Microsoft Dynamics 365

PerfLens 365

Microsoft D365 Performance Engineering Toolkit



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Agenda

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01	Business Objective
02	Solution Framework
03	Performance Engineering Lifecycle
04	Overall Approach & Planning
05	Key Deliverables and Reporting
06	Support Needed
07	Commercials
08	Conclusion

BUSINESS OBJECTIVE

D365 Performance Engineering – Overall Objective

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Performance engineering is essential to ensure consistent, reliable performance of business-critical operations in Dynamics 365 to protect revenue, user experience, and operational continuity.

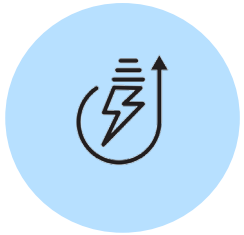
Why D365 Performance Engineering is Critical?

Unpredictable System Performance



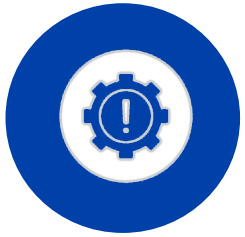
- Directly impact business operations
- Fluctuating response times across D365 app stacks lead to delays and customer dissatisfactions

Peak Load Failures



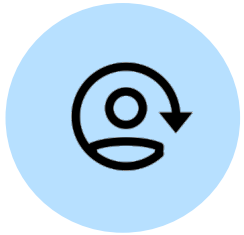
- Results in revenue loss
- High transaction volumes during peak retail periods expose system bottlenecks, causing downtime

Limited Visibility into Performance Bottlenecks



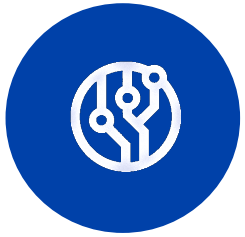
- Lack of E2E observability
- Difficulty identifying the root cause (UI, integrations, DB or infrastructure layers)

Reactive Performance Test Approach



- Reactive testing leads to release delays
- Causes rework and eventually cost increase

Lack of Performance Accountability



- Derail Go-Live decisions
- Business and IT leaders lack a single source of truth for unified assessment

PerfLens 365 – Navigating the Challenges

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	Unpredictable Performance	Peak Load Failures	Limited Performance Bottleneck Visibility	Reactive Performance Test Approach	Lack of Accountability
Concerns					
Our Solution	Deliver performance predictability through AI-driven insights, workload simulation and continuous observability	Validate peak readiness through realistic load simulations and capacity analysis	Provides deep observability and diagnostics across all app layers – UI, DB, MW, Integrations, Infra	Shift from reactive testing to proactive E2E performance engineering solution	Provides clear insight with Scorecard and Performance Readiness Report
Business Outcome	Ensure consistent system behavior under all conditions	Confirm system reliability during high demand	Rapid identification of bottlenecks with actionable insights	Enable early detection of issues resulting faster, quality releases	Informed data driven Go/No-Go decision with confidence

SOLUTION FRAMEWORK

D365 Performance Engineering Solution Framework

Our end-to-end Performance Engineering solution designed to ensure scalability, stability, and peak readiness across the Microsoft application ecosystem—**Dynamics 365 Finance & Operations, Commerce, POS, CE, Power Platform, and Azure integrations**.

Our Framework

Moving beyond traditional performance testing, our solution delivers a closed loop approach that combines load validation, proactive monitoring , deep diagnostics, architectural issue insights and expert led recommendations - helping customers protect revenue, sustain peak operations and scale with confidence.

D365 Performance Engineering

Test Script

No Load Test

Load/Stress Test (Based on Customer req)

AI Infused Script/Test data generation

Execution against the load

Performance Report

Reporting

Key Metrics

Adherence to NFR

Improvement Assessment

Assessment By Lumovy Solution Experts

Continuous Monitoring

Azure App Insight for Monitoring

JMeter Integration

Multiple iteration with varied load

Improvement Recommendation

D365 Architectural Optimization

AI Agent

Custom Agent Insights

CSU/AOS/ DB/ CPU/Memory performance evaluation

Deep Analysis led by Lumovy Experts

Recommendation Blueprint

E2E Test Orchestration | **Test Reporting** | **Agentic AI QE Toolkit** | **Comprehensive Assessment & Recommendation**

From Performance Uncertainty to Predictable, Business ready Systems

Key Solution Components

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AI Infused Test Generation

Accelerated automated test script/data generation in JMeter integrating AI Agent plugin (Featherwand)

Pre Built Scenarios

Pre-built JMeter scenarios for critical D365 business flows to enable faster adoption

Extensive App Stack Coverage

Seamless Performance assurance across D365 – (FnO, POS ,CE),external API, Azure integrations, Power Platform, External apps

Advanced Load Simulation

Realistic concurrent workload execution across the apps/systems

AI Driven Analytics

Embedding utility/ library to auto identify anomalies and trends by importing JMeter metrics

Architectural Recommendations

Identify architectural hotspots with analysis, validation & recommended remediation

Deep Database Diagnostics

Telemetry driven analysis to detect slow queries, blocking and deadlocks

Infrastructure Sizing & Capacity Validation

Load simulation and telemetry analysis to validate optimal sizing and system resilience for peak demand

E2E PERFORMANCE ENGINEERING LIFECYCLE

Performance Engineering – Lumovy E2E Process Overview

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JMeter – Design Components

- **Test Plan (JMX)**
Thread Group | Config Elements | Listeners
- **CSV Data Config (Parameterization)**
users.csv | items.csv | vendors.csv | sites.csv
- **User Defined Variables**
base URL | legal Entity | warehouse | currency
- **Reusable Component Library**
Login | Session | Token Refresh | Logout
- **Timers & Pacing**
Gaussian Timer (mean 2s) | Constant Throughput Timer
- **Thread Groups (Multi-Env Ready)**
Dev | SIT | UAT | Prod → change CSV + base URL only
- **Backend Listener → App Insights**
App Insights Key injected via User Vars
- **Results Dashboard**
Log Listeners | Aggregate Report | Response Time Graph | JTL Export
- **MULTI-ENV REUSE**
Same JMX → swap CSV + baseURL → Dev / SIT / UAT / Prod with zero script change

Load Distribution

THREAD GROUP STRATEGY

- Define user load distribution based on business-critical scenarios
- Assign proportional load % for each transaction type
- Apply appropriate ramp-up durations aligned with expected workload patterns

APP INSIGHTS MONITORING

APP INSIGHTS INTEGRATION

Monitoring Integration

- Configure backend listener/ telemetry connector to send performance data
- Authentication keys or tokens are passed through user variables for secure integration

Custom Dimensions

- Include Test Run, LE , env, Thread Group injected as properties

Telemetry Flow

- Load Test Tool → Telemetry Endpoint → Monitoring Platform → Dashboards & Analytics

KEY METRICS & BOTTLENECKS

KEY METRICS

- Avg Response Time
- 95th Percentile
- Error Rate
- Throughput
- Transaction Per Second (TPS)
- Concurrent Users
- AOS CPU/ Memory Perf Counters
- CSU Latency
- DB Query Duration (SQL Insights)

BOTTLENECKS & FIXES

AI-Driven Bottleneck Analysis

AI Agent evaluates App Insights telemetry data to :

- Detect performance degradation
- Highlight bottlenecks
- Recommend targeted fixes

Common Issues & Fix Recommendations

- AOS- High CPU on batch/posting
→ Tune batch threads, offload async tasks
- DB- Long SQL / missing index
→ Index tuning, stats update
- CSU- Sync latency
→ CSU Scaling, Payload optimization, incremental sync

OVERALL APPROACH & PLANNING

Performance Engineering Approach

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	Requirements Gathering	Test Planning	Design & Build	Execution, Assessment & Monitoring	Remediation and Fix – Test Closure
ACTIVITIES	• **Early NFR** gather for (Response time, throughput, and scalability) •Understand **D365 & integration** architecture •Identify **PT scope**	• **Create** Test plan for **BR Additive LE** Req • Prepare and Publish the **Test plan**	• Create **JMETER Test scripts** • **Synthetic Test data** set up • **Validate** Test scripts	• Execute planned **test runs** on **D365 front end** for 3 iterations if any issue found • **No Load** Test, **Load** Test (100 users) • Publish **test run report**	• Quick fix and remediation using D365 AI Agent • Publish **test execution summary** with all **key metrics**
KEY ASSUMPTIONS	• Customer SME to provide the BR Additive NFR • PT Scope is defined & finalized	• Tech stack details provided to PT team • Alltech SME availability for Test plan review	• Stable D365 PT environment (UAT) • Application is up & running 24X7	• PT environment is similar / scalable to Prod • Master Test data created to simulate real time load for BR	• All Performance related issues are resolved • Planned test runs are completed • Customer SME to review & approve PT summary report
DELIVERABLES	**NFR Document (specific to LE)**	**Approved Performance Test Plan**	**Performance Test Scripts**	**Performance Test run report, Metrics**	**Approved Test Closure report**

Shift LEFT

- **Early definition** of performance criteria, clear SLAs, and KPIs
- **Early detection** and resolution of performance issues
- **Reduced bottlenecks** in testing, faster feedback, and accurate tests
- **Faster resolution** of issues, lower cost of fixes

Shift RIGHT

- **Proactive issue detection and mitigation**
- Swift issue-resolution to **minimize** business impact
- **Continuous performance improvement** based on real-world data

Project Plan

First 3 activities can be considered to be as Pre-requisite - once these are completed the actual delivery will commence from Week 1

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Test Phase	Activity	Owner	Indicative Timeline: Week 0	Week 1	Week 2	Week3	Week 4
Planning and Setup	*Team Onboarding*	Lumovy					
	Access Enablement (Assess Test environment readiness - designated environment configurations, and network setup)	Customer					
	Infrastructure Setup (VM/VPN/Proxy configuration)	Customer					
	Identify critical D365 touchpoints in terms performance testing for the scenarios	Lumovy					
	Define test objectives, key performance indicators (KPIs), and acceptance criteria	Lumovy					
	Test Data identification	Lumovy					
	Define load test strategy (user concurrency, peak load, ramp-up plan)	Lumovy					
	Finalize the test plan and obtain approval from stakeholders	Lumovy & Customer					
Test Design	Configure JMeter test plan and workspace	Lumovy					
	Develop JMeter test scripts for the selected D365 scenarios	Lumovy					
	Parameterize test scripts (dynamic data, variables, CSV-based data input)	Lumovy					
	Implement correlation techniques for handling session tokens, dynamic values,	Lumovy					
Dry Run, Validation and Debugging	Execute scripts in the designated env for Dry run execution and validation for 2 iterations	Lumovy					
	Debug issues related to authentication, session handling, and request failures	Lumovy					
	Verify response times, throughput, and system behavior for correctness	Lumovy					
	Optimize scripts for better efficiency and stability	Lumovy					
	Get customer approval on the test scripts before full-scale execution	Customer					
Load testing - Execution and Monitoring	Set up and configure JMeter load as per Customer Requirement (#Concurrent User *	Lumovy					
	Configure test parameters (concurrent users, ramp-up time, test duration) , Listener	Lumovy					
	Validate key metrics/parameters - network latency, firewall, and security settings	Lumovy					
	Execute baseline test with a normal user load	Lumovy					
	Perform load testing with expected peak user load	Lumovy					
	Monitor system resource utilization (CPU, memory performance)	Lumovy					
	Log all transaction failures, errors, and response time deviations	Lumovy					
	Capture network latency impact	Lumovy					
Performance Engineering - Result/Impact Analysis and Reporting	Analyse test execution results (D365 - Average response time, System throughput, login success rate, error rate , Network Latency	Lumovy					
	Identify performance bottlenecks and potential system limitations	Lumovy					
	Generate detailed performance Engineering reports with findings and	Lumovy					
	Conduct a results review meeting with Customer stakeholders	Lumovy & Customer					
	Provide recommendations for performance improvements (Including Archtectural Issues)	Lumovy					

KEY DELIVERABLES AND REPORTING

Key Deliverable List

PerfLens 365 Scorecard

Comprehensive health scorecard indicating RAG based ratings across UI, integrations, DB and infra layers

Reusable JMeter Framework and Test Suite

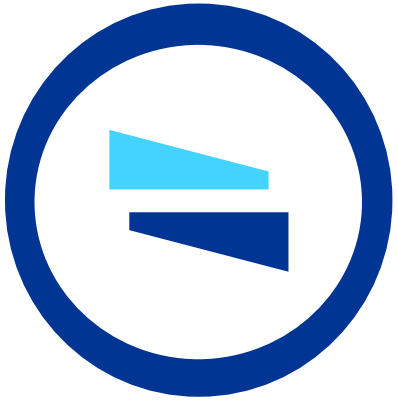
Plug and play, reusable performance testing suite with pre-configured scripts and workload models

Remediation Blueprint

Performance blueprint outlining performance bottlenecks, root causes and actionable optimization recommendations by Lumovy Experts

Performance Readiness & Executive Summary Reporting

Executive level summary providing go-live readiness assessment, key risks and performance confidence indicators



Future Performance Engineering Roadmap

Strategic roadmap for continuous performance engineering, observability maturity and advanced AI adoption

Performance Metrics

We will publish the Key metrics for 3 rounds of iterations as part of Performance Testing Execution for Brazil Additive.
We are going to follow all the metrics we demonstrated during the Pilot for Brazil CORP unless there is any other requirement from Alltech SMEs.

- Response Time
- Throughput
- Error Rate
- Latency
- Active Threads
- Transaction Per Second (TPS)
- Connect Time
- Hits Per Second (HPS)
- Data Sent and Data Received
- Response Codes

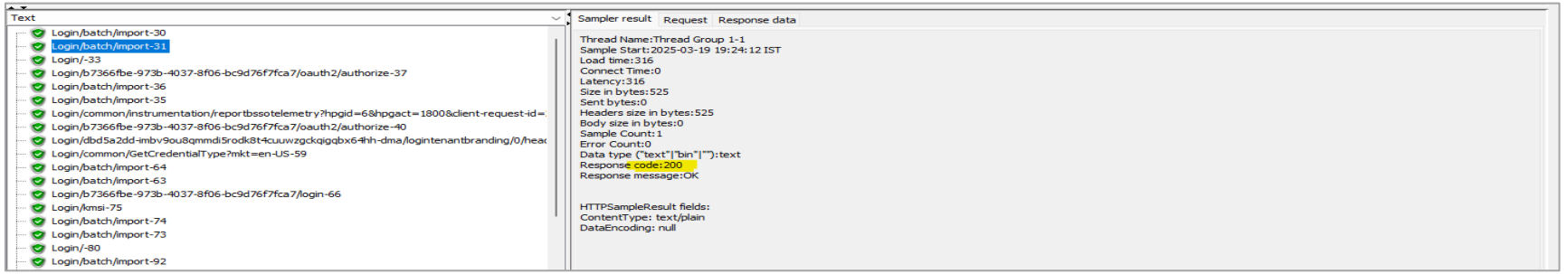
JMeter - Summary Report

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec	Avg. Bytes
.ogin/batch/import-30	1	1268	1268	1268	0.00	0.00%	47.3/min	0.40	0.00	525.0
.ogin/batch/import-31	1	316	316	316	0.00	0.00%	3.2/sec	1.62	0.00	525.0
.ogin/-33	1	1000	1000	1000	0.00	0.00%	1.0/sec	2.49	0.00	2552.0
.ogin/b7366fbe-973b-4...	1	441	441	441	0.00	0.00%	2.3/sec	24.74	0.00	11171.0
.ogin/batch/import-36	1	315	315	315	0.00	0.00%	3.2/sec	1.63	0.00	525.0
.ogin/batch/import-35	1	314	314	314	0.00	0.00%	3.2/sec	1.63	0.00	525.0
.ogin/common/instrume...	1	167	167	167	0.00	0.00%	6.0/sec	10.44	0.00	1786.0

Result Table

Sample #	Start Time	Thread Name	Label	Sample Time(ms)	Status	Bytes	Sent Bytes	Latency	Connect Time(ms)
1	19:24:11.290	Thread Group 1-1	Login/batch/import-30	1268		525	0	1267	0
2	19:24:12.560	Thread Group 1-1	Login/batch/import-31	316		525	0	316	0
3	19:24:12.876	Thread Group 1-1	Login/-33	1000		2552	0	1000	0
4	19:24:13.884	Thread Group 1-1	Login/b7366fbe-973b-403...	441		11171	0	440	0
5	19:24:14.328	Thread Group 1-1	Login/batch/import-36	315		525	0	315	0
6	19:24:14.644	Thread Group 1-1	Login/batch/import-35	314		525	0	314	0
7	19:24:14.958	Thread Group 1-1	Login/common/instrument...	167		1786	0	167	0
8	19:24:15.127	Thread Group 1-1	Login/b7366fbe-973b-403...	321		19861	0	320	0
9	19:24:15.451	Thread Group 1-1	Login/dbd5a2dd-imbv9ou8...	232		10350	0	232	0

Result Tree



Sample Performance Test Report with Metrics

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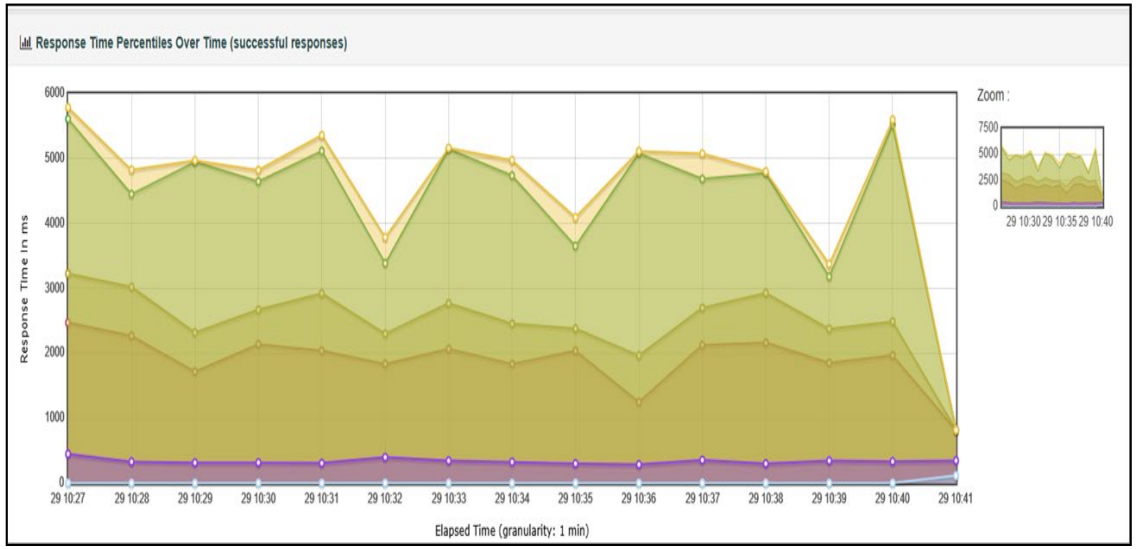
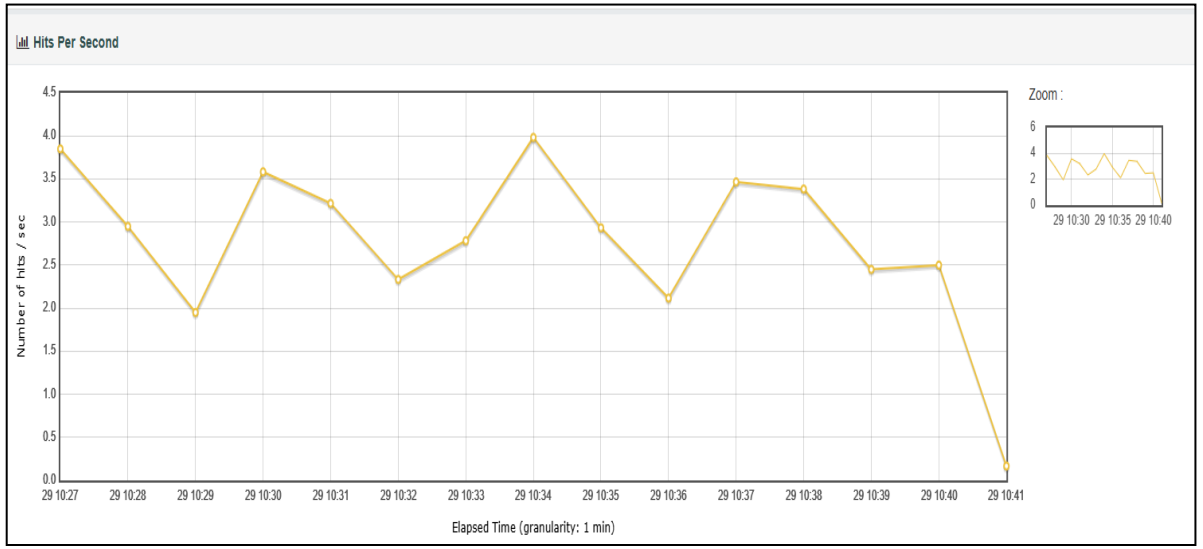
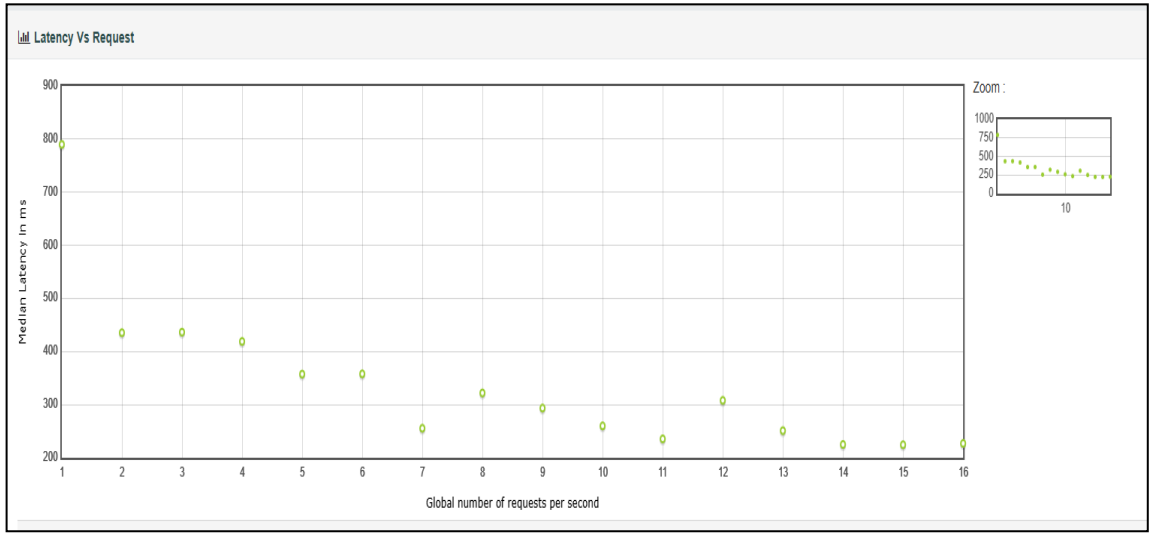
Response Time Over Time



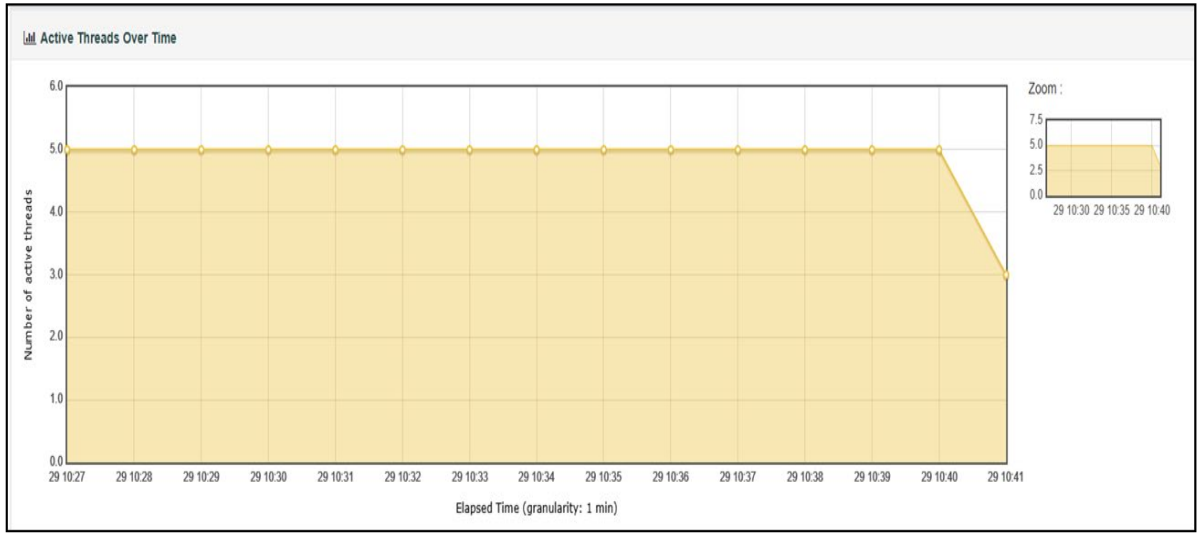
Throughput (Hits per Second)



Latency due to Concurrent Load



Number of Active Threads



SUPPORT NEEDED FROM CUSTOMER

Infra Requirement

- 1 VM hosted in customer network
- Admin rights for the Lumovy resources on the same VM
- Installation of Java latest version package (JRE, JDK) on the VM
- JMeter installation on the VM procured where D365 will be launched
- Service Accounts (having required privileges and MFA disabled) to simulate the concurrent user load for the testing

VM - Configuration Requirement

- 16 GB RAM
- Intel i5 CPU (4-8 cores)
- 128 GB Storage minimum (SSD optimal)
- Windows operating system

❑ *The configurations are recommended based on the requirements up to 10 scenarios and expected concurrent load up to 1000 users*

❑ *For further large-scale load tests, higher RAM and storage are required which is not considered as part of the offering*

COMMERCIALS

Performance Offering - Flexible Pricing Model

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App Stack Coverage

D365 – FnO, POS (CPOS, Store Commerce App), CE | Power Platform | Azure Integrations | Middleware | External Integrations

BASE PACKAGE

Performance Testing and Reporting	
No of Scenarios to be delivered	10
Estimated Duration	2-3 Weeks
Offering 1	• Identify **10 scenarios** • Setup JMeter Framework • Deploy Pre-built Scenarios • Concurrent Load Setup and Execution • Performance Test Reporting with key metrics • Customer demo and feedback approval • Final Closure and Handover
Implementation Cost	**$6,300** (Up to 10 prebuilt scenarios)

SILVER PACKAGE

Performance Testing along with Monitoring and Assessment	
No of Scenarios to be delivered	15
Estimated Duration	3 Weeks
Offering 2	• Identify **15 scenarios** • Setup JMeter Framework • Deploy Pre-built & additional scenarios based on customer need • Concurrent Load Setup and Execution • Integrate Azure App Insight with JMeter • Continuous Performance Monitoring for 4-5 iterations • Performance Assessment and recommendations • Customer demo and approval • Final Closure and Handover
Implementation Cost	**$9,300** (Up to 15 scenarios)

GOLD PACKAGE

E2E Performance Engineering , Assessment & Remediation Blueprint	
No of Scenarios to be delivered	20
Estimated Duration	4 Weeks
Offering 3	• Identify **20 scenarios** • Setup JMeter Framework - configure AI Plugins • Deploy Pre-built & additional scenarios • Concurrent Load Setup and Execution • Integrate Azure App Insight with JMeter • Continuous Performance Monitoring for 4-5 iterations • Lumovy expert led assessment and recommendation blueprint • Customer demo and approval • Final Closure and Handover
Implementation Cost	**$14,200** (Up to 20 scenarios)

WHY LUMOVY?

Key Differentiator

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AI-Enabled, High Velocity Performance Engineering

Combines intelligent automation, AI-driven insights and expert led predictive analytics



Microsoft Ecosystem Specialization

Deep expertise across Dynamics 365 Finance, Commerce, Retail, POS, CE, Power Platform and Azure integrations



Peak Holiday Performance Expertise

Proven experience supporting high-transaction retail environments with peak load readiness



Pre-Built D365 Performance Assets

Extensive library of reusable performance scenarios and accelerators



Integrated Observability & Monitoring Framework

Seamless integration with Azure monitoring tools for performance visibility and reporting



Open-Source and Scalable Solution

Built using flexible open technologies enabling cost-efficient scalability



Turnaround Expertise for Distressed Implementations

Proven ability to stabilize underperforming D365 envs by rapidly identifying performance bottlenecks and restoring system stability



Execution PODs for Performance Remediation

Ability to rapidly deploy specialized PODs to implement architecture optimization recommendations

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Thank You!