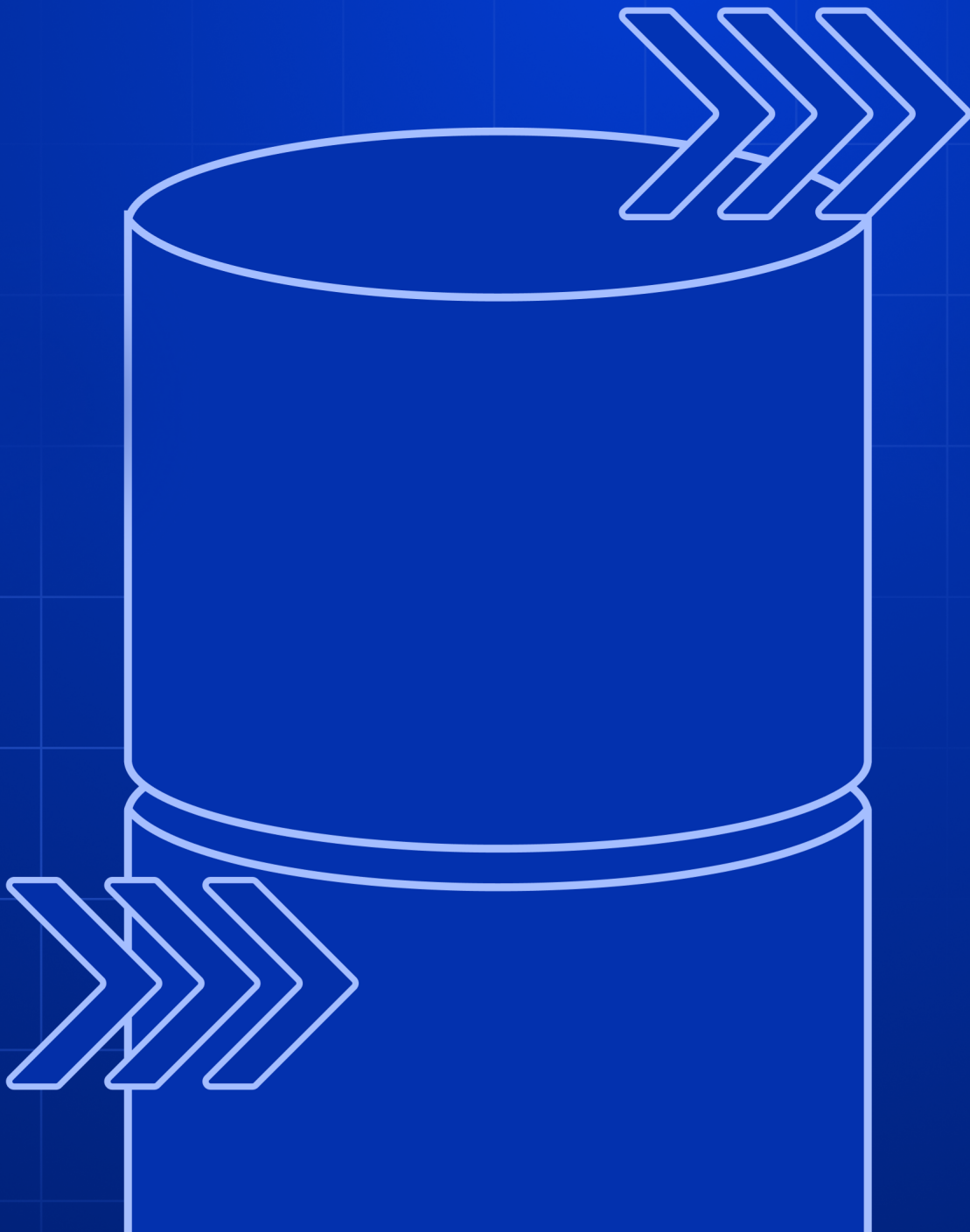




# More Control, Better Performance: The Business Case for Tessell over RDS for SQL Server



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# Executive Summary

As enterprises modernize their IT landscapes and embrace cloud-first strategies, Microsoft SQL Server continues to be a cornerstone for critical business applications. However, running and maintaining SQL Server databases in the cloud can still be complex and costly, involving high operational overhead, license management challenges, and the need for continuous performance tuning and high availability configuration. Amazon RDS for SQL Server, the default managed option for running SQL Server on AWS, simplifies database management but introduces significant technical 'guardrails' that can be deal-breakers for complex enterprise workloads.

Tessell brings a transformative approach to running SQL Server databases on Amazon Web Services (AWS) infrastructure. By combining AWS's scalable, secure cloud infrastructure with Tessell's database management capabilities, organizations can achieve the agility of a fully managed service while retaining the control, compliance, and performance that enterprise workloads demand.

Tessell has been named a 2025 Gartner® Cool Vendor in Data Management, recognized for redefining the multi-cloud DBaaS experience with unmatched performance, efficiency, and flexibility. This recognition follows its "Strong Performer" rating in Gartner's Voice of the Customer report, underscoring both customer trust and analyst validation.

Tessell conducted a study of a customer who is a leading provider of authentication and grading services for high-value collectibles, to explore the potential benefits and cost savings of running their SQL Server Databases on Tessell-managed AWS infrastructure versus RDS for SQL Server.

**Some of the benefits that led the customer to choose Tessell were:**

- **Infrastructure Savings:** Tessell reduced compute costs by 72% and storage costs by 74% leading to a combined infrastructure cost savings of 72%.
- **Core-License Efficiency:** Tessell delivered enterprise-grade High Availability for SQL Server Standard Edition without the need for the more expensive SQL Server Enterprise Edition licensing.
- **Operational Efficiency:** Tessell automated routine tasks, improving database management efficiency, reduced operational burden and increased productivity, thereby decreasing admin FTE costs by 30%.

72%

Reduction in  
Infrastructure Costs

30%

Reduction in Admin  
Costs

23%

Savings in Total  
Cost of Ownership  
(TCO)

129%

Return of  
Investments (ROI)

- **Unified Database Management:** Tessell provided a unified platform for automating routine database management tasks and a single-pane-of-glass visibility across all SQL Server workloads, freeing the database team from time-consuming manual tasks.

## Introduction

Amazon RDS for SQL Server, while offering simplified database management, has several structural constraints that sacrifice control, flexibility, and cost efficiency. This trade-off between control and flexibility for operational simplicity makes it unsuitable for complex, performance-critical, or highly customized SQL Server workloads.

While RDS for SQL Server is a good fit for small to mid-scale workloads, standard OLTP databases where minimal DBA overhead is required and cost is secondary to operational simplicity, it is less than ideal for large, performance-critical SQL Server workloads that need to be cost-optimized for the long-term.

Tessell-managed SQL Server on EC2 delivers managed-service convenience while preserving full SQL Server functionality, enterprise-grade flexibility, and long-term economic efficiency-making it better suited for complex, performance-critical workloads. Tessell abstracts away the operational burden of running SQL Server-covering provisioning, patching, backups, scaling, and failover-so enterprises can focus on application innovation rather than database administration. Tessell's features include:

**End-to-End Data Management:** Simple data processes from inception to production, boosting operational efficiency.

**Automation and Standardization:** Automates repetitive tasks and standardizes workflows, enhancing data quality.

**Enhanced Collaboration:** Facilitates teamwork, aligning data engineers and consumers with shared goals.

**Robust Monitoring and Analytics:** Provides real-time insights to proactively address issues.

**Agile Practices:** Supports agile methodologies enabling rapid adaptation to changing business needs, enhancing data delivery speed.

By integrating these capabilities, Tessell enables organizations to manage cloud-hosted databases with higher performance, reduced complexity, and lower costs.

"Tessell's ability to **automate and streamline complex data management tasks** that were once a key bottleneck for innovation and scale is like air traffic control for your databases."



**Dan Van Tran**  
Chief Technology Office, Collectors

# The Business Value of Tessell

Tessell is a multi-cloud database-as-a-service (DBaaS) platform that redefines enterprise data management with its comprehensive suite of AI-powered database services. By unifying operational and analytical data within a seamless data ecosystem, Tessell enables enterprises to modernize databases, optimize cloud economics, and drive intelligent decision-making at scale. Through AI and Conversational Data Management (CoDaM), Tessell makes data more accessible, interactive, and intuitive empowering businesses to harness the full potential of their data with ease.

Tessell was created to address a fundamental challenge: while cloud adoption has surged, managing enterprise databases in the cloud remains archaic and expensive. Tessell's fully managed, multi-cloud database platform eliminates these pain points by offering:

- Modern cloud DB platform for AI apps with vector extensions to popular DB engines and providing conversational query capabilities.
- High-performance, scalable cloud database compatible with PostgreSQL and MySQL, powered by patented technology to eliminate provisioned IOPS.
- A unified control plane for seamless management of multiple cloud providers, database engines, and infrastructures.
- Comprehensive data ecosystem, connecting mission-critical operational data with analytical/decision-making systems (data lakes, warehouses).
- Near zero RPO/RTO high availability & disaster recovery services for uninterrupted operations.
- Enterprise-grade security and compliance with custom policies.
- Lift & Shine for your data estate to achieve significant TCO reduction.

By improving operational efficiency, maintaining data integrity and security, and supporting informed decision-making, Tessell enhances organizational performance and resilience, leading to greater compliance and business continuity.



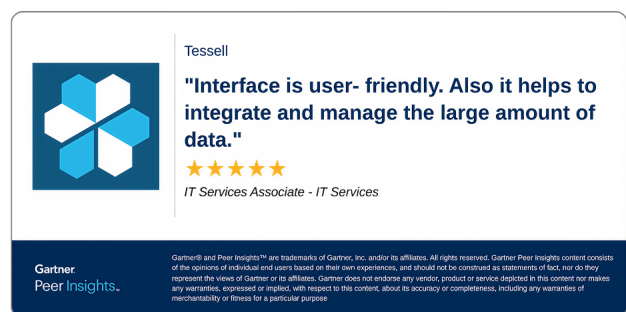
Tessell

**"Tessell is easy to integrate into any cloud or on-premises. And Tessell has 24/7 support for any issue or guidance with great engineers."**

★★★★★

*IT Services Associate - IT Services*

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Tessell

**"Interface is user-friendly. Also it helps to integrate and manage the large amount of data."**

★★★★★

*IT Services Associate - IT Services*

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Garner  
Peer Insights.



Tessell

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# What Differentiates Tessell from Amazon RDS for SQL Server

While Amazon RDS is the industry standard for general-purpose workloads, it has several hard ceilings compared to the high-performance flexibility of Tessell which manages SQL Server on EC2 instances.

## 1. Performance and Throughput Shortcomings

The architecture of RDS for SQL Server often hits bottlenecks that Tessell's EC2-based management bypasses.

- **IOPS Throttling & Metering:** In RDS, IOPS are often tied to the storage type (gp3/io2) and instance size, with strict caps. Tessell leverages EC2 instances with local NVMe storage (High Performance Compute shapes), which can deliver up to 321% higher IOPS compared to standard RDS volumes for the same workloads.
- **Storage Latency:** RDS uses EBS (network-attached storage). While reliable, it introduces latency compared to Tessell's ability to utilize instance-store NVMe in a managed way. Tessell's benchmarks often show significantly lower query response times (40–50% faster) for heavy write/read workloads.

## 2. Licensing and Cost Restrictions

Licensing is often the largest line item in the SQL Server budget. RDS has strict rules that can lead to "license leakage."

- **License Included (LI) vs. BYOL:** RDS SQL Server primarily operates on a "License Included" model for many editions. While BYOL is possible, it is less flexible than EC2. Tessell allows you to maximize SQL Server Developer Edition for non-production workloads, which is free for those use cases, whereas RDS often forces you into paid licenses for dev/test.

- **Consolidation:** RDS follows a 1:1 ratio (one instance = one license overhead). Tessell allow you to consolidate multiple databases onto a single large EC2 instance while still providing a "managed" experience, significantly cutting license costs.
- **Compute Over-Provisioning:** To get high IOPS in RDS, you often have to provision a larger instance than you need for CPU. Tessell decouples this, allowing you to pick high-performance storage without paying for unneeded vCPUs.

### 3. Administrative and Operational Constraints

RDS abstracts the OS, which is great for simplicity but a dealbreaker for specific enterprise requirements.

- **Lack of OS/Root Access:** RDS does not provide access to the underlying operating system. If your application requires third-party agents (security, monitoring, or specialized drivers), you cannot install them. Tessell provides the management of RDS but allows for OS-level flexibility when needed.
- **Database Limits:** RDS for SQL Server has a maximum of 100 databases per instance and a 256TiBs storage limit. Tessell on EC2 can scale past these limits, supporting larger multi-tenant environments or massive data warehouses.
- **Patching Control:** RDS forces maintenance windows and automated patching. While you can defer them, you don't have total control over the versioning or specific "hotfix" applications. Tessell offers "Standby-First" patching, ensuring near-zero downtime and allowing you to remain on specific versions for compliance.

### 4. Availability and Data Portability

- **Zero Data Loss:** While RDS Multi-AZ is robust, Tessell's "Availability Machine" is designed for zero data loss (RPO 0) across regions and even across different clouds.
- **Cloud Lock-in:** RDS is an AWS-proprietary service. Moving an RDS SQL Server to Azure or on-prem requires a full migration. Tessell provides a consistent control plane across AWS and Azure, making your database architecture "cloud-agnostic."

In summary, Amazon RDS for SQL Server prioritizes operational simplicity at the expense of control, compatibility, and transparency. Whereas Tessell-managed SQL Server on AWS delivers the convenience of managed service along with flexibility, cost-efficiency, and high performance.

# Customer Case Study

## Introduction

Collectors is a leading provider of authentication and grading services for high-value collectibles, operating industry-leading brands including PSA (trading cards and memorabilia), PCGS (coins and currency), WATA (video games), and Goldin (online marketplace).

Valued at \$4.3 billion with approximately \$750 million in annual revenue and over 1,100 employees, the California-based company has authenticated and graded over 75 million collectibles.

As Collectors finalized their data center migration to AWS, they required a database-as-a-service solution to automate day-to-day operations and cost-effectively manage their SQL Server infrastructure supporting critical business applications.

Tessell was brought in to not only optimize costs but also accelerate the company's ability to adapt its offerings, serving customers globally with greater speed, transparency and reliability. Considering this, Tessell conducted a study to explore the various savings and benefits of running the customer's SQL Server footprint on Tessell managed AWS versus Amazon RDS for SQL Server. Here are the findings of our study.

## Challenges Reported by the Customer

- **Escalating AWS RDS Costs:** Amazon RDS costs were on the rise due to premium IOPS/storage charges and restrictive instance sizing. With RDS contract renewals approaching and their SQL Server footprint growing, Collectors needed a cost-effective alternative without vendor lock-in.
- **Fragmented Database Operations:** Self-managed SQL Server instances across AWS EC2 lacked centralized management. Manual cloning, inconsistent data masking, and varied backup procedures created operational bottlenecks and compliance risks.
- **Performance Limitations and Licensing Constraints:** Collectors needed 1.6M IOPS for peak workloads, which Amazon RDS would deliver at prohibitive costs. More critically, SQL Server Standard Edition HA was unavailable in RDS, forcing costly Enterprise Edition licensing or accepting downtime risks.

# Reasons for Choosing Tessell

- **Superior Performance at Lower Cost:** Tessell's database-as-a-service platform on AWS with High-Performance Compute (HPC) NVME shapes a Tessell-exclusive feature delivered 1.6M IOPS, a 53x improvement from the baseline 30k IOPS, while significantly reducing infrastructure costs. Unlike Amazon RDS's rigid instance types, Tessell's flexible compute and storage separation allowed optimization for specific performance and cost requirements.
- **High Availability for SQL Server Standard Edition:** Tessell delivers High Availability for SQL Server Standard Edition by combining SQL Server Basic Availability Groups and replication technologies with automated infrastructure redundancy, orchestration, and failover management across availability zones. This allowed the organization to achieve enterprise-grade availability and resilience without the need for the more expensive SQL Server Enterprise Edition licensing.
- **Unified Database Management:** Tessell provides a unified platform that automates database provisioning, standardized data masking and cloning workflows, and a single-pane-of-glass visibility for monitoring, scaling, resiliency, and maintenance across all SQL Server workloads. These automated capabilities freed the database team from time-consuming manual tasks.

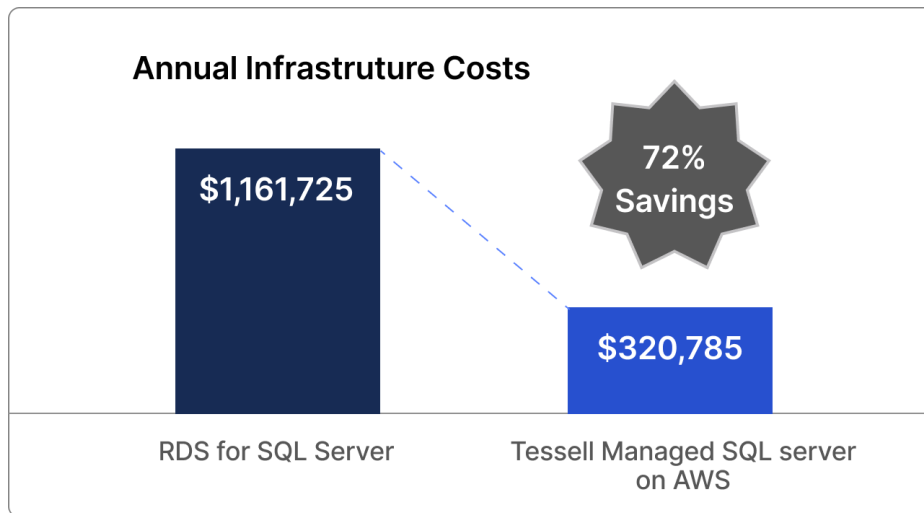
# Business Value Quantification

Our study compared the costs of running Amazon RDS for SQL Server versus Tessell-managed SQL Server DBs on AWS infrastructure.

The key cost savings drivers observed in the study were the following:

## 1. Infrastructure Costs:

Tessell-managed SQL Server DBs on AWS infrastructure helped customers reduce infrastructure costs by 72% compared to RDS for SQL Server.



A detailed breakdown of the infrastructure cost savings is listed below.

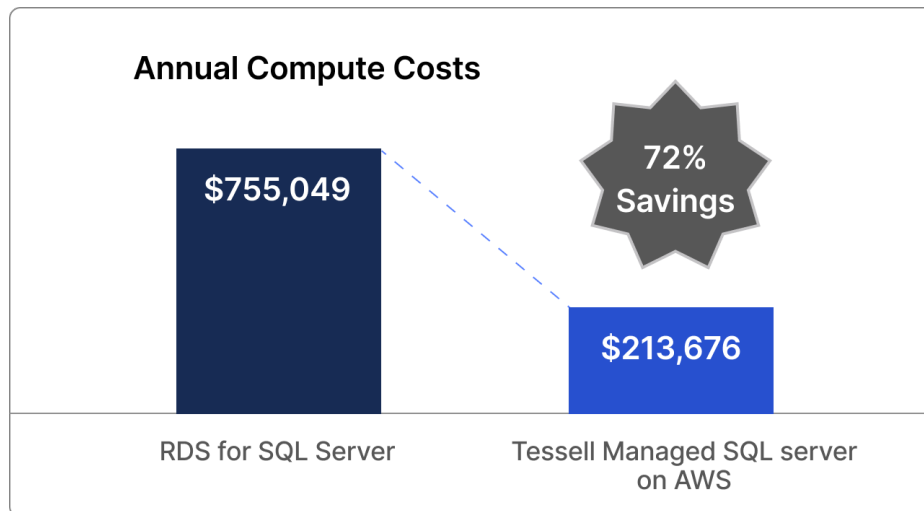
### a) Compute Savings

Tessell reduces compute consumption primarily through rightsizing, workload optimization, automation, and license efficiency. These savings are especially significant because SQL Server costs are heavily tied to vCPU-based licensing.

Tessell also enables organizations to achieve high availability for SQL Server by combining SQL-native replication technologies with automated infrastructure redundancy, intelligent resource scaling, and license-efficient architectures. This approach delivers enterprise-grade HA while significantly reducing the need to double compute capacity and SQL Server licensing costs.

In RDS, if high storage performance (IOPS) is required, you are often forced to provision a larger instance size (more vCPUs) just to get the required EBS throughput. Tessell utilizes EC2 instances with Local NVMe storage (HPC shapes). These instances provide millions of IOPS natively without "provisioned IOPS" fees or the need to upscale the CPU.

In our study by using Tessell-managed SQL Server DBs on AWS infrastructure the customer was able to reduce their compute costs by 72% in comparison to RDS for SQL Server.



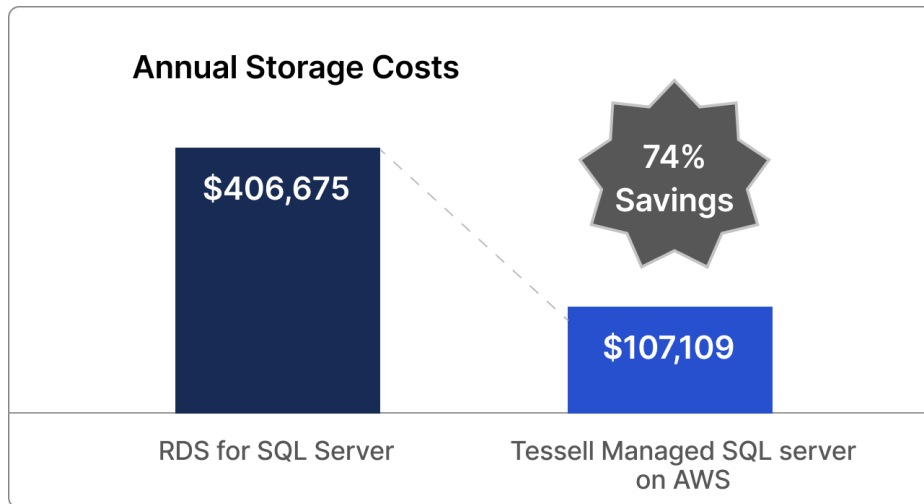
## b) Storage Savings

Tessell significantly reduces storage costs for SQL Server by eliminating the "IOPS Tax" and optimizing how data is protected and cloned. While Amazon RDS relies on EBS (network-attached storage) which can be expensive to scale, Tessell's architecture leverages the raw power of the underlying EC2 infrastructure.

In Amazon RDS, storage cost is often split between paying for the capacity (GBs) and performance (IOPS). For high-performance workloads (using io2 or gp3 settings), the cost of IOPS can actually exceed the cost of the storage capacity itself. On the contrary, Tessell utilizes EC2 instances with local NVMe storage. These drives are physically attached to the server and provide millions of IOPS at no additional charge which can lead to 3x–6x lower storage costs for performance-intensive databases.

Furthermore, RDS snapshots are stored in S3 but are billed based on the total size of the changed blocks. Over time, high-churn databases can rack up massive backup storage bills. Whereas, Tessell's decouples the primary storage (high-speed NVMe) from secondary storage (EBS/S3) and continuously streams logs to inexpensive object storage. These incremental, block-level backups that are highly compressed and deduplicated, significantly reducing the storage footprint of long-term retention and daily snapshots.

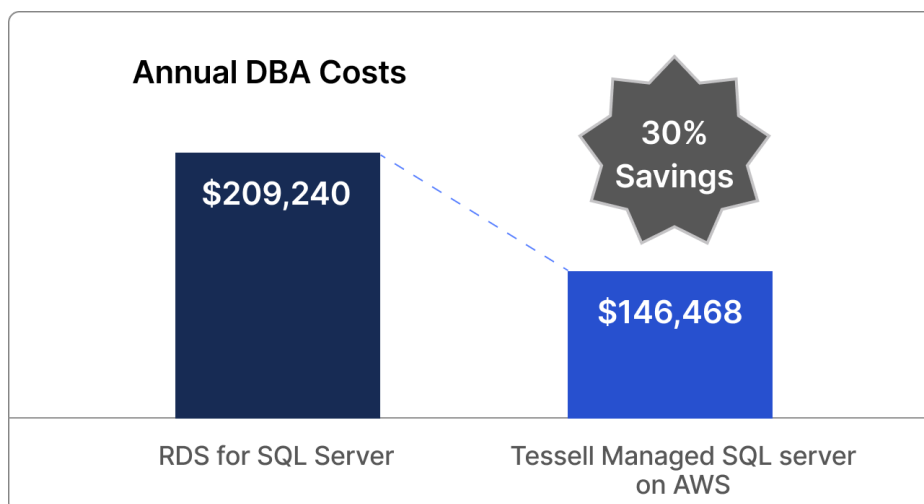
In our study, the customer was able to reduce storage costs of SQL Server databases hosted on Tessell-managed AWS infrastructure by 74% in comparison to RDS for SQL Server.



## 2. Admin FTE Savings

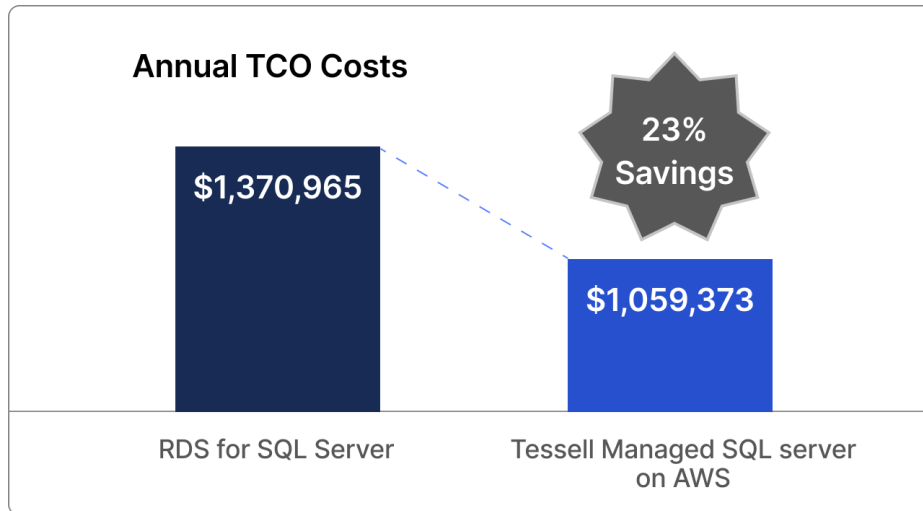
RDS is a managed infrastructure service. Whereas Tessell is a managed operations platform. Amazon RDS handles undifferentiated heavy lifting (provisioning underlying EC2, storage, networking) while the customer must handle all database administration. On the contrary, Tessell manages the database administration layer itself on top of the AWS infrastructure, which reduces the administrative overhead due to the automation of routine work. With Tessell, DBAs can provision databases quickly, automate repetitive tasks, and focus on strategic business solutions rather than manual administration. The self-service portal enables application developers to create databases independently, reducing dependence on DBAs. In short, RDS managed databases whereas Tessell manages database operations at scale, thereby significantly reducing admin costs.

The following is a snapshot of the Admin FTE savings realized in our study when comparing RDS for SQL Server versus Tessell managed SQL Server Databases on AWS infrastructure.



## TCO Savings Summary

As per our study, Tessell managed SQL Server Databases hosted on AWS reduced the annual total cost of ownership by 23% over Amazon RDS for SQL Server.



## TCO/ROI Financial Summary

#	Annual Cost with 1YR Reserved Instances	RDS for SQL Server	Tessell Managed SQL Server on AWS
1	Compute	\$755,049	\$213,676
2	Storage	\$352,172	\$46,032
3	Backup	\$54,503	\$61,077
4	SQL Server Licenses	\$0	\$350,509
5	Services	\$0	\$241,611
6	DBA FTE	\$209,240	\$146,468
	<b>Annual Total</b>	<b>\$1,370,965</b>	<b>\$1,059,373</b>
		<b>Cost saving with Tessell</b>	<b>\$311,592</b>
		<b>Saving%</b>	<b>22.7%</b>
		<b>ROI%</b>	<b>129%</b>

# Conclusion

While Amazon RDS for SQL Server abstracts the underlying infrastructure to provide simplicity, it often creates bottlenecks via expensive IOPS metering and strict licensing rules. Tessell transforms SQL Server management by delivering a fully automated, operationally intelligent platform that goes far beyond Amazon RDS's managed infrastructure model. Tessell delivers a superior managed SQL Server experience combining the full feature richness of self-managed databases with enterprise-grade automation.

Tessell shifts the paradigm from infrastructure management to outcome-based operations, enabling significant reductions in administrative overhead, risk, and total cost of ownership. Tessell effectively bridges the gap between RDS's limited managed service and the operational complexity of self-managed deployments, offering organizations the best of both worlds: complete SQL Server functionality with cloud-native automation and enterprise reliability.

"Tessell allowed us to take our three-person database administration team and give them the superpowers of a 30-person team, with the ability to add self-healing. This means that, if it detects an issue, it will determine what to do to fix it and try to fix it without having to involve a human. This helps us to grow quickly without having to spend in a linear or exponential fashion, which allows us to then invest that into more customer facing features or to grow the team."

- Dan Van Tran, Chief Technology Officer, Collectors

"Tessell is for companies aiming for significant cost savings on cloud infrastructure and Oracle/SQL Server licenses through efficient utilization. Organizations that find entry-level DBMS offerings like RDS to be insufficient in meeting their production requirements, but who want to maintain multi-cloud and multivendor flexibility."

- Gartner Cool Vendors in Data Management, August 2025



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Head, Product & GTM



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