Extending on-premise HPC to the cloud

Gabriel Broner, VP & GM of HPC, Rescale
HPC User Forum, September 2018
The Rescale HPC Platform

- Enterprise big compute
- Innovation acceleration
- User-first platform
- Security and admin controls

Rescale ScaleX Platform
HPC with Rescale

Unified on-premise and cloud environment

Rescale portal
GUI and API

Status

Job Scheduler

On-premise HPC systems

Rescale cloud
Scalability: faster results, shorter turnaround time

On-premise HPC

Jobs queued

HPC in the Cloud

Concurrent submission

Optimized compute resources

On-premise HPC

Jobs queued

HPC in the Cloud

Concurrent submission

Optimized compute resources

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Advanced Rocket Design & Development

- Product development speedup of over 24X
- Instant 1,000+ CPU clusters simulating design performance
Scalability keeps American Axle on schedule

- On-demand licensing and instant scaling for Star-CCM CFD analyses
- Flexible compute resources enable tight deadlines to be consistently met
University Deployment

- Rescale as common HPC platform
- On-premise + public cloud
- Supports large increase in new users (internal and external) and applications
Cost of on-premise vs cloud

Tier 1 Automotive Supplier Example

$4M CAPEX

$100K/month OPEX
Optimizing cost with Hybrid

Place workloads to achieve best possible result
Transformative Benefits

A new approach to HPC

- Hybrid cloud with on-premise support
- Multi-cloud environment
- Access the latest architectures with no wait
- 250+ applications ported and tuned
- Recommends the best architecture for each job
- Configurable SaaS workflow reduces the need to develop and maintain custom scripts for each system
- Fast learning curve for new HPC users
- Pay per use for hardware and software
- One platform to access and administer all systems
HPC with Rescale

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External HPC center

On-premise HPC systems

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Offer on-premise systems in the Rescale cloud

Enable external access to your on-premise systems

On-premise HPC systems

Rescale portal
GUI and API

Job Scheduler

Rescale cloud

Offer on-premise systems in the Rescale cloud

Enable industry and cross-center collaboration

Control access
Track utilization
Apply credit
Cross-center Collaboration with Rescale

*Unified Access Across HPC Centers*

- Best architecture for each job
- Control Access
- Track utilization to HPC resources
Absolute enterprise security, delivered end-to-end

Rescale delivers best-in-class security layer across entire platform

Rescale is compliant with the strictest industry security standards

- Full administrative management and IT dashboard provide comprehensive controls and visibility
- Software defined security policy implementation tools to enforce proper IP handling
- Encryption in transfer with high-grade TLS and multi-layered encryption at rest with 256-bit AES

SOC 2 Type 2 Attested  CSA Registered  ITAR Compliant *  HIPAA Certified *  FedRAMP (pending)

* Not available in all geographical regions.
The Rescale Team

- Deep Expertise in HPC Applications
- Six years of experience with HPC in the Cloud
- Significant Experience with HPC customers
Rescale at a Glance

FOUNDED  2011

LOCATED  SAN FRANCISCO (+ LONDON, MUNICH, TOKYO, SEOUL, SINGAPORE)

DELIVERS  ENTERPRISE BIG COMPUTE PLATFORM

FUNDED  

ENDORSED  

ADDRESSES  
Aerospace  Automotive  Industrials  Life Sciences  Universities  Oil & Gas  Semiconductor  Financial Services