

# Teradata and Revolution Analytics

ALLIANCE PARTNER



## For the Big Data Era, An Analytics Revolution

### Enterprise-Class R for Massively Parallel Analytics in Teradata Database

R is among the most widely used types of data analysis software in the world. Free and open source, its vibrant community of approximately 2 million users and contributors has created a huge library of algorithms for data access, manipulation, analysis, and visualization. This, along with R's proven power and reliability, has made it an attractive option for any enterprise that understands why big data exploration and predictive analytics are essential components in modern business success.

Yet until now, R users have not been able to take full advantage of R's capabilities, because they have lacked an out-of-the-box solution for easily running R in parallel. Doing so—running R at scale and in-database—enables R users to uncover answers from huge data assets in near real-time.

That's what the partnership between Revolution Analytics and Teradata delivers. It brings enterprise-class R—Revolution R Enterprise™ (RRE)—in database for massively parallel analytical processing inside the Teradata platforms.

### The Benefits for Your Business

The partnership and implementation of RRE for Teradata Database offers five essential benefits to your business:

#### Faster Results

RRE operates in parallel, in database. This eliminates the need to move data to a middle tier for analysis, thus dispensing with more than half of the typical analytics cycle. Furthermore, in-database operation brings computational parallelism, which dramatically accelerates the delivery of results from your data.

#### Enhanced Precision and Analytical Power

The computational performance of RRE scales linearly with system size, enabling developers to run more—and more sophisticated—analytic models on larger sets of

your company's data. This facilitates deeper and more reliable data exploration, faster model execution, and finer segmentation, resulting in considerably faster and more predictive analytics.

#### Self-Service Analytics

Transparent in-database execution reduces dependence on IT staff to move data, freeing developers to pursue more forward-thinking projects, including developing applications that enhance big data discovery.

#### Reduced Costs

Based on open source R, RRE provides higher performance per unit cost than competing solutions. Moreover, accelerating analytics with in-database processing also reduces the costs and labor associated with the need for additional data marts. R is also widely known and taught, broadening the available talent pool, reducing training burdens, shortening ramp-up time and cutting project cost.

#### Reduced Risk

Commercial support by Revolution Analytics' R experts reduces project risk.

### How Revolution R Enterprise and Teradata Work Together

Success with predictive analytics, modeling, machine learning, and big data exploration all depend on user-friendly technology to provide your staff the tools they need to succeed.

RRE supplies open source R and parallelized analytical algorithms that run in the Teradata Database. There is no need to move the data. Programmers use the Revolution Analytics integrated development environment (IDE) on a workstation or laptop to launch R commands or scripts, and then transparently execute them in Teradata from their workstations or laptops. The R language is unchanged, as programmers use standard R data frames to manipulate the data directly or embed SQL—whichever they prefer.

**TERADATA.**

In addition, RRE for Teradata includes a library of Parallel External Memory Algorithms (PEMAs) that help you achieve the highest possible performance. PEMAs are pre-built, parallelized versions of the most common statistical and predictive analytics algorithms that run directly in parallel on the Teradata nodes. They:

- Combine memory-based and disk-based storage to process data that exceeds available physical memory.
- Parallelize execution to spread computation across all nodes in the Teradata Database.
- Move the execution of analytics to the data eliminating the data movement.

Users of RRE also have access to an array of contributed open-source R algorithms made available through the Comprehensive R Archive Network (CRAN) repository. Developers can include these algorithms in their R scripts and run them on multiple Teradata nodes.

Moreover, installation and administration only require standard Teradata tools. Teradata Workload Manager provides load balancing and task management, thus ensuring no overloading of the system. Furthermore, Teradata Data Lab provides analytic sand boxes that enable developers to experiment without having to worry about the effect on day-to-day operational use. Access to Revolution R Enterprise is authorized and authenticated using standard security capabilities in the Teradata Database, thereby assuring information protection while minimizing disruption for system administrators.

Finally, the Teradata and Revolution partnership complements other analytical applications by providing a lower cost solution for exploratory analytics and predictive modeling, while ensuring scalability that extends business intelligence, visualization tools, and custom applications to users throughout your organization.

## A Powerful Partnership

Teradata helps companies get more value from data than any other company. Our big data analytic solutions, integrated marketing applications, and team of experts can help your company gain a sustainable competitive advantage with data. This is because the Teradata Unified Data Architecture™ (UDA) is the only truly integrated

analytics solution that unifies multiple technologies into a cohesive and transparent architecture by leveraging the best-of-breed and complementary values of the Teradata Database, open source Hadoop, and the Teradata Hadoop Appliance. A team of data experts with deep industry experience supports the UDA.

Revolution Analytics supports the Teradata UDA by delivering highly scalable, advanced analytics software across the UDA platforms at favorable price points as compared to existing solutions. This provides the user with flexibility to develop R programs on one environment and deploy on the other. By building upon open source R—and innovating in big data analysis, integration, and user experience—Revolution Analytics meets the demands and requirements of modern data-driven businesses.

The company has taken the R language to unprecedented levels of scale, capacity, and performance, enabling statistical analysis of very large data sets in a fraction of the time of legacy products—all without requiring expensive or specialized hardware. For enterprises that want to deploy their analytics solutions to large user populations, RRE brings structure, control, governance, and support to open source R. RRE also features a visual development environment that enables faster, more accurate R programming for developers.

## Don't Compromise

As data-driven companies seek to compete and win in the era of big data, they must find cost-effective solutions that don't compromise their chances for success. Increasingly, many companies have begun to understand the potential of R to deliver the analytics they need, but have been waiting for an enterprise type solution with parallel, in-database capabilities.

The Teradata and Revolution Analytics partnership delivers that solution—and more. Users get their enterprise-class R analytics, but also get Teradata, which offers the finest massively parallel processing platform in the world and a unified data architecture that takes advantage of big data in a way that no other technology can match.

For more information about how Teradata and Revolution Analytics can help your business, contact your Teradata representative, or visit **Teradata.com**.

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