Progress® OpenEdge®

OpenEdge RDBMS Advanced Enterprise Edition

WHITEPAPER

Overview

Rapid changes in today's business environment require infrastructure software powerful enough to keep pace and effectively handle intensive database needs.

The Progress® OpenEdge® Advanced Enterprise Edition (AEE) delivers an innovative solution for on-premises, cloud or hybrid computing and application production. It's an affordable, all-in-one package that keeps your security needs front and center.

Organizations can achieve scalable database performance, reliability and 24x7x365 availability using our relational database solution.

The platform's comprehensive multiprocessing environment supports thousands of concurrent users and terabytes of data.

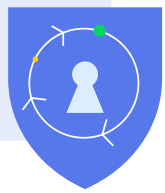
If your current systems can't meet those demands, it might be time for a change to something better.

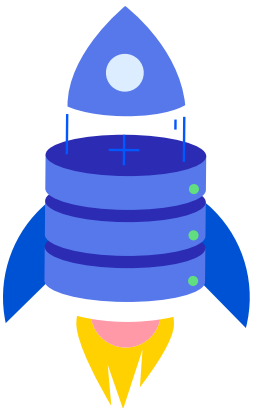
HIGHLIGHTS

- Total data management with the industry's lowest cost of ownership
- High perfomance, availability and the ultimate in reliability
- Extensive scalability with virtually unlimited data storage capabilities
- Mission-critical production systems that scale linearly with SaaS/Cloud user demands
- Easy maintenance, even for the most complex virtualized infrastructure expectations.

FEATURES

- Quick identification and saving of data changes
- Always on, secure disaster recovery
- At-rest data encryption
- Multi-tenant embeddable, relational database
- Browser-based monitoring and management tools
- Flexible table partitioning





What It Does

The Advanced Enterprise Edition (AEE) of the OpenEdge Relational Database Management System (RDBMS) easily grows as your business expands. It has all the functionality of the OpenEdge Enterprise database plus the functionality of six enterprise level data management add-on products, all for less than it would cost to buy the systems separately.

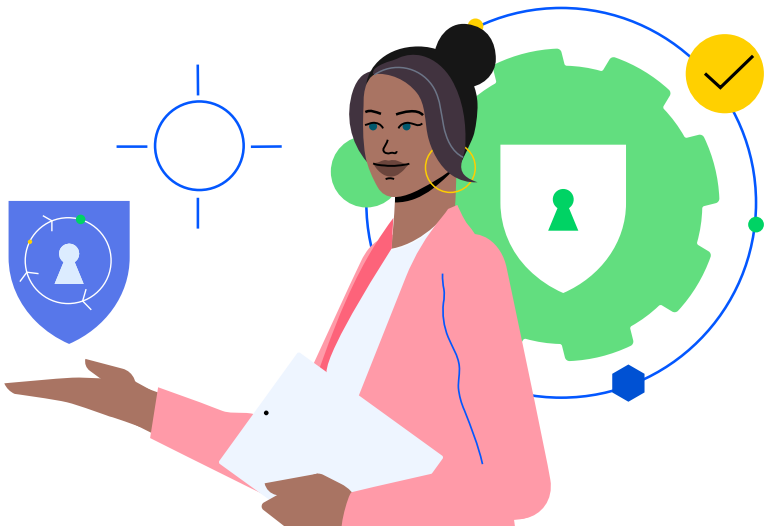
Control ordering and installation through a single serial number and control codes for a streamlined process and greater business efficiency.

Six-in-One Solution

The enterprise RDBMS is a multi-user relational database engine designed to support high volume, distributed, enterprise-level applications. It is also available as part of the Advanced Enterprise Edition, which includes six of our most widely used database management extensions. This enhances its functionality and optimizes the database to match your specific environment, data and business requirements.

It delivers:

- Proactive database monitoring and management
- Data replication for secure disaster recovery
- Scalable change data capture process for easy extraction, transformation and loading into a data warehouse, central repository or analytics tool
- Transparent data encryption to protect data at rest
- Reduced database administration overhead and increased resource sharing using multi-tenant tables
- Increased data availability and access performance using table partitioning to optimize data storage



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Key Benefits of OpenEdge AEE

Easy Installation with Full Compatibility

Build exactly what you need. OpenEdge AEE scales and extends as your business evolves.

Streamlined Compliance Management

Policy-based auditing is embedded within the application to meet compliance requirements without sacrificing performance. Role-based credentials help protect data integrity.

High Availability

Applications remain highly available 24x7x365 through a comprehensive, three-pronged approach to database backup, supported by data replication across one or more remote stand-by locations.

Near Real-Time Data

Track and save data changes to simplify ETL synchronization across multiple data sources, easily configured with no required application changes.

Lower Total Cost of Ownership

Efficient data management, deployment flexibility and great scalability, enable customers to operate with reduced IT resources. This lowers costs and keeps your database running reliably

Key Features of OpenEdge AEE

OpenEdge Enterprise RDBMS

The unique combination of power, flexibility and ease of operation makes the OpenEdge platform ideal for a wide range of commercial and data processing applications. It provides robust database services across both development and deployment environments.

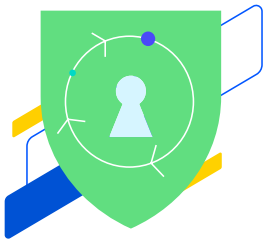
As the foundation for the Advanced Enterprise Edition, it delivers:

- **Linear scalability** that supports real-world applications with over 20,000 concurrent database users, with flat sub-second response times
- **High throughput** of over 600,000 transactions per minute handling virtually any transaction workload
- **Optimized performance** through caching terabytes of data into memory
- **Unlimited data storage** within a single database, accessible through a browser-based dashboard

OpenEdge Change Data Capture

Businesses rely heavily on their data. But it can be complex and time-consuming to keep data up-to-date across multiple sources. Since accurate data is critical to business success, it's essential to efficiently capture, export and synchronize data changes to improve visibility and productivity.

OpenEdge Change Data Capture helps organizations to quickly identify, track and save data changes in the OpenEdge RDBMS. This scalable process supports efficient data extract, transform and load (ETL) to external systems like data warehouses or analytics applications. Captured data remains in relational form in the source database, enabling flexible ETL design using both Advanced Business Language (ABL) and SQL.



OpenEdge Transparent Data Encryption

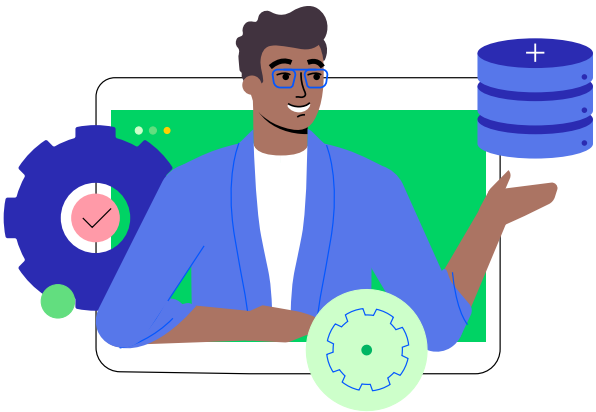
Businesses face growing security risks, often because of inadequate preparation and underestimated vulnerabilities. Protecting data at its source is a crucial component of any strong security strategy. OpenEdge Transparent Data Encryption (TDE) provides a comprehensive, out-of-the-box solution that uses standard encryption libraries and key management to secure data at rest.

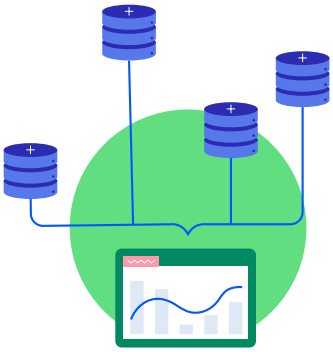
TDE protects data stored on disk, in backups, audit archives and binary dump files. It supports a range of encryption ciphers including AES, DES and DES-3, giving users the flexibility to balance performance needs with encryption strength. Applications typically continue to run at full speed, with less than 2% performance impact during encryption and decryption.

TDE also supports compliance with key industry regulations, such as:

- **Payment Card Industry-Data Security Standard (PCI-DSS)**
- **Sarbanes-Oxley (SOX)**
- **Health Insurance Portability and Accountability Act (HIPAA)**
- **General Data Protection Regulation (GDPR)**

While these regulations are mandatory in certain industries, every organization benefits from strong data protection. With TDE, you can selectively encrypt data by table, index or field. It includes policy-based tools and a secure encryption key store separate from the database. When combined with Progress OpenEdge and Advanced Business Language (ABL) security features, TDE helps protect data through integrated authentication, authorization and auditing.





OpenEdge Table Partitioning

Traditional table storage keeps the entire table in a single location. This slows queries and complicates maintenance. OpenEdge Table Partitioning improves efficiency by dividing tables into multiple, self-contained partitions. This approach enables queries to access only the necessary data and supports partition-based maintenance, enhancing both concurrency and processing performance.

Table partitioning enables you to optimize data storage by leveraging your understanding of data and access patterns. Properly partitioned tables limit unnecessary data access and use pruning techniques to improve query performance. Partition isolation enhances availability by enabling different operations to run simultaneously. Maintenance is simplified as database utilities operate at the partition level, focusing on what matters most.

OpenEdge Multi-tenant Tables

OpenEdge Multi-tenant Tables are designed to make shared tenancy fast, easy and transparent. Multiple tenants—whether separate companies or divisions within a company—share a single instance of the application, database and infrastructure.

Each multi-tenant table uses a single schema definition shared across all tenants, with the ability to store data in separate physical locations. This means tenants can be stored in separate storage areas, resulting in physical separation through tenant-specific data partitions.

Multi-tenancy shares infrastructure to provide economies of scale with one update for all tenants in each of the scenarios below:

- **Application updates**
- **Database schema updates**
- **Shared data (e.g., postal code table)**
- **OpenEdge version updates**

OpenEdge Replication Plus

Enterprises must protect their data from various risks, including system failures, user errors, database corruption and disasters. A crucial part of any disaster recovery plan is regularly backing up and restoring databases. OpenEdge Replication continuously replicates data from your production database to one or two target databases. During a failure or downtime in the production database, a replica can take over, maintaining availability and eliminating the database as a single point of failure.

OpenEdge Replication offers two models:

1. **Single-target replication:** The source database updates a single target database. If the source fails, the target becomes the new source. When the source is restored, it can then sync back to the original setup.

2. **Replication set:** The source database updates two target databases. If the source fails or requires maintenance, the primary target takes over as the new source and continues replicating to the secondary target, maintaining continuous replication. This model provides enhanced redundancy and continuous operation.

Additionally, OpenEdge Replication Plus enables you to run read-only reporting applications on the replica databases, reducing the load on your primary production database.

OpenEdge Management

OpenEdge Management (OEM) is a comprehensive systems management center that provides visibility, analysis and proactive monitoring of critical information assets. It helps improve efficiency, reduce the cost of managing an OpenEdge environment and maintain high availability and performance.

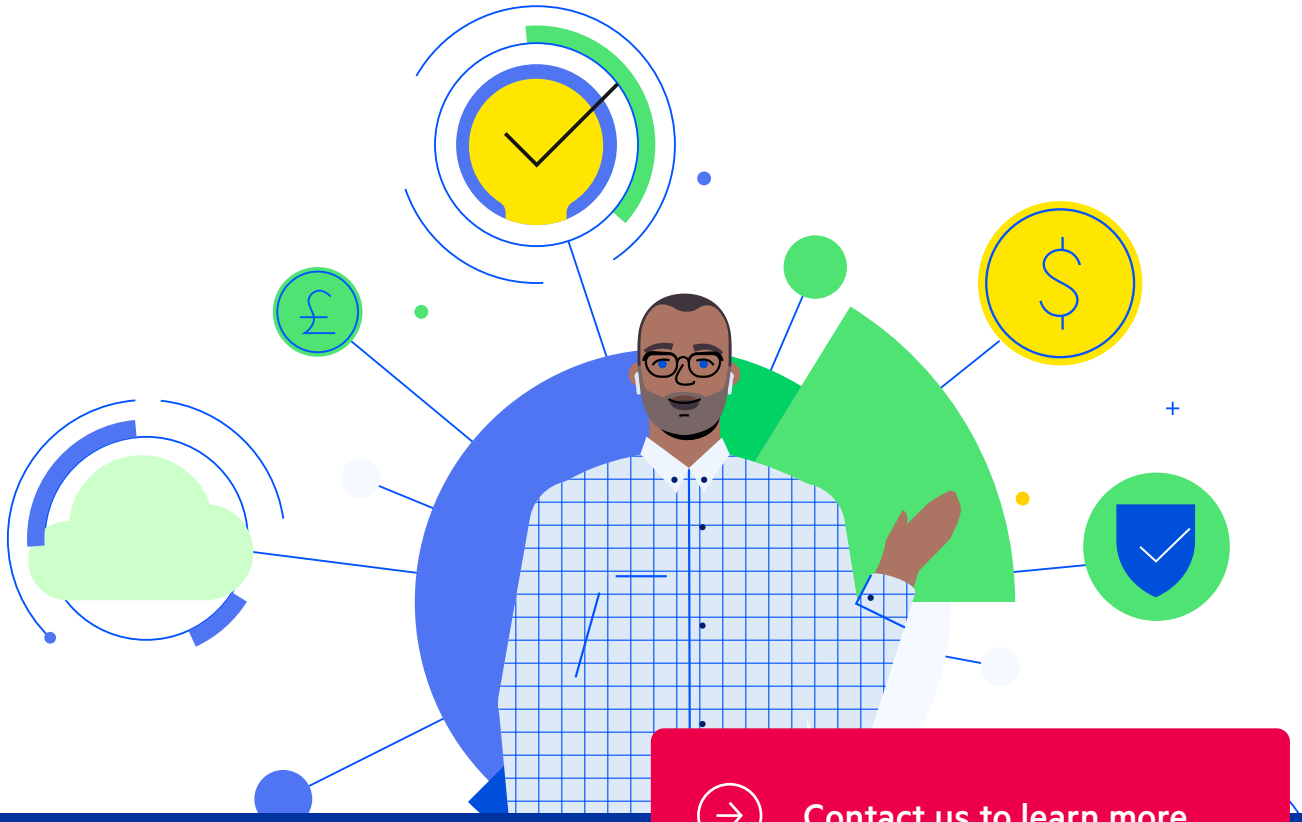
With OEM, IT teams can monitor and maintain applications from anywhere, tracking real-time database usage and proactively troubleshooting issues. This supports customer satisfaction and helps meet service level agreement timelines. OEM also stores historical data in a trend database, enabling effective capacity planning based on an organization's own data. This makes it a key component of any disaster recovery and business continuity plan.

Summary Comparison: Advanced Enterprise, Enterprise and Workgroup

The following table shows the primary features of the different OpenEdge RDBMS editions.

FEATURE	ADVANCED ENTERPRISE	ENTERPRISE	WORKGROUP
Transparent Data Encryption (TDE)	✓	Add-on Purchase	X
JTA coordinated X/Open distributed transactions	✓	✓	X
ABL coordinated distributed transactions	✓	✓	✓
Audit Event Logging *	✓	✓	X
Enhanced multiprocessor support configuration parameters	✓	✓	X
Management Console for reporting and alerts	✓	Add-on Purchase	Add-on Purchase
Asynchronous I/O processes	✓	✓	X
Asynchronous checkpoints	✓	✓	X
Secondary buffer pool	✓	✓	X
Quiet point for split-mirror or snapshot backups	✓	✓	X
Table Partitioning	✓	Add-on Purchase	X
NFS mounted data storage volumes	✓	✓	X
Type II Data Areas	✓	✓	✓
Large files for data storage**	✓	✓	✓
Large files for backup and data dumps	✓	✓	✓
Multi-tenant tables	✓	Add-on Purchase	X
Selectable data block size	✓	✓	X
Replication to a copy	✓	Add-on Purchase	Add-on Purchase
Read-only access of a copy	✓	Add-on Purchase	Add-on Purchase
Change Data Capture	✓	Add-on Purchase	Add-on Purchase

*Auditing is supported in the Workgroup database, but it can affect performance if used. It is recommended for use in Enterprise only due to availability of background processes.
** Large file support in the Workgroup database is available in OpenEdge 12.6 and later. Large file support in the Workgroup database is not available in OpenEdge 12.5 and earlier.



Contact us to learn more.

About Progress

Progress Software (Nasdaq: PRGS) empowers organizations to achieve transformational success in the face of disruptive change. Our software enables our customers to develop, deploy and manage responsible AI-powered applications and experiences with agility and ease. Customers get a trusted provider in Progress, with the products, expertise and vision they need to succeed. Over 4 million developers and technologists at hundreds of thousands of enterprises depend on Progress. Learn more at www.progress.com

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