

Azure Performance Optimization



What is Azure Performance Optimization?

Azure Performance Optimization is the process of improving the efficiency and effectiveness of your Azure resources and workloads. It involves monitoring, analyzing, and adjusting your Azure environment to meet your performance goals and requirements. Azure Performance Optimization can help you reduce costs, increase availability, enhance security, and boost user satisfaction.

Optimizing Azure performance for customer workloads is essential for

- Seamless user experience
- Cost efficiency
- Scalability, Reliability
- Competitive advantage
- Operational efficiency
- Data security
- Compliance
- Business continuity



C3IT's Azure Performance Optimization Framework

C3IT would gather data from cx on

- Existing workload details
- Inventory of Azure services
- Usage patterns
- Performance metrics
- ongoing Operational tasks at Compute, DB,N/W,App levels
- Governance mechanism



Phase -I

Data Gathering & Performance Analysis

- Understand CX's Azure architecture & design principles.
- Set CX's Azure performance goals & metrics
- Explore CX's Azure performance problems

3 to 5 days



C3IT would Provide the outcome of the Assessment

- Observations
- Metrics
- Reports



Phase -II

Recommendation on Performance Optimization & Strategy Roadmap

- Analyze the runtime behavior of CX's Azure resources and workloads
- Prioritization of Performance issues towards resolution
- Share implementation Roadmap

3 to 5 days



Phase -III

Implementation of Performance optimization

Provides high quality solutions by applying performance optimization techniques & best practices in 2 phases

- Immediate Impact
- Long term sustainability



C3IT would provide

- Prioritized recommendations for performance opportunities
- Strategy roadmap for the implementation

Discuss

- Logistics & Financials of Performance implementation

Add - on

Performance Optimization Managed Services Offering

C3IT team would provide ongoing support towards Performance optimization

- Build & adjust performance optimization strategy (ongoing)
- Automate performance tracking and management
- Ensure ongoing Performance tuning



C3IT would provide

- Performance optimization summary at Compute, App, DB, N/W, Security & Storage
- Comparative stats before & after performance optimization

Discuss

- Logistics & Financials of Managed services

3 to 5 wks



Why is Azure Performance Optimization Important?

What are the **challenges** faced by existing customers?

- Deteriorating Performance
- Increased Costs
- Reduced Availability
- Security Vulnerabilities
- Compliance Issues
- Poor User Experience
- Technical Debt
- Inability to Scale
- Wasted Resources
- Operational Inefficiency

How will customers benefit from Performance Optimization

- ✓ Actionable Recommendations
- ✓ Improved Efficiency
- ✓ Cost Savings
- ✓ Enhanced Security
- ✓ Compliance Assurance
- ✓ Better User Experience
- ✓ Strategic Insights
- ✓ Customized Solutions
- ✓ Operational Streamlining
- ✓ Continuous Improvement

Azure Performance optimization – At various Levels

Optimize Azure Performance with
Our Expertise

Compute
performance

WebApp
Performance

Database
Performance

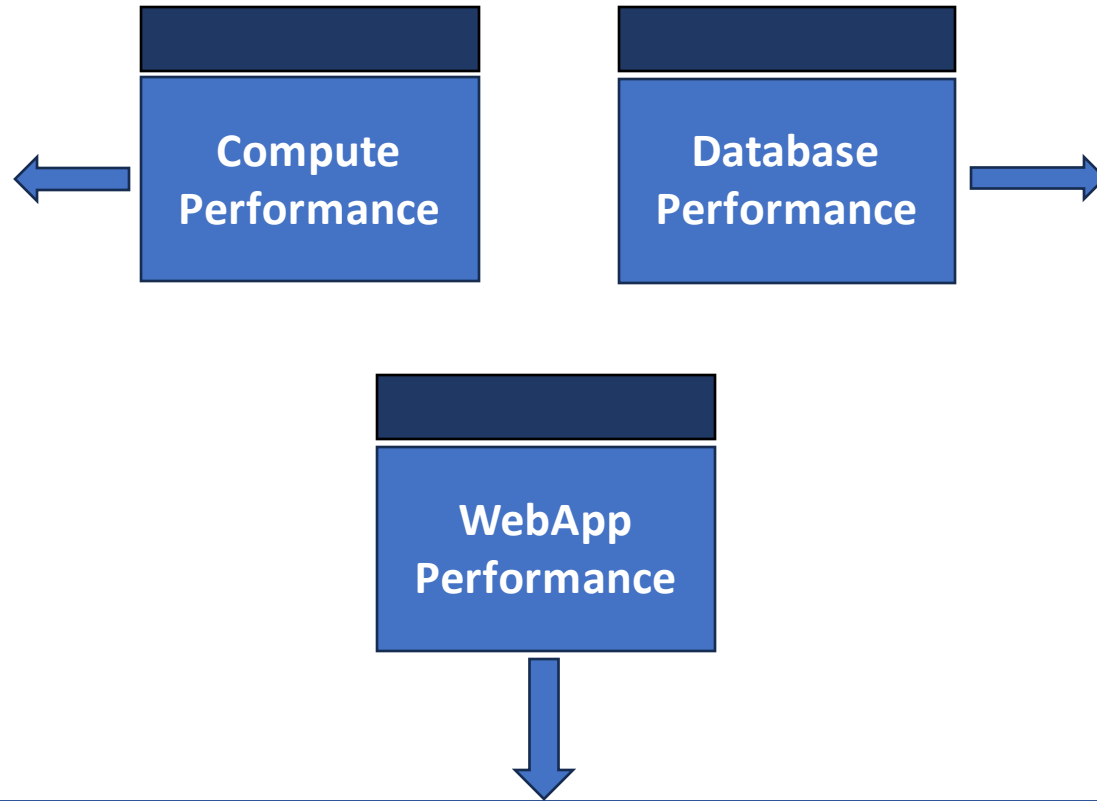
Networking
Performance

Security
Performance

Storage
Performance

Ongoing Azure Performance Optimization – At various Levels

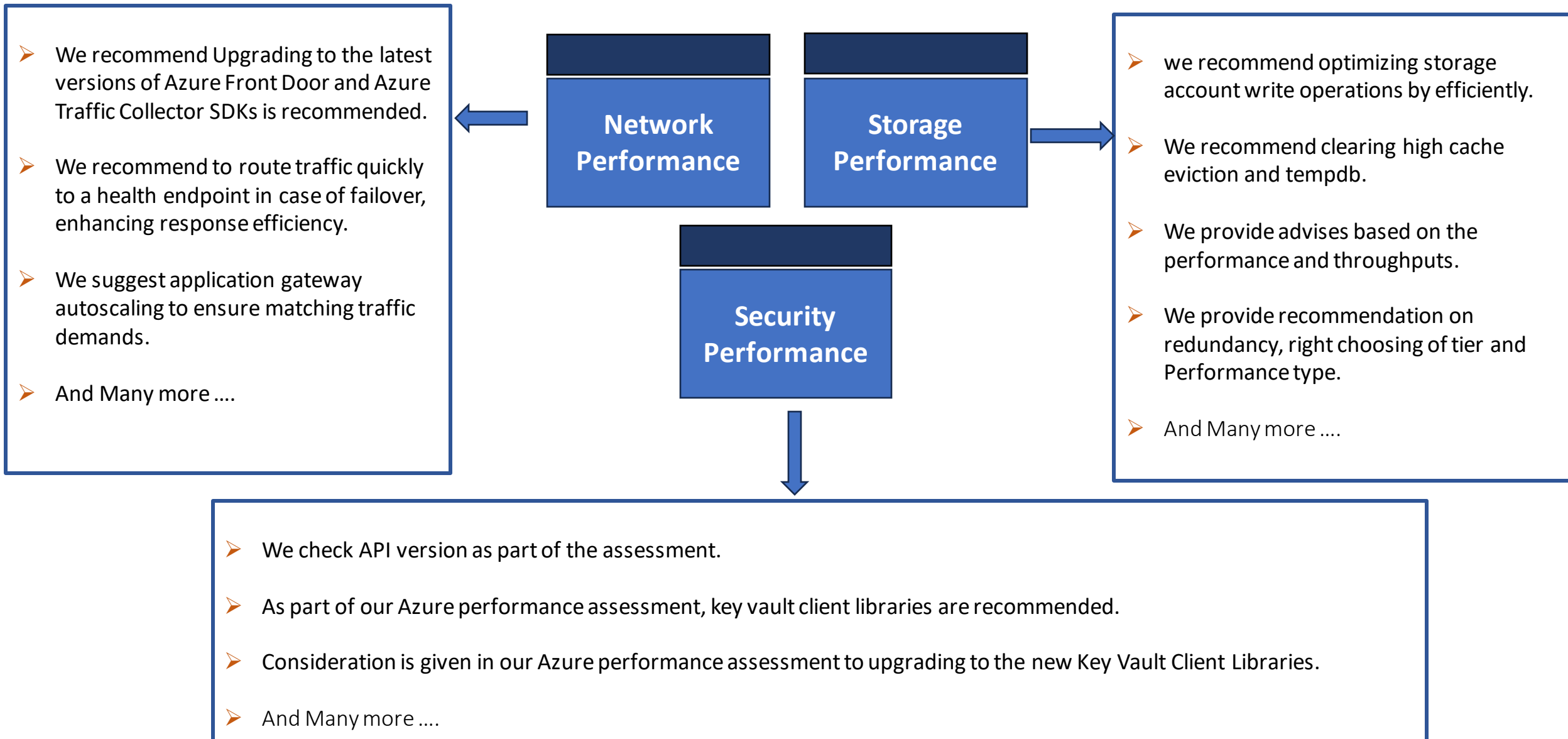
- ❑ We ensure vSAN capacity below 75% for SLA compliance by adjusting resources & workloads.
- ❑ We upgrade outdated SDK's as appropriate.
- ❑ We recommend resources based on the performance.
- ❑ Recommendations will be provided based on recent data to identify VMs exhibiting usage.
- ❑ And Many more.....



- ❑ We recommend optimizing Azure Cosmos DB by adjusting query page size, adding composite indexes to reduce RU charges.
- ❑ We review hierarchical partition keys for scalability and reliability, especially in multitenant or synthetic key scenarios.
- ❑ We monitor CPU closely and trigger alerts if Azure Cosmos DB or MongoDB vCore CPU usage exceeds 90% over 12 hours.
- ❑ And Many more.....

- ❑ Consideration is given to upgrading to the App Service tier based on performance.
- ❑ We recommend to ensure that your app stays within TCP/IP socket connection limits.
- ❑ And Many more.....

Azure Performance Optimization – At various Levels



Azure Performance Optimization- Sample reports

Application

Edit

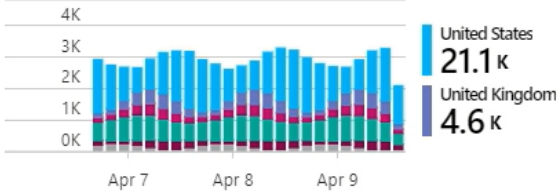
Total of Failed requests by Operation name

CH-RetailAppAI

Operation...	Total	% Total
GET Empl...	1.4 K	81.6%
GET Cust...	285	16.6%

Users

CH-RetailAppAI - Users - 3 days



Infrastructure & Network

Edit

Service Map

20

Machines reporting
(Last 30 min)

25

All-time machines reporting

24

1

Network Performance Monitor

6

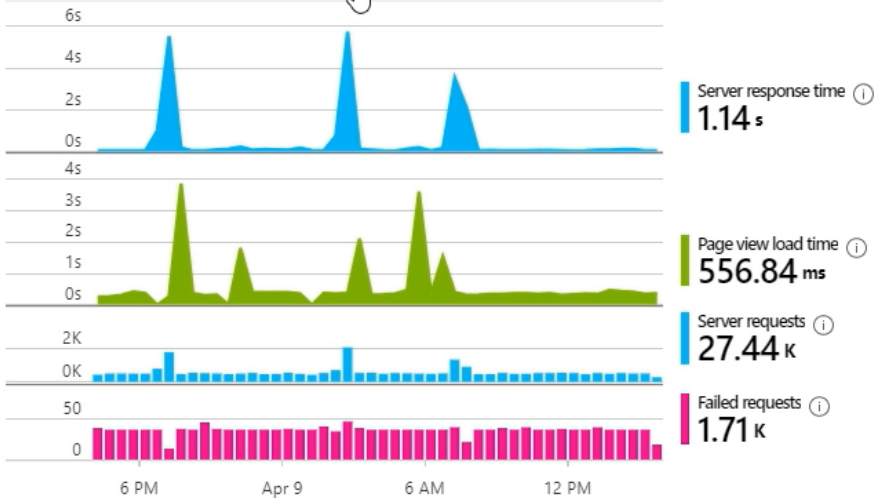
of 26 Subnetwork Links Unhealthy

0

of 1 Service Connectivity Tests Unhealthy

Overview timeline

CH-RetailAppAI



Availability tests sum...

CH-RetailAppAI



Node memory utilization

ClusterName: SH360-AKS

Avg

Min

50TH

90TH

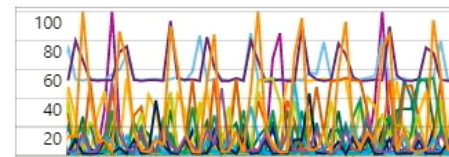
95TH

Max



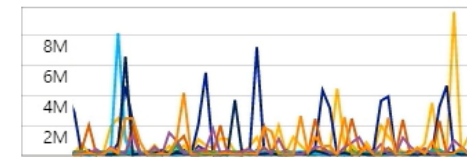
Retail VMs Compute

AVERAGE
14.8



Retail VMs Disk

BYTES/SEC
300k



Application map

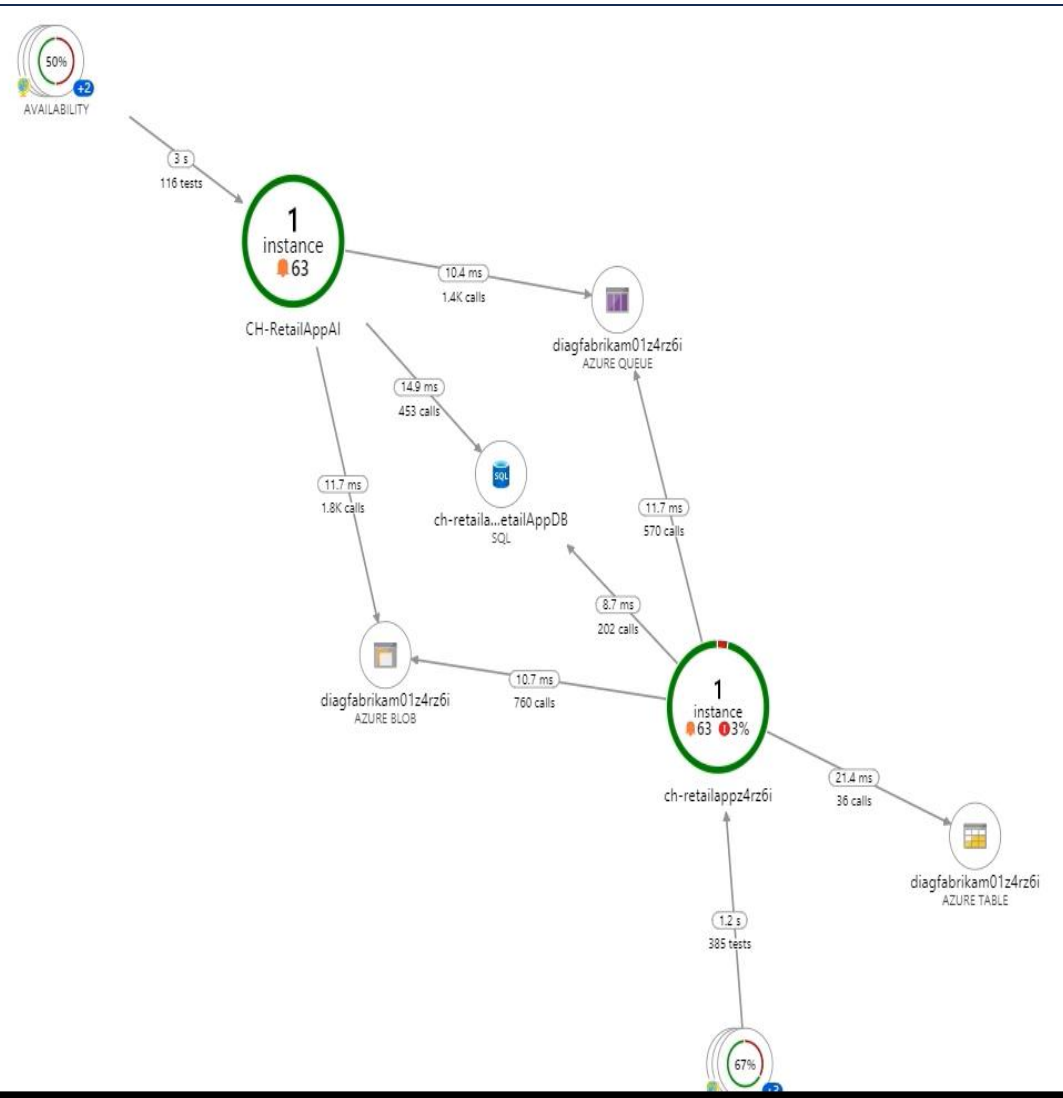
CH-RETAILAPPAI - LAST 4 HOURS



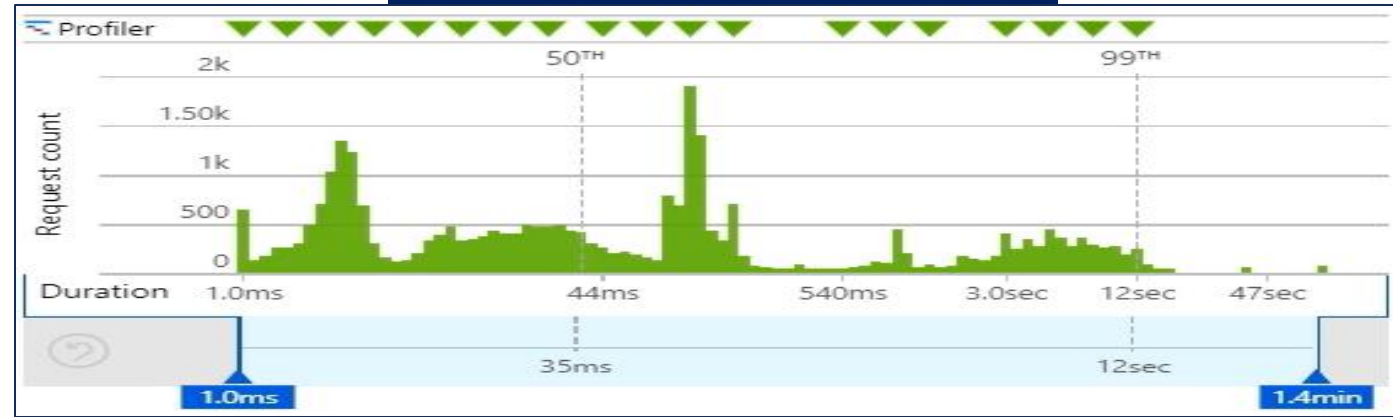
Live Stream
CH-RetailAppAI

Azure Performance Optimization - Sample reports

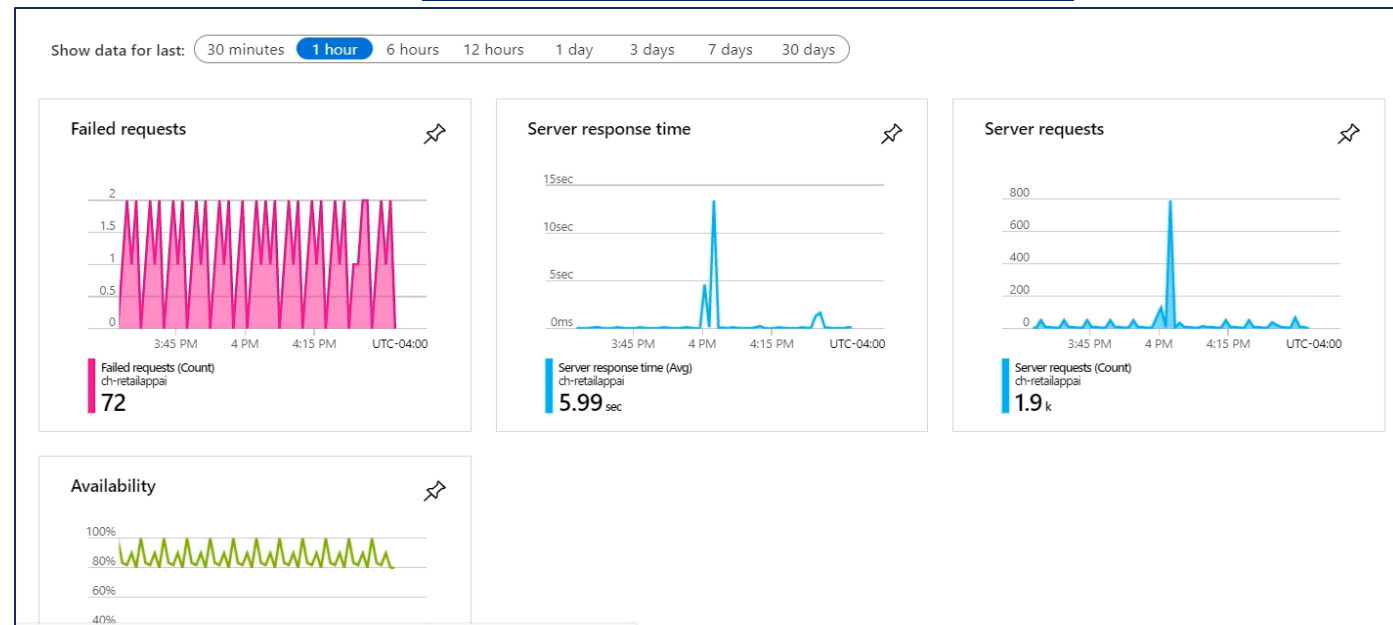
Application Map



Distributions of durations

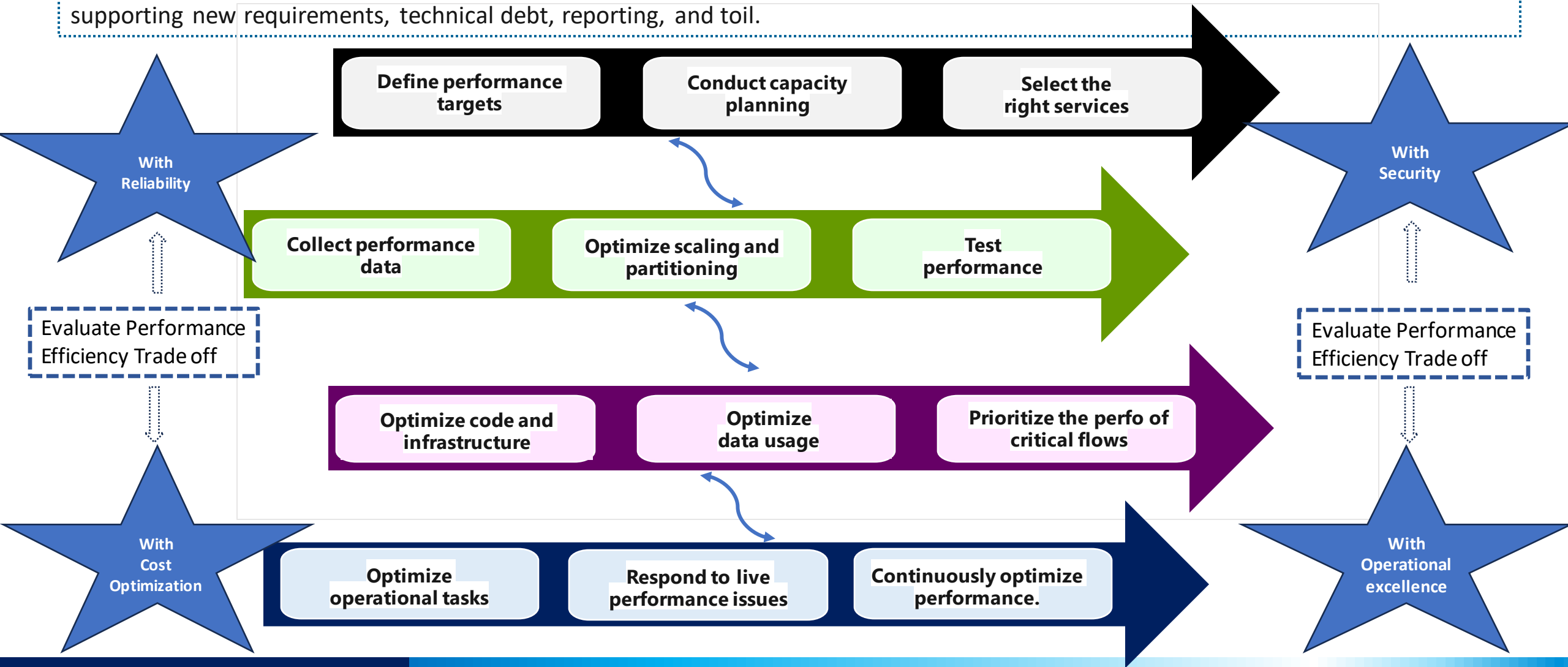


Server performance stats



Performance Efficiency Approach

We use performance checklist which presents a set of recommendations for the customers to scale their systems so it can grow and meet their workload usage demand. The goal of **performance** is to maintain the efficiency of every interaction with a healthy system as demand increases. When we design and implement for performance, focus on the **efficiency and effectiveness** of cost, complexity, supporting new requirements, technical debt, reporting, and toil.



C3IT's Deliverables of Performance Optimization

Deliverables

- ✓ **Assessment Report:** A comprehensive document detailing the current performance state, including any bottlenecks and inefficiencies identified during the assessment.
- ✓ **Recommendations:** A list of actionable recommendations for improving performance, tailored to the specific Azure environment.
- ✓ **Performance Baselines:** Establishment of performance metrics and baselines that serve as a reference point for future optimizations.
- ✓ **Implementation Plan:** A strategic plan outlining the steps to implement the recommended optimizations, including timelines & responsibilities.
- ✓ **Test Results:** Documentation of performance testing results pre & post-optimization to validate the effectiveness of changes made.
- ✓ **Monitoring Strategy:** A strategy for ongoing performance monitoring, including tools and practices to maintain performance efficiency.
- ✓ **Cost-Benefit Analysis:** An analysis of the potential cost savings and efficiency gains from implementing the recommendations.
- ✓ **Governance & Compliance Review:** Insights into governance practices and compliance with industry standards and regulations.
- ✓ **Security Assessment:** An evaluation of the security posture of the Azure environment and recommendations for improvements.
- ✓ **Customized Reports:** Customized reports generated by Azure Expert Assessment tools, providing deep insights into the Azure environment.



About Us

C3IT Software Solutions is an Information Technology services and consulting company established in 2002. Working with Fortune 500, mid-tier as well as SMEs, C3IT enables organizations to bring about **business transformation through digital platforms**. Our expertise has enabled many organizations across industries achieve their key business objectives of driving organizational efficiencies, reducing costs, and improving Return on Investment from technology investments using insights from digital platforms and intelligent process automation. Our customer central includes enterprises in the Retail, Manufacturing, BFSI, Pharma, Renewable Energy and Hospitality domains, spread across US, Europe, Middle East & India.

C3IT is a **Microsoft Advanced Specialization Partner** for Modern Work which includes all Microsoft O365 services specifically Microsoft SharePoint, Power Platform, Microsoft Teams, Viva, and Power BI. We are a Microsoft Designated Solutions Partner for **Digital Apps, Data & Artificial Intelligence and Azure Infrastructure and DevOps**. Our technical consultants are Microsoft certified professionals, and we sponsor and renew technical certifications for all our people and make sure they are constantly learning and have expertise in state-of-the-art technologies. This ensures our customers get the best expertise on Microsoft platforms.

C3IT has been the Trusted Partner over 2 decades for holistic business transformation: Industry Insights, Consulting Excellence, and Cutting-Edge Cloud & AI Solutions

THANK YOU

