OpenEdge 12.1

Modify DB params, non-structural schema online

Extend/mark variable-length ai, bi and Extents as fixed

Server-side JOINs – dynamic queries OpenEdge 12.2

Modify Triggers, more DB params online

Auto DB reconnect on primary failure

Server-side JOINs
– FORWARDONLY dynamic
queries
NO-LOCK

Enhanced ABL Profiler

Search for string in MEMPTR variable

OpenEdge DevOps Framework OpenEdge 12.3

Online BI space management, defrag of MT & TP tables, app schema changes

Server-side JOINs – static queries NO-LOCK

Methods as callbacks, new VAR statement

OpenEdge 12.4

Online Field Drop, Table Truncate

PASOE deferred logging trace file

Default Area assignment, extend methods as callbacks

OE Command Center (OECC): PASOE management OpenEdge 12.5

Index Fix speed, DB backup compression, online truncated LOB Move

OOABL List Collections & Override a Property, Elvis Operator

PDSOE new indexing of dependencies

Kafka producer & consumer support

OpenEdge 12.6

Truncate DB storage area online & Index Fix improvements

HSM & JWE support

OOABL SortedSet Collections

OECC clone PASOE instance, OpenTelemetry metrics for DB & PASOE

Pro2 improved auto-migration from V5

OpenEdge 12.7

DB remove storage area online, online Index Check multi-threading

OOABL HashMap Collections

PDSOE Type Hierarchy view

Signed r-code

.NET 6 support on Windows

TLS 1.3

OpenEdge 12.8

DB configuration persistence & faster Index Check and online backup

Dynamic Data Masking

Traceability via OpenTelemetry

.NET 6 support on Linux

WebClient MSI Installer

Updated PROMSGS



A Few More Key Features

- Many ABL (e.g., Safe Navigation Operator, VAR Statement), and OOABL (e.g., Collections) improvements
- Performance improvements to DB Backup/Restore, Index admin utilities (Check, Fix, Compact)
- More DB operations online (Table & Data Storage Area Truncate, Field Drop Schema change, Remove Storage Area, etc.)
 - External Security Admin Mgr (ESAM) Secure executables
 - Support .NET 6 on Windows and Linux
 - PAS for OpenEdge Agent session scale down and decommission life cycle management including graceful emergency shutdown



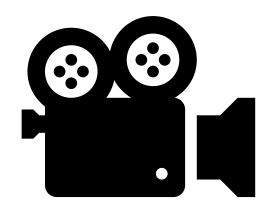


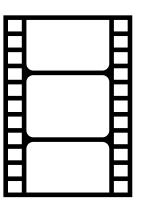
Coming Soon Memory Profiler

Memory Use in your App Changes Over Time... Your Memory Profile is Time Series Data

A Stream of Data telling the story of the App's Allocations and Deallocations

A Series of Snapshots at Regular Time Intervals







Complete Details

- Please read the "What's New" document
 - Visit https://docs.progress.com/category/openedge-information-hub
 - "What's New In OpenEdge 12.7" includes all new Features from OpenEdge 12.0 onwards
 - "What's New in OpenEdge 12.8" will also be comprehensive from OpenEdge 12.0







Initiative 2023 to Help Modernization of Applications

Software Improvement Group (SIG)

A Partnership to help on Modernization of Applications

Independent Global Authority on Software Assurance

GETTING SOFTWARE RIGHT FOR A HEALTHIER DIGITAL WORLD

Signd

Sigrid® provides (continuous) insight into software build quality, costs, security, and other risks, to support ROI based transformations

Scientific research

The SIG research department develops our measurement models and contributes to advancements in the field of software engineering.

Benchmarking

The SIG software analysis database is the largest in the world, containing more than 85 billion lines of code.

Sigrid® | Landscape Scan

Full scan of all software code to provides fact-based, risk identification within 2 weeks for prioritization, budgeting and planning purposes.



TUVIT Certification

SIG is the first company in the world with a laboratory accredited by TÜViT to certify software for ISO 25010.

What is Sigrid for Progress?

Security



Stay ahead of the game: Security monitoring

- Prioritized findings from regular security code scans
- In-depth analysis of privacy and security design
- Avoid security breaches and ensure privacy compliance

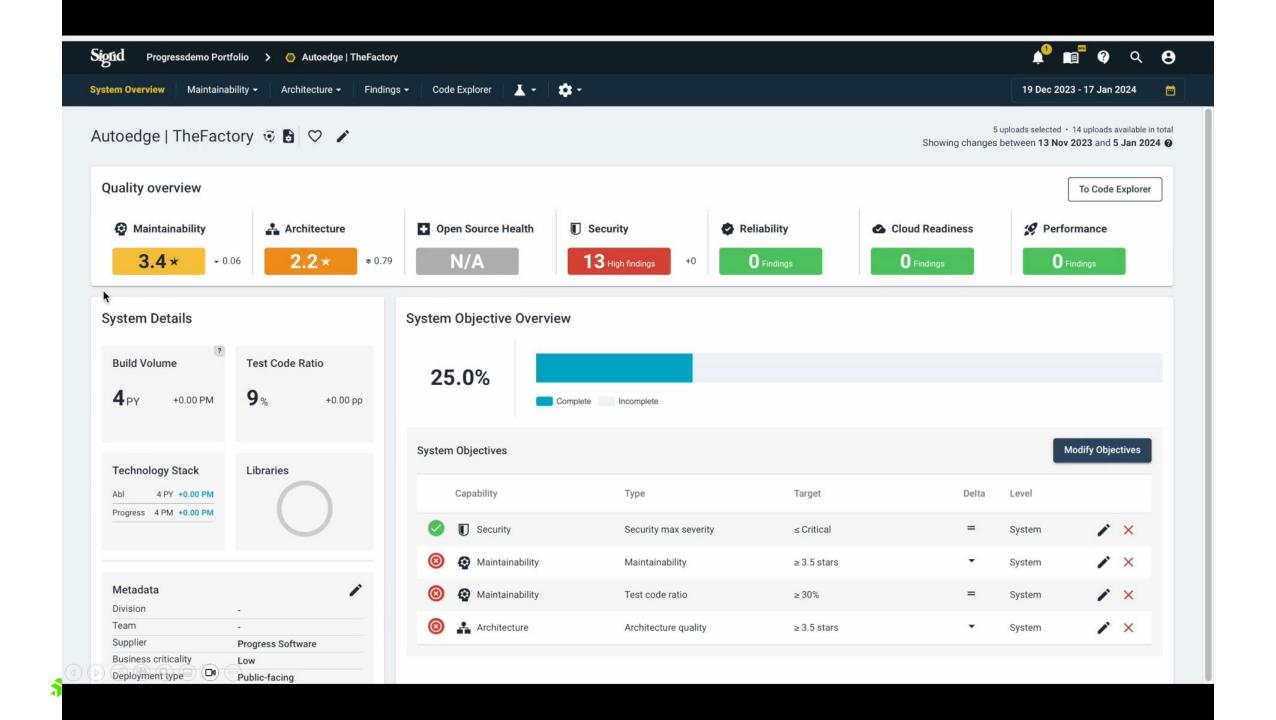
Modernization

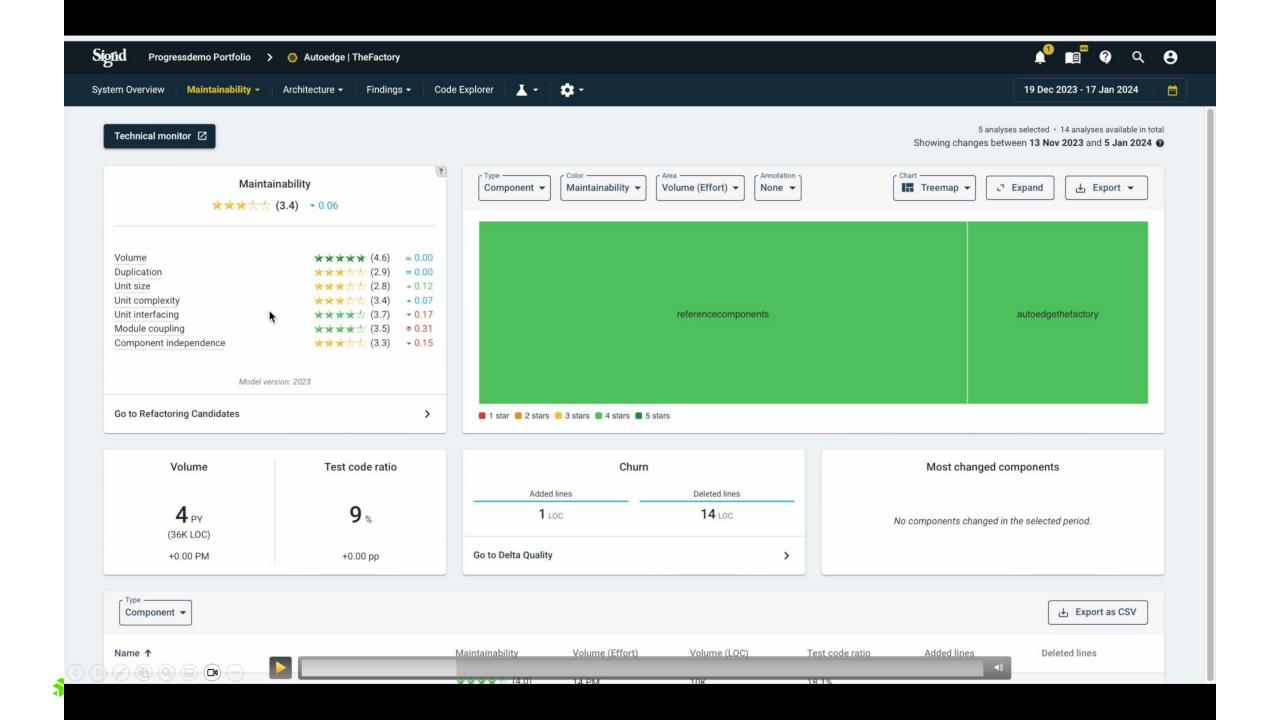


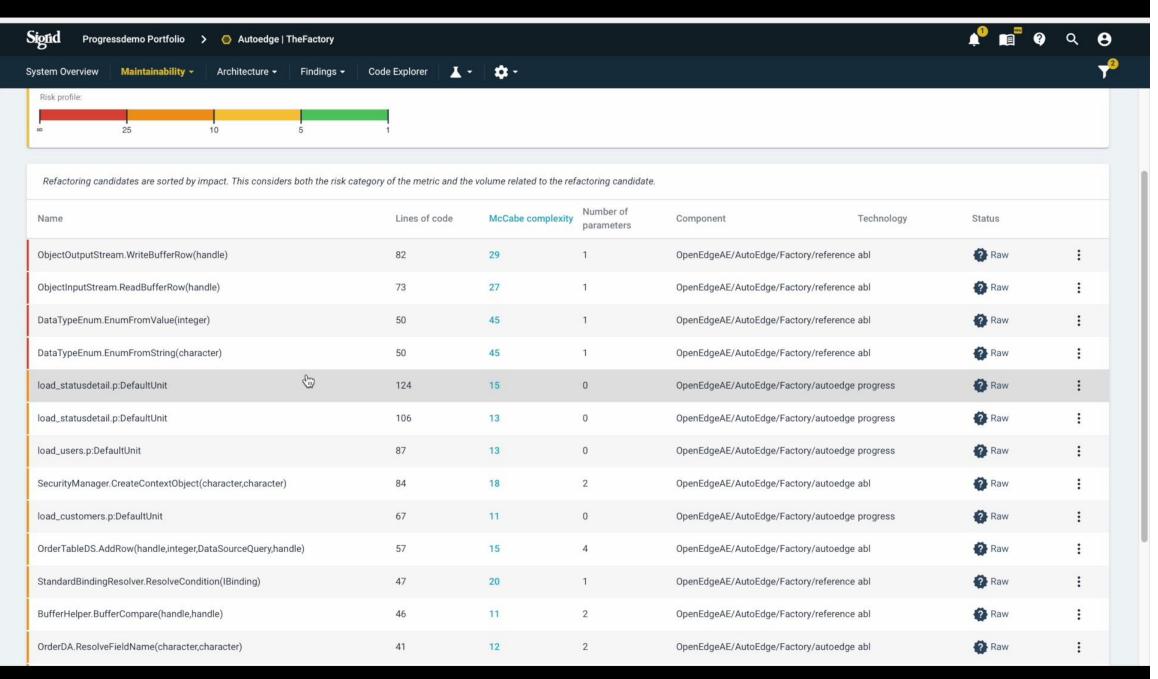
Stay ahead of the game: Modernization

- Fact-based Modernization Strategy
- Cost Estimation and ROI Analysis
- Track Modernization Approach in Sigrid



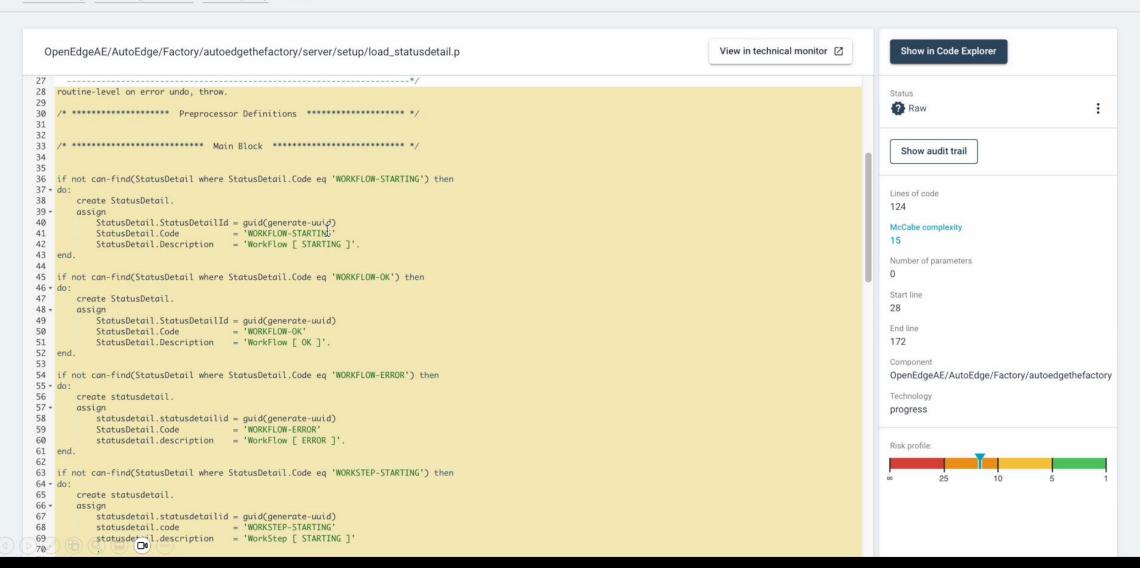






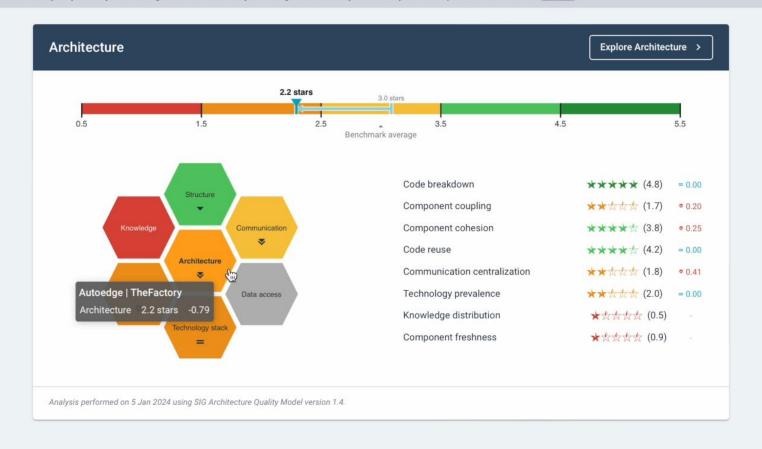
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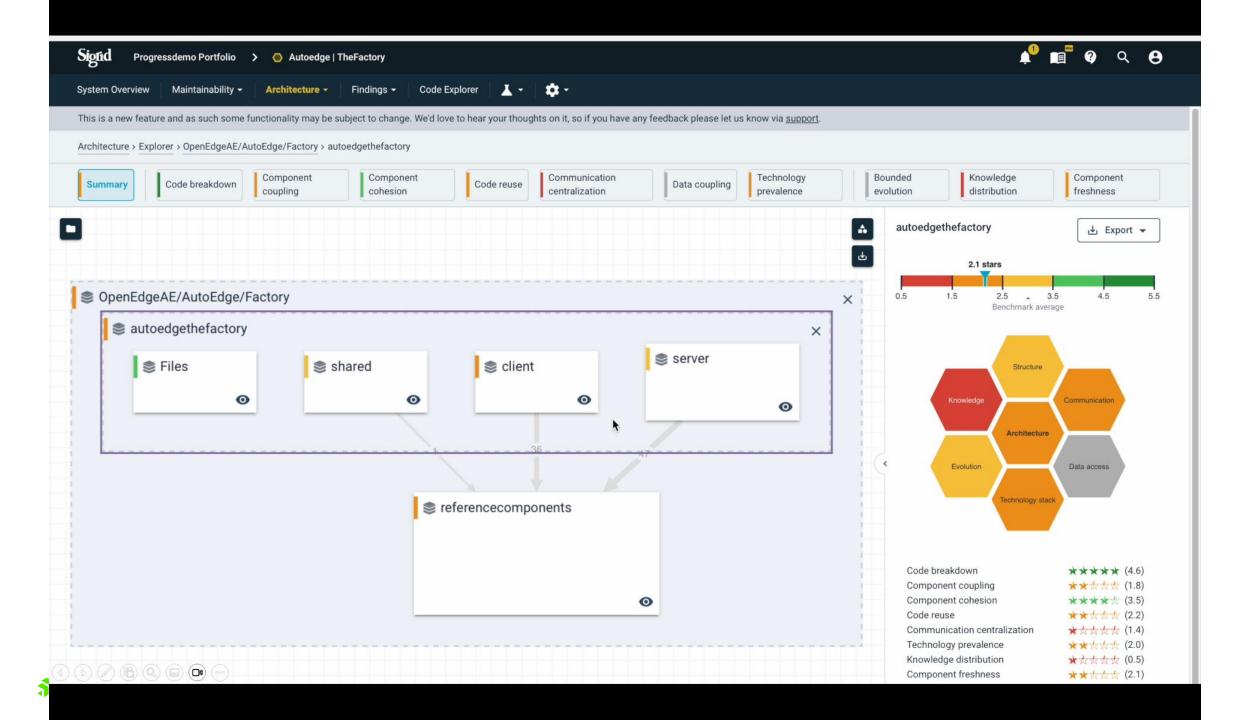
Maintainability > Refactoring Candidates > Unit complexity > Details





This is a new feature and as such some functionality may be subject to change. We'd love to hear your thoughts on it, so if you have any feedback please let us know via support.





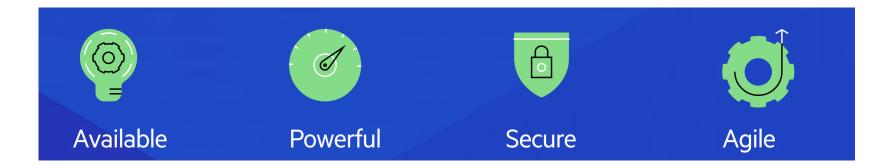
Maintainability

- Maintainability is impacted by
 - Code duplication
 - Procedure/method size
 - Code complexity
 - Unit interfacing



Progress & SIG









Fact-based insights drive innovation, manage risks and lower costs





The Future of OpenEdge



Future Needs

- Strategy
- Roadmap



Next LTS (13.x) – Target 2027 Source of Requirements

- Customer-submitted Ideas (https://openedge.ideas.aha.io/)
- Customer surveys and discussions
- Events such as PUG Challenge and the OpenEdge World Tour
- Community entries including the Customer Validation Program (CVP)
- Market research and consultation with industry analysts
- Feedback via Technical Support and Professional Services

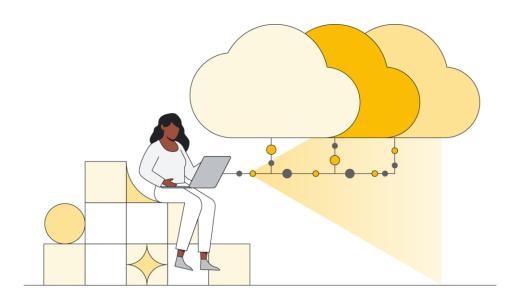


Looking Forward: What Is Important?

- Some topic areas researched in 2023:
 - Development tool trends
 - Generative AI
 - Priorities for the ABL language and OpenEdge Database
 - Cloud adoption and needs
 - Managing the production environment
 - Evolving security needs



Market Research - Cloud



75%

of respondents reported an <u>increase</u> in IT budget for public cloud.

Source: Forrester, 2022 Infrastructure Cloud Survey.

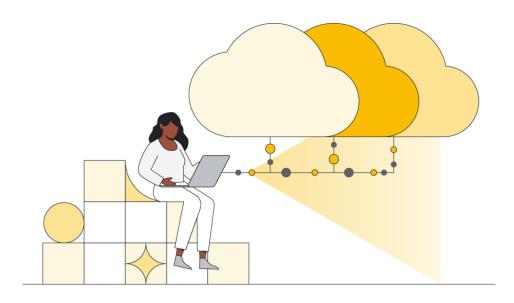
>50%

of enterprises will use industry cloud platforms to <u>accelerate</u> their business initiatives by 2027.

Source: Gartner® ebook, Gartner's 2023 Top Strategic Technology Trends, 2022.



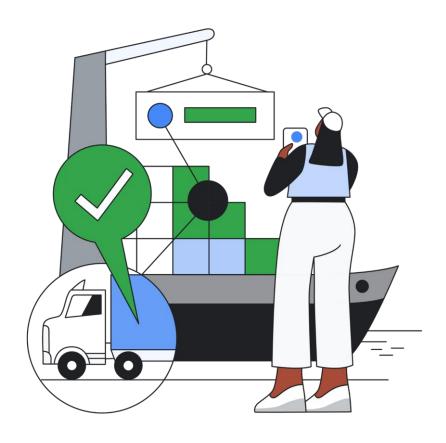
Voice of Customers - Cloud



- Need best-practice documentation / examples
 - "How to deploy to managed K8 cluster"
 - "How to manually install OpenEdge 12.2 in a Windows container"
- "OE12 PASOE Windows based container"
- "AppServer & DB in single container"
- "Support for MS-SQL DataServer in Docker"
- "Terraform module that can be used with AWS or Azure"
- "PDSOE in container"
- "Docker image as a base image for building containers"
- Etc.



Market Research - Security



Which of these is the top investment priority for your organization in 2023?

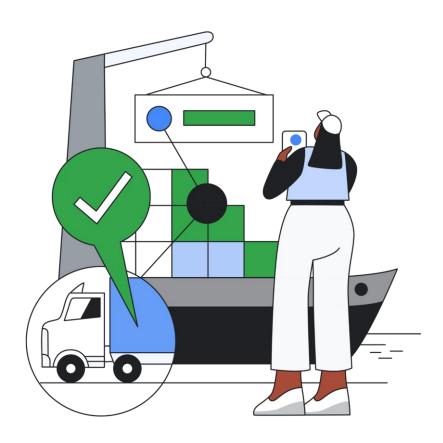
Cybersecurity	31%
Data management and/or data analytics	25%
Artificial intelligence & machine learning	20%
App and/or infrastructure modernization	12%
Productivity and collaboration	11%

Sample size 4,332

Source: M-Trends 2022, Mandiant.



Voice of Customers - Security



We rarely analyze for security threats

We rely on Progress and don't worry about security

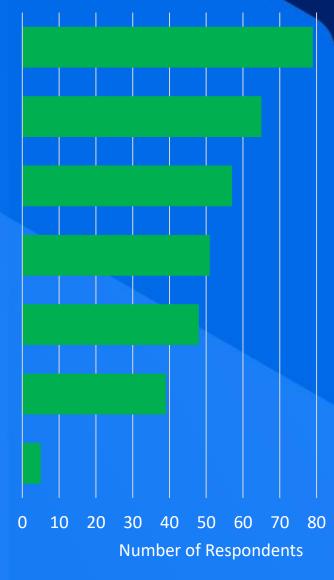
We regularly scan & understand our vulnerabilities

We use consultants to do security audits

We have a security team to drive security work

We have never done application security analysis

Security is not a concern for our software





Voice of Customers - DevOps



- "Might need to be modernized a bit to feel a bit fresher (Dev tools, templates, lightweight)"
- "Support multiple IDEs; why not Microsoft Visual Studio?"
- "LSP (Language Server Protocol) support is very important so people can be able to develop on an IDE of their choice"
- "Keep working on the Gradle-based, DevOps framework"
- "Need an intuitive OE resource management UI"
- "Single management web console required for distributed OpenEdge resources and monitoring"



Voice of Customers - General



- "More online database capabilities"
- "Online schema changes. It's better and better, but still – not enough"
- "Complete online schema / index maintenance"
- "Taking down the database for changes makes fully automated updates difficult and they must be scheduled for off-hours"
- "Statistics of index use, table use to find hot spots"
- Etc.

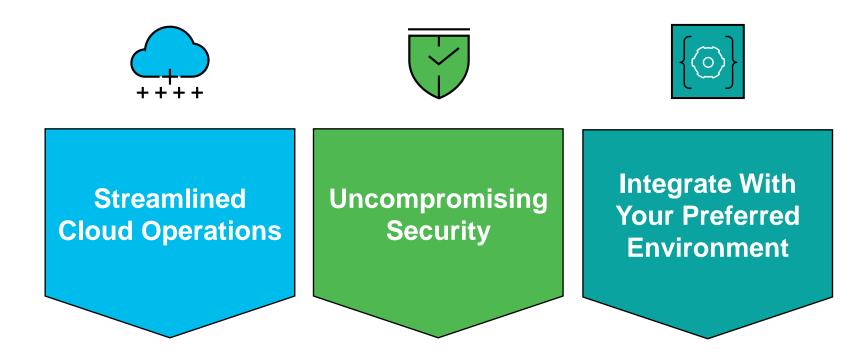




- Strategy
- Roadmap



The Next LTS Strategy



Platform Modernization

Developer Productivity

Performance

Environment Management

Continuous Operation







- Strategy
- Roadmap



Focus: Streamlined Cloud Operations



Cloud-agnostic Deployment

- Deployment packaginginstall on any Cloud, VM, Container
- On-demand license files
- Upgrade with minimal/no downtime

Cloud-ready Production Observability

- Open standards-based OE platform observability:
 - Metrics
 - Traces
 - Logs

Maximize Production Uptime

- DB admin online:
 - Index activate, deactivate, update primary
 - Rename/Drop Index, Table, Sequence
- Memory profiling improvements to find memory leaks

Runtime Orchestration

- Support Open Container Initiative (OCI)
- Kubernetes templates management for Containers



Focus: Uncompromising Security



Secrets Management System

 Centralized and secure store for DB credentials, keys, passcodes, certificates, etc.

OpenSSL FIPS 140 Provider Module

- Assist in compliance for US FIPS 140
- Cryptographic modules for deployment/use in a sensitive but unclassified environment

Deprecate OECH1 Encryption Cipher

- It is no longer secure
- Affects SQL Client and Utilities, and DataServers
- Stronger encryption algorithms support in AVM/ ABL/SQL...

Certificate Authority (CA) Certificates

- Use certificate store supplied by the OS
- Distribute wide range of certificates
- Simplify certificate management

Secure Deployment

- Prevent compiling in a production environment
- External Security Admin Mgr (ESAM) enhancements
- Secure OE Executables from OS Command Injection



Focus: Integrate With Your Preferred Environment



Development Flexibility

- ABL development in VS Code
 & other IDEs supporting LSP
- Expanded CI automation via OpenEdge DevOps Framework

3rd Party Tools

- Support a variety of APM tools for monitoring
- Utilize a Secrets Mgmt.
 System of choice
- OpenAPI (Swagger) standards improvements

Ease of Deployment

- Deployment packaginginstall on any VM via configuration scripts
- On-demand license files
- Upgrade with minimal/no downtime



Solid Foundation



Platform Modernization

- Stay current with O/S & library dependencies
- CI/CD via OE DevOps Framework
- Simplified installation

Environment Management

- Server lifecycle management for improved scalability & resource utilization
- Easy security configuration
- OpenEdge observability (OECC) enhanced capability

Developer Productivity

- User-defined Generics
- Annotations in Reflection
- Generative AI coding assist
- Memory Profiler enhancements

Platform Scalability

- Easy to configure & deploy multiple Server Instances
- PASOE horizontal scalability

Performance

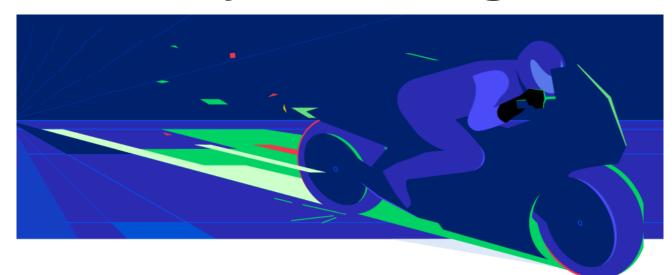
- Compile-time DB schema cache; no temporary DB required
- Profiler-guided compiler optimization
- Enhanced application trace metrics via OpenTelemetry
- Pro2 bulkload multi-threading

Platform Availability

- Metrics on 24x7 availability of Servers
- Auto management of Certs no downtime



Summary – Building For The Future



- This roadmap describes initiatives for the OpenEdge 13.x LTS Release
 - The timeframe is approximately 3 years after OpenEdge 12.8
- The key focus areas include Cloud, Security and Integration
- Plus, many other features as we continue to strengthen the foundation





Don't See Your Favorites

Feature?

Submit and vote on ideas!

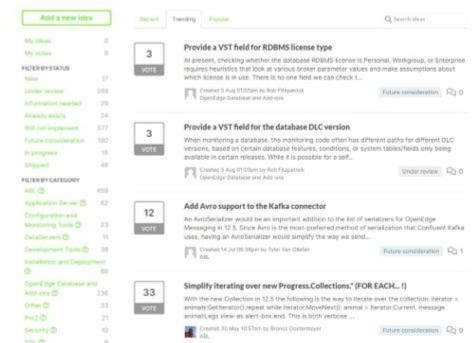


https://openedge.ideas.aha.io/



OpenEdge Ideas

Your portal to submit new ideas (enhancement requests) for Progress OpenEdge. Anyone can submit and vote on ideas, and these will be reviewed and prioritized by the Product Management team in accordance with the published ideasion Policy. If you submitted or subscribe to an idea, you will get automatic email notifications of comments and significant status chances.



Progress*

Join the CVP! OpenEdge Customer Validation Program

Actively influence the developer experience and future enhancements of Progress OpenEdge!

Get Access to:

Roadmap surveys
Usability reviews
Pre-release software

Virtual open houses
Quarterly objectives
Sprint reviews

https://www.progress.com/openedge/customer -validation-program



