

Scality RING and NeuralMesh™ by WEKA for unlimited scale, high-performance workloads



The challenge of working with large datasets for AI, HPC, genomics and data analytics is providing the right level of performance to keep data-hungry applications satisfied while providing scalable, flexible capacity to deal with the massive datasets at the right price point.

The Scality RING software-defined object storage and NeuralMesh™ by WEKA collaboration addresses this challenge. This solution delivers high-throughput, low-latency I/O for data-intensive applications, eliminating concerns about right-sizing the entire storage stack. It extends flash capacity, optimizing performance for hot data and offloading cooler data to more cost-effective storage. This makes it ideal for environments with large, aging datasets, including genomics, AI model training, fine-tuning, and inference, as well as media archives and analytics projects.

Scality RING with WEKA connector

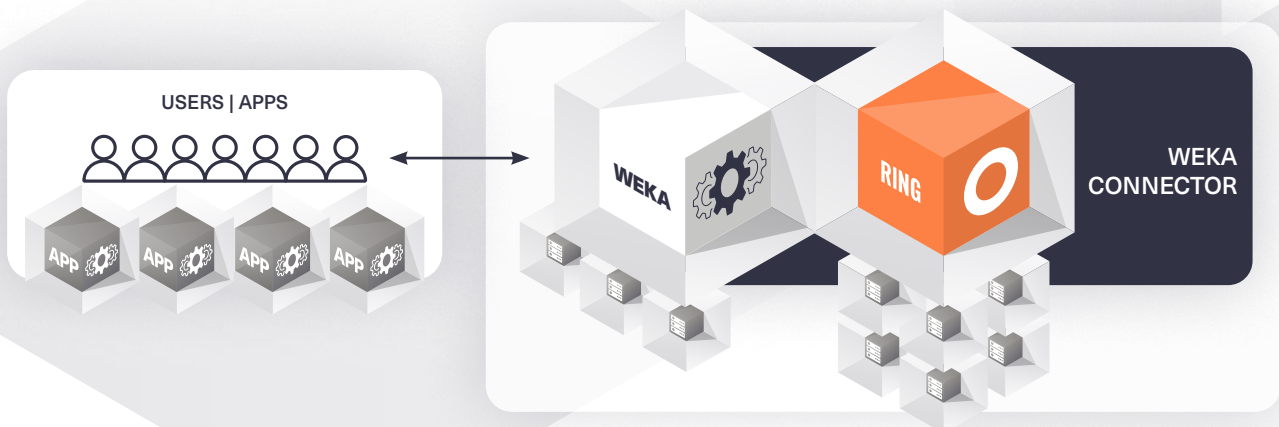
To facilitate optimal data transfer between the high-performance flash-enabled WEKA tier and the HDD-based RING capacity tier, Scality has developed an ultra-fast connection: the Scality RING with WEKA connector.

This lightweight, REST-based connector offers a native connection to RING data services. Its primary objective is to maximize data access speed between the two tiers. By focusing solely on data requests, as metadata operations are controlled by WEKA, the Scality connector significantly improves Time To First Byte (TTFB) — up to 10 times faster than traditional S3 storage — ensuring a continuous data flow between the archive and performance tiers.

Furthermore, the connector's lightweight design minimizes the hardware investment required for the RING connector layer compared to S3, all while upholding exceptional performance and capacity for the overall solution.

Highlights

- **Optimized performance:** New and active data resides on ultra-fast flash, ensuring performance for critical operations
- **Unified data access:** Users access all data as a single, high-performance data store
- **Cost efficiency:** Minimize flash capacity requirements to reduce storage costs
- **Scalable and affordable:** Achieve high performance and scale at a cost-effective price
- **Highly available archiving:** Synchronous stretched RING deployments offer 14x nines data durability



Tiering and snapshots

Scality RING, alongside the WEKA connector, offers organizations a comprehensive solution by supporting both tiering and snapshot capabilities from WEKA.

Tiering: WEKA seamlessly integrates with Scality RING object storage, providing a tiered storage solution for AI/HPC workloads. Frequently accessed file data and all file metadata reside on WEKA's high-performance flash tier, enabling instant namespace browsing while maintaining existing workflows, mount points, and application access. Infrequently accessed, 'cold' file data is transparently moved to the cost-effective, scalable Scality RING. If needed, these payloads are automatically pulled back from object storage when accessed by users.

This tiered approach optimizes the overall AI/HPC storage budget by leveraging a cost-effective archive tier that can quickly exchange data with the low-latency flash tier. This allows companies to right-size their performance requirements, delivering both low latency and high throughput across the entire data pipeline.

Typically, WEKA is scoped to provide 10-20% of the total system capacity for the performance tier, which delivers 100% of the system's performance, with Scality RING providing the remaining capacity.

Snapshots offer instant recovery to a known-good state, eliminating the need to re-ingest or reprocess data. WEKA snapshots are highly efficient, with no performance impact and a minimal capacity footprint, allowing organizations to maintain numerous point-in-time copies at a low cost.

These snapshots enable parallel workstreams and accelerate time to value by allowing multiple teams or models to access isolated views of the same data without interference. They are also valuable for audits, compliance, and tracking data lineage throughout the model lifecycle. Furthermore, snapshots protect point-in-time copies of data by storing them in a highly durable and cost-effective archive tier.


Learn more about the full capabilities of NeuralMesh™ by WEKA at WEKA.io.

Simplicity

Integrating Scality RING with WEKA is straightforward. Simply select HTTPS as the protocol from the WEKA configuration dropdown and direct the system to the load balancers fronting Scality RING.

WEKA's comprehensive connectivity suite supports your existing applications, including:

- GPU direct
- POSIX
- Kubernetes CSI
- SMB, NFS, S3

Both Scality and WEKA support teams are cross-trained on each other's products and technologies, ensuring a smooth and efficient support experience.

Scality RING

Scality RING is a software-defined object storage solution deployable on industry-standard storage servers, providing IT professionals with unparalleled flexibility and cost savings.

Key features:

- **Extreme data durability:** RING is engineered to deliver up to 14 nines of data durability.
- **High availability:** RING can be deployed on a single site or across highly available, stretched two or three-site architectures to meet diverse business HA requirements.
- **CORE5 architecture:** This innovative architecture provides multi-layer protection against current and future threats, including data exfiltration and high-level privilege escalation attacks.
- **Fault tolerance:** Features include no single point of failure and a self-healing mechanism.
- **Limitless & non-disruptive scaling:** RING offers multi dimensional scaling up to exabytes of capacity, allowing for non-disruptive capacity and performance expansion with no downtime.
- **Cost efficiency:** Helps reduce costs, especially as AI budgets face increased scrutiny.

ABOUT SCALITY Scality builds infinitely scalable, cyber-resilient S3 object storage for the world's most discerning and data-driven companies. Our patented MultiScale Architecture scales independently across all critical dimensions to meet the unpredictable demands of modern workloads — from AI/ML to backup and cloud infrastructure. Powered by CORE5 technology, Scality delivers end-to-end cyber resilience for unbreakable protection against the threats of today and tomorrow.



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