osie

WORKLOAD DISTRIBUTION STRATEGIES

For Different Computing Environments

Workload Distribution Strategies for Different Computing Environments

Optimal workload distribution can be the difference between a highly efficient and scalable cloud and a cloud architecture that is bleeding money and leaves you exposed with regard to regulatory compliance.

The cloud repatriation trend is significant for cutting cloud-related costs and for exercising more control over mission-critical workloads and ensuring legal compliance
Agile, cloud-smart architectures are the way to future-proof your cloud strategy amidst escalating cloud costs, vendor lock-ins, and compliance requirements.

Key Insight: 54% of cloud leaders perform a thorough workload-by-workload analysis before deciding where to host their workloads, compared to only 38% of other tech decision-makers who analyze critical workloads only.

Current Workload Distribution Landscape

The Hybrid Advantage

While only 17% of surveyed tech leaders currently use a hybrid strategy, interest is growing with 22% planning to go hybrid. Coresite's 2025 State of the Data Center report shows that 98% of surveyed IT leaders have adopted a hybrid strategy or plan to.

Why Hybrid Works:

- Integrates different environments across public, private, and multi-cloud
- Helps businesses build scalable, vendor-agnostic, and flexible cloud architectures
- 82% of tech leaders who implemented hybrid clouds reported satisfaction
- Ideal for optimizing performance while minimizing latency

Current Distribution Breakdown

According to recent surveys, organizations distribute workloads as follows:

- Public cloud: 19%
- Private cloud: 27%
- Hybrid cloud: 16%
- Multicloud: 17%
- SaaS: 8%
- Not in the cloud: 14%

The Rise of Colocation Centers

Colocation centers are becoming increasingly popular for workload distribution, offering:

- Cost-effective alternatives to public cloud
- Enhanced control over workloads
- Cross-connection capabilities between different cloud providers
- Simplified hybrid cloud implementation
- Regulatory compliance support with geographic constraints

Key Factors for Workload Placement

1. Network Connectivity and Latency

- Critical workloads (medical equipment, life support systems) should be on-prem with proper backup, security, and high availability
- Real-time workloads and high-performance computing benefit from reduced latency on-prem
- Mission-critical workloads can be placed in cloud where latency isn't a concern

2. Cost Considerations

- Predictable workloads with consistent resource usage work well on-prem
- Variable workloads needing to scale benefit from cloud flexibility
- Legacy systems that are difficult to re-architect can drive cloud costs higher
- Data-processing-intensive workloads (streaming data) are better suited for on-prem

3. Control and Compliance

- Organizations comfortable with full control should consider on-prem for specific workloads
- Regulatory requirements may mandate geographical limits (on-prem or colocation)
- Specialized licensing requirements may only make sense on-prem
- Organizational resources determine feasibility (larger organizations have more on-prem capability)

Workload Distribution Strategies

1. Comprehensive Workload-by-Workload Analysis

The most thorough and effective approach for building flexible, scalable, and cost-effective cloud architecture. Best suited for businesses with internal resources or vendor partnerships.

2. Critical Workload Analysis

More manageable for companies with limited resources. Focuses on analyzing only critical workloads while requiring efficient FinOps strategy for cost control.
Best Practice: Periodically analyze your architecture and continuously optimize until fully aligned with business goals.

3. Overarching Criteria and Rules

Create standardized rules for workload placement:

- All critical workloads → on-prem or colocation
- Data-processing-intensive workloads → on-prem with cloud bursting capability

4. Ad Hoc Distribution

Reactive approach that should be streamlined as soon as possible to avoid unaffordable cloud expenses.
Best Practice: Periodically analyze your architecture and continuously optimize until fully aligned with business goals.

The Financial Reality: AWS vs. On-Prem Comparison

Storage Cost Analysis: 55TB Capacity

Cost Category	AWS S3 Glacier Flexible Retrieval	On-prem DIY NAS
Upfront Costs		
Hardware/setup	$0	$1,908 (complete system)
		Storage drives: $1,400
		Infrastructure: $508
Monthly Costs		
Storage Fees	$198/month ($0.0036/GB × 55TB)	$0
Metadata Overhead	$5-50/month (40KB × objects)	$0
Power Costs	$0 (AWS responsibility)	$4.17/month (43W idle)
Retrieval Costs		
Bulk (5-12 hours)	FREE	Instant access
Standard (3-5 hours)	$0.55/GB + $0.05/1,000 requests	Instant access
Expedited (1-5 min)	$1.65/GB + $10/1,000 requests	Instant access
Additional Costs		
API Calls	$0.05/1,000 PUT, $0.0004/1,000 GET	$0
Early Deletion Penalty	90-day minimum charge	$0
Maintenance	$0 (AWS responsibility)	~$250/drive every 5-7 years
Year 1 Total	**$2,376 - $2,976**	**$1,958**

The DIY NAS setup is cheaper from year one. Over time, on-prem costs are primarily cooling, power, and maintenance, while AWS storage costs exceed $2,000 annually for archival storage alone.

Conclusion

Workload distribution is vital for building future-proof cloud architecture aligned with business objectives. Your strategy depends heavily on available resources and skills, but the financial benefits of strategic distribution are clear.
Action Items:

1. Conduct thorough workload analysis
2. Evaluate hybrid and colocation options
3. Calculate total cost of ownership for critical workloads
4. Implement continuous optimization processes

The key is frequent review and optimization of your workload distribution to ensure maximum performance, scalability, and cost-effectiveness.

Learn more about optimizing your cloud architecture at **osie.io**

Read the full article:
Workload Distribution Strategies for Different Computing Environments