MICRO FOCUS

Data Sheet

Application Modernisation and Connectivity

Enterprise Server

Organisations face constant pressure to deliver innovation, improve efficiency, and maximise the value within their mainframe applications—all while managing costs and maintaining quality of service. Moving mainframe workloads to alternative platforms, including the cloud and containers, is a safe, proven, and cost efficient way to modernise business critical workloads and support future innovation, market growth, and expansion into new geographies.

Business Challenge

The digital era has transformed how the organisation sees IT. Rising demand for more significant change, at greater pace, has put IT under pressure to become more nimble and customer-focused.

At the same time, new business drivers such as reaching new geographies or markets, supporting hybrid infrastructures that include the cloud, and cost reduction or containment are forcing CIOs with business-critical mainframe applications to re-examine the right blend of platform deployment strategy.

But rapid change can be expensive, and risky. To avoid the high failure rates of "rip and replace" IT projects, organisations can accelerate their digital transformation journeys by reusing unique and business-critical core applications and data and deploying these onto alternative infrastructures as part of a modernisation journey.

The key to deploying tried and trusted mainframe workload onto alternative platforms is to initially minimise the change to avoid unnecessary risk while moving to an environment that allows you to modernise the applications themselves and increase the pace at which change can be delivered. The benefits are compelling, but are unlikely to be realised unless the underlying technology can:

- Take advantage of low-cost scale-out infrastructure to deliver the performance and transaction throughput required by even the most complex of business applications
- Support Continuous Operations to meet the Reliability, Availability, and Serviceability (RAS) expectations of the business
- Fully integrate with the enterprise security infrastructure to provide the right level of application and system security
- Enable IT to proactively monitor and manage the health of the systems in production
- Access mainframe transactions and data that must remain on the mainframe
- Provide a flexible architecture that enables IT to respond rapidly to new business demands or peaks in capacity

Product Highlights

Micro Focus Enterprise Server provides a mainframe compatible, high performance, scalable, deployment environment for applications that have traditionally run on the IBM mainframe. It delivers a batch execution and transaction environment that supports IBM COBOL, IBM PL/I, IBM JCL batch jobs, IBM CICS and IMS TM transactions, web services, and common batch utilities including SORT. It includes support for IMS-DB, mainframe data file formats and the infrastructure to support the integration of these applications with technologies

Micro Focus Enterprise Server at a Glance

- Take advantage of low cost commodity scale out hardware to provide production-grade application Performance, Reliability, Availability, and Serviceability (RAS)
- Deploy mainframe applications to the latest Linux, Windows and UNIX operating systems as part of your mainframe modernisation journey
- Dynamically respond to changing business demand using Cloud Services and/or Kubernetes Orchestrated Containers
- Flexibility to exploit new markets and geographies by deploying existing mainframe applications from a single code base onto new platforms with little or no mainframe operations experience
- Deliver equivalent quality of service whilst reducing costs by as much as 90%
- Modernise mainframe applications by keeping tried and trusted business functionality and exposing this through services or integrating this with .NET, Java, and Cloud technologies

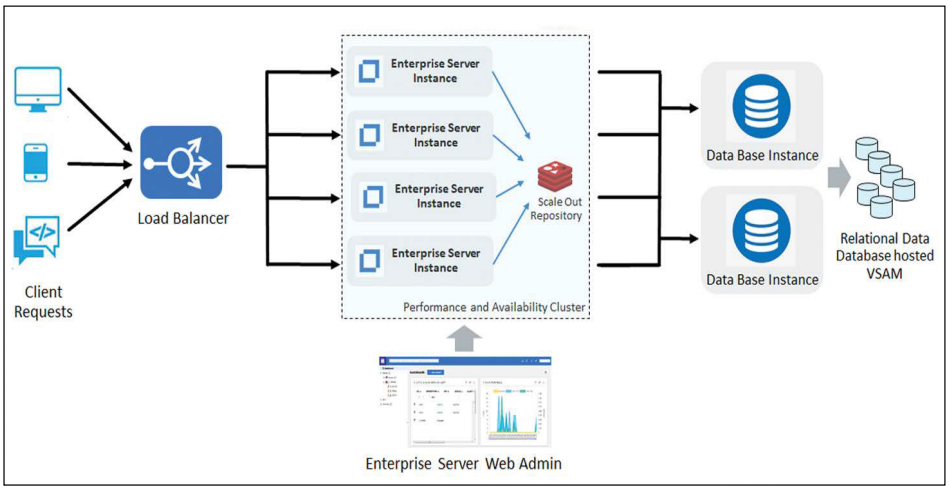

Figure 1. Enterprise Server Scale Out Architecture Diagram

such as .NET, J2EE, or SOA to support an application modernisation strategy.

Hundreds of customers worldwide have taken advantage of Enterprise Server to successfully deploy applications on to the latest distributed, virtual and cloud platforms delivering a fast return on investment and enabling the enterprise to transform its mainframe applications to fit its business strategy.

The other products in the Micro Focus Enterprise Suite, Enterprise Developer and Enterprise Analyzer support the rapid development and modernisation of z Systems applications. This enables organisations to understand, develop, verify and then deploy mainframe applications to the mainframe and/or Enterprise Server on a distributed or Cloud environment.

Key Benefits

Flexibility: to respond to business requirements to deploy mainframe applications and data to commodity platforms to enter new markets faster or to meet regulatory compliance that dictates customer data must be kept within geographic boundaries.

Reduction of operating costs by up to 90%: Exploit the price and performance benefit of low-cost infrastructure to reduce annual operating costs or to manage or reduce MIPS growth on z/OS.

Scalable Performance: Take advantage of scale up and scale out architectures offered by the Cloud and Kubernetes to deliver the performance and transaction throughput required to meet business demands or peaks in capacity.

Continuous Availability: To meet the Reliability, Availability, and Serviceability (RAS) expectations for business-critical applications whilst integrating into your enterprise service operations platform.

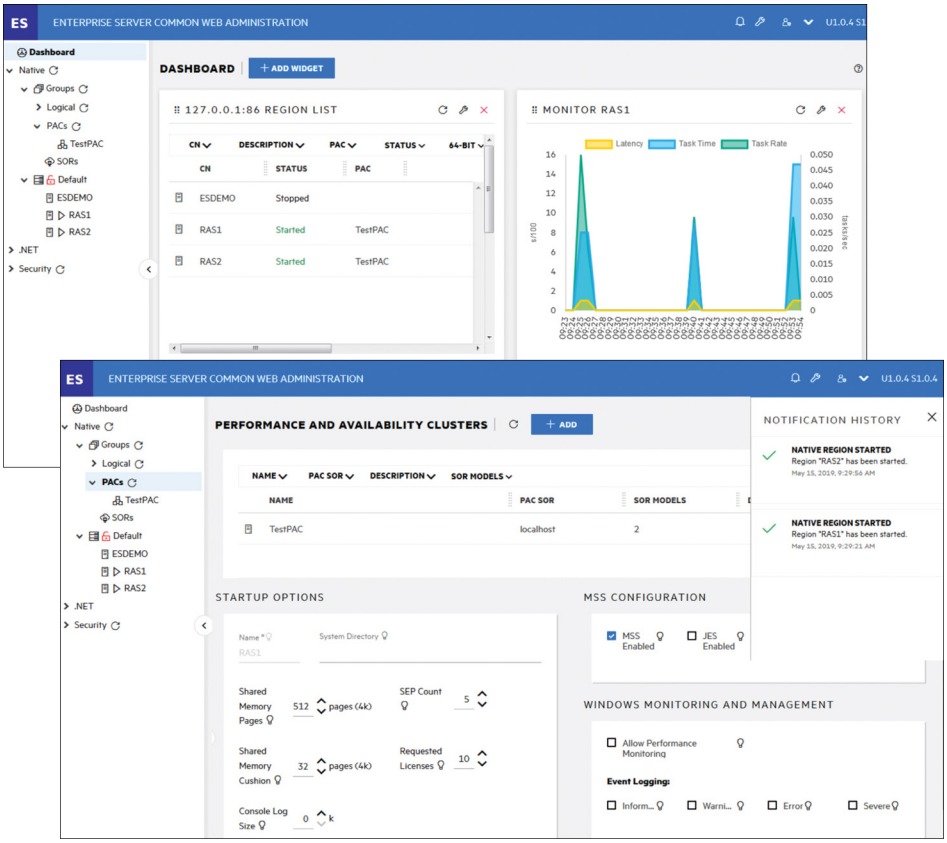

Figure 2. Enterprise Server Web Administration for managing Enterprise Server resources

Secure: Integrate with your enterprise security infrastructure to provide the right level of application and system security whilst utilising mainframe compatible security models for authentication and authorisation.

Mainframe modernisation: Complete infrastructure modernisation projects faster, as applications can be moved to alternative platforms with minimal change and lower risk. Proven business functions can then be exposed and executed as services or integrated with architectures such as .NET and the JVM.

Resolution of skills concerns: Applications operating under Enterprise Server are managed and maintained through a standard Web UI and do not require mainframe operating experience. With integration points to common operations management or open source tooling, Enterprise Server workloads can be operated as part of an enterprise operations management policy.

Key Features

High-performance Application Deployment Environment providing:

- Enterprise COBOL and PL/I compatible run time support with dynamic debugging and diagnostics
- Job Execution System (JES) engine to support submission, prioritisation, and execution of batch initiators, with full support for REXX and key IBM utilities such as DFSORT, ICEGENER, IDCAMS, IEBGENER and IKJEFT01
- Scalable CICS and IMS TM transaction system support to rehost online systems and screens
- Support for service enabling COBOL and CICS transactions through JSON WEB Services
- Ability to update individual executables in realtime
- Built-in administration, diagnostics, and monitoring

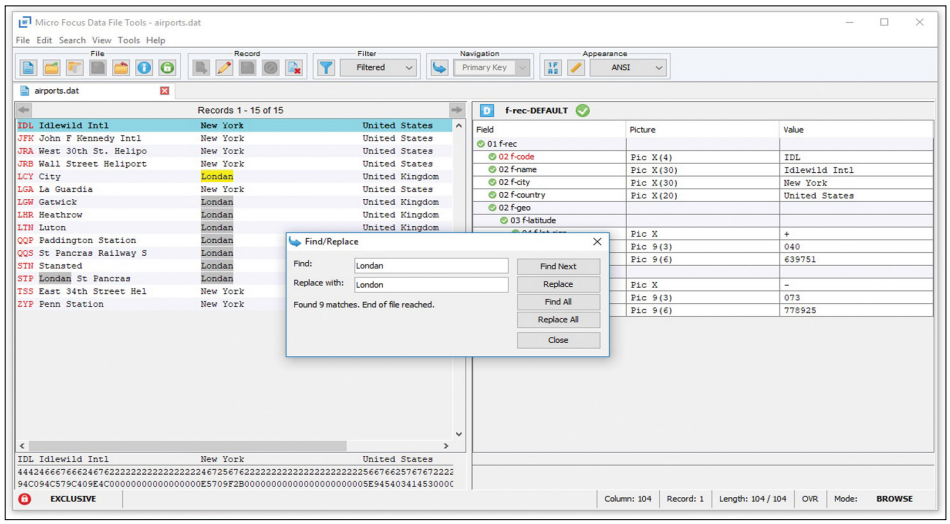

Figure 3. Production Data File Editor for VSAM/QSAM Formats

- ESCWA JSON API to support integration with third-party operations management tools
- Full support for applications running in either EBCDIC or ASCII

Scale-Out "Sysplex-Like" Architecture

- Applications can be deployed onto multiple Enterprise Server regions that can be managed as a single image and scaled out on-premises, in cloud instances, or in containers to support predictable application performance and system throughput
- Multiple instances of the deployment engine remove single points of application failure. One Enterprise Server instance failing will not interrupt business continuity with capacity being shared with other regions whilst new instances are automatically started using industry standard functionality like Kubernetes.
- Easier operational maintenance and serviceability of active systems with Performance and Availability Clusters that allow participating Enterprise Server regions to operate and be managed in concert.

Web Interface for Administering and Configuring Enterprise Regions

- Single Web UI for managing all Enterprise Server assets regardless of where they reside in the hybrid infrastructure.
- Simplifies system administration when managing Performance and Availability Clusters and shared Scale Out Repositories including auto discovery of members for Kubernetes deployments.
- Exposed admin functions through JSON services ensures applications deployed under Enterprise Server can be operated as part of an enterprise operations management policy.

Comprehensive Data Access Capabilities

- Full file handler support for mainframe VSAM and QSAM file types, Partitioned Datasets (PDSs) and Generation Data Groups (GDGs)
- Relational Database support including Microsoft SQL Server, IBM DB2 LUW, Oracle, PostGres and MySQL
- An IMS DL/I compatible database to rehost IMS-DB applications without updating data model or application code

- Remote access to mainframe data during gradual workload redistribution projects via any popular third-party middleware such as Microsoft BizTalk and IBM DB2 Connect.
- Data File Editor for secure file browsing and editing with copy/cut/paste, find/replace and content filtering. Supports in place update or creation of a new version.

High Availability Option for Mainframe Data File Replication

- VSAM and QSAM data files can be hosted in a relational database which provides data transactionality, replication, and high availability without changing any of the underlying COBOL and PL/I application logic
- Support is provided for PostGres, MS SQL Server, IBM DB2 and Oracle on Linux and Windows
- Tooling supports the automatic creation of database table structures and loading and unloading of data files.
- Data Files can be moved incrementally with simple configuration options to support a transition of datasets to an RDBMS

Host DB2 Run Time Compatibility Options to Minimise Application Change

Host Compatability Option provides runtime support to minimise SQL updates whe re-hosting DB2 based applications to the target Relational Database. Supported database targets are:

- Microsoft SQL Server
- IBM DB2 LUW
- PostgreSQL (new in 8.0)

Flexible and Comprehensive Security

- Support for a RACF compatible security capability, to enable the reuse of existing mainframe security rules for authentication and application-level authorisation
- Support for Long User Name and Password
- Multi-factor authentication through Micro Focus Advanced Authentication Server
- Secrets Vault to support storage passwords or sensitive information using a common facility to encrypt data using OpenSSL crypto functions
- Support for TLS 1.3

Cross-Platform Deployment Environment for Mission-Critical Workloads

- High performance and scalable deployment engine for moving IBM mainframe applications to distributed systems or across cloud infrastructures
- Wide range of Linux, UNIX and Windows platforms supported on-premise, in the cloud or in Docker containers with an architecture to support modernisation on 32 and 64-bit environments:
- Web services support with J2EE-compliant access to Java application servers
- Connectivity to CICS z/OS from CICS systems running on Linux, UNIX or Windows; CICS Inter-System Communication (ISC) including support for two-phase commit
- Automation of common Enterprise Server functions through JSON Services and Integration with popular third-party products to provide Print, Job and Operations Management

- Proven implementation methodology used by hundreds of customers to support the successful transition and production deployment of applications and data to the Enterprise Server platform
- 24x7 access to an award-winning global product support organisation

System Requirements and Platform Support

Java
- Adoptium's OpenJDK Temurin 11, 17
- Oracle Java 8/1.8

Java Application Servers
- Tomcat 10
- JBOSS EAP 7.4
- Oracle WebLogic 12.2.1, 14.1.1
- IBM WebSphere 8.5.5, 9
- IBM WebSphere Liberty 21

Database Support
- IBM DB2 LUW 11.1, 11.5
- Microsoft SQL Server 2016. 2017, 2019
- Microsoft Azure SQL Database
- Microsoft Azure Managed Instance
- Oracle 19*c*, 21*c*
- Postgres 11.x, 12.x, 13.x
- Amazon Aurora for PostgreSQL 3.x, 4.x, 13.x
- MySQL 8

Redis
- 3.2 4,0 5.0 (Memurai 1.0.10)

Oracle Coherence
- 14.1.1.0.0

Platforms

Microsoft Windows
- Windows 10, 11
- Windows Server 2016, 2019, 2022

SUSE
- 12 SP4 and above 64-bit only Intel and System z
- 15 64-bit only Intel and System z

Red Hat
- 8.x on Intel
- 8.x on System z

Oracle Linux
- Red Hat Compatible Kernel 7.x, 8.x

IBM AIX
- 7.1, 7.2, 7.3

Solaris
- 11 SPARC and Intel

Ubuntu
- 18.x, 20.x

Centos
- 7.x

AWS
- Linux 2

Docker
- Community and Enterprise Editions

Kubernetes
- 1.15

Windows Server 2016
- CE 17.09.0-ce-win33
- EE 17.06.2-ee-6

Red Hat
- CE 1.12.6

SUSE
- CE 17.04.0