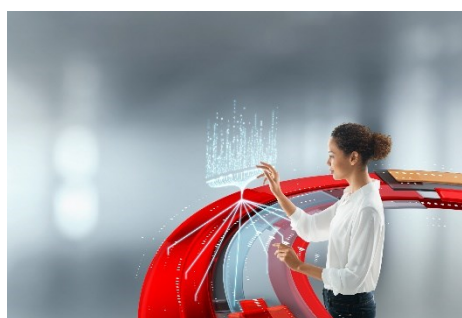# Data Sheet
Fujitsu FlexFrame® Orchestrator V1.9A Management Software

INNOVATIVE IT MANAGEMENT FOR REAL-TIME ENTERPRISES WITH THE FLEXFRAME ORCHESTRATOR MANAGEMENT SOFTWARE

The FlexFrame Orchestrator management Software provides an open management platform that enables central and transparent management of SAP ERP environments and SAP HANA infrastructures including SAP S/4HANA in one solution. The consistent administration, from the hardware layer to the application layer, extensive automation and integrated high availability, reduce workloads, all resulting in higher operational efficiency. FlexFrame Orchestrator enables enterprises to implement innovations from SAP much faster, making the operation of their SAP environments simpler, more efficient and less expensive. Customer benefits include high operational security of the entire SAP environment, consistently optimized processes and considerable cost savings.

In addition to the completely pre-configured, pre-tested, and pre-installed delivery as a FUJITSU Integrated System PRIMEFLEX® for SAP Landscapes, including all relevant HW and SW components, Fujitsu also offers FlexFrame Orchestrator as an open solution by lifting the restrictions that had applied to certain hardware and software components. More users can thus take advantage of the benefits offered by the FlexFrame technology. A certification program ensures that FlexFrame Orchestrator works smoothly and seamlessly with data center components from third-party suppliers.

HIGH PERFORMANCE AND AVAILABILITY FOR SAP HANA ENVIRONMENTS

FlexFrame Orchestrator can be integrated in heterogeneous data center environments without interrupting live operations. It provides highly developed, integrated management functions to set up and run an SAP HANA-optimized infrastructure. Implementation, operation and enhancements have high levels of automation. To ensure efficient provisioning of optimal performance, system resources can be allocated dynamically, and workloads can be distributed with flexibility.

In addition, FlexFrame Orchestrator provides a unique high-availability concept for infrastructures running SAP HANA. Business-critical applications can for example be backed up by several failover servers whereas fewer critical services may share one failover server. Disaster-resilient two site deployments can also be implemented without having to take additional steps, e.g. the implementation of complex cluster technology.

INTEGRATED SERVER VIRTUALIZATION

Virtualization concepts play a fundamental role regarding flexibility and efficiency in IT environments. FlexFrame Orchestrator ensures a highly virtualized approach for SAP software landscapes. In addition to the virtualization of the SAP software and virtual IP addresses, FlexFrame also includes the use of virtualized servers since applications nodes can be based on leading virtualization technology with VMware ESX or SUSE KVM.

Consequently, each SAP application can be started on any virtual or physical server in the FlexFrame Orchestrator environment. SAP applications can be relocated from any virtual server to any physical server and vice versa at any time. As a result, the application can be moved to the system with the best suited resources without any additional installation work.

All installed and configured resources are controlled by the FlexFrame Control Center. It can be assumed that an SAP environment basically consists of a mix of virtual and physical servers. The uniform management of all resources – virtual or physical – is therefore an important requirement for the IT infrastructure. Central management of the SAP services also offers many advantages in the event of a fault. If a server fails, the SAP application is automatically booted on a virtual or physical substitute system.

ROLE-BASED ACCESS CONTROL

Role-based access control (RBAC) is an approach to restrict system access to authorized users for computer systems security. Roles are created within an organization for various job functions. The permissions to perform certain operations are assigned to specific roles. Members of staff (or other system users) are assigned particular roles, and through those role assignments acquire the permissions to perform particular system functions.

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IT MANAGEMENT OPTION: ACCOUNTING, PERFORMANCE AND CAPACITY MANAGEMENT

FlexFrame Orchestrator offers out-of-the-box efficient IT management functionality as "built-in" functions without installing further third-party components. This reduces the cost of the IT management process. The IT management option addresses:

- Event and fault management
- Performance and capacity management
- Accounting management

This innovative concept means that the management information of the network and server components inside a FlexFrame environment can be used and collected via a combined repository in a standardized structure. The solution provides key performance indicators, such as CPU, memory, workload in SAPS. The SAPS figures, which can be added and charged over different hard-ware platforms, are calculated from the CPU load and the maximum SAPS power of a server.

The advantage is in the simple and rapid use of the performance functions to integrate new nodes, application units and services into the concept. The application and database units can be distributed to any node within a FlexFrame Orchestrator. These changes are automatically detected by the FlexFrame performance functions.

SAN STORAGE SUPPORT FOR DATABASES

One base technology for the flexible, dynamic management platform for SAP services is the Network Attached Storage. However, in some special cases a higher performance is needed, e.g. to reduce the start time of a real big SAP HANA data base.

Therefore, FlexFrame Orchestrator even allows the use of SAN-based storage on bare-metal servers for the database data files (sapdata) and database log files (saplog) of a SAP system.

FLEXFRAME ORCHESTRATOR LICENSE

Please note that the use of the standard FlexFrame Orchestrator features is licensed via the base SID runtime license.

However, a separate runtime license is necessary for the following optional enhanced and additional functionalities:

- Server virtualization via VMware vSphere ESX
- Server virtualization via Linux KVM
- Role-Based Access Control (RBAC) and Accounting
- SAN Support for databases on bare-metal servers

Main Features and benefits
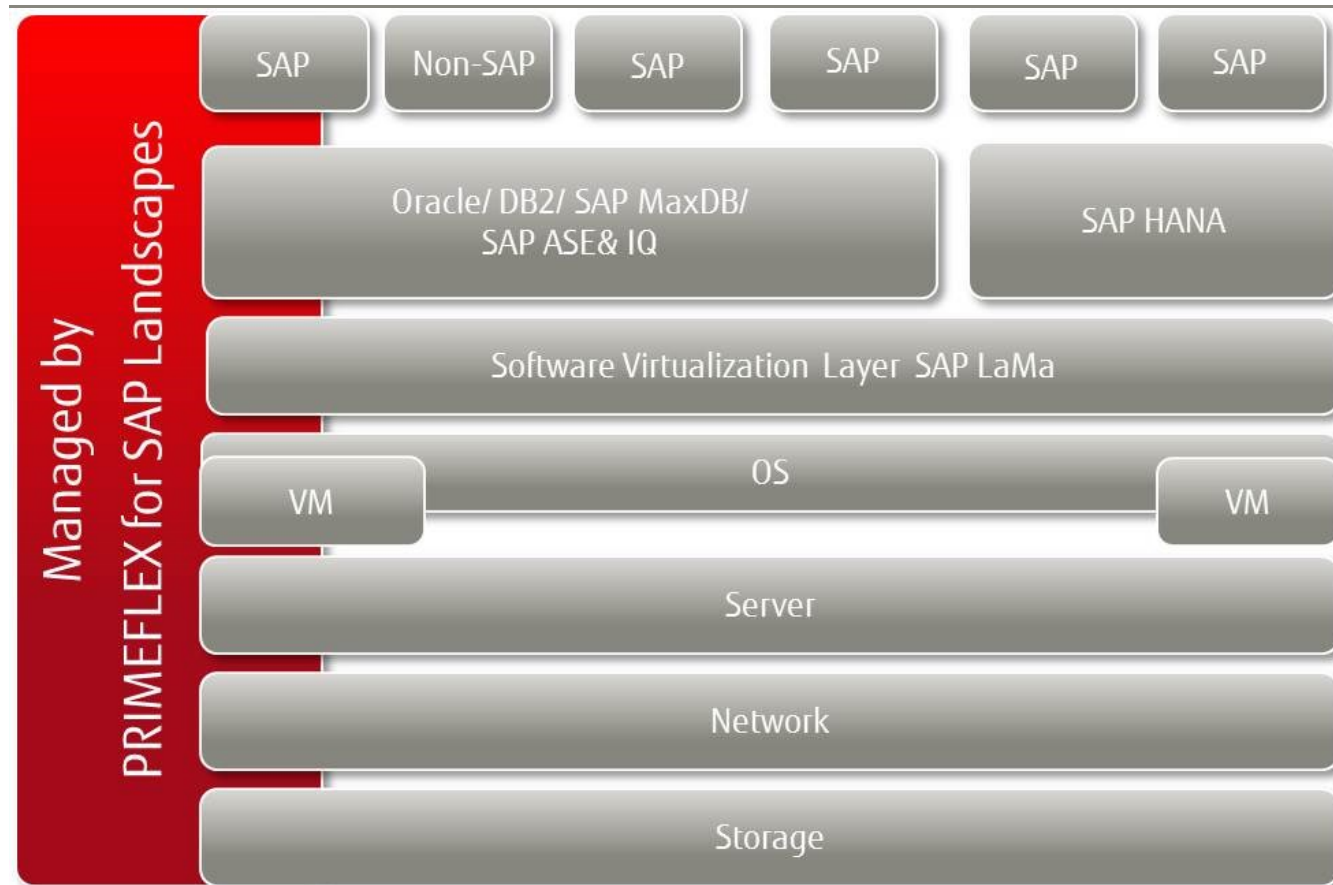
Main features	Benefits
■ Uniform and consistent management of classical SAP operations and SAP HANA infrastructures including S/4HANA	■ Reduces the complexity of SAP infrastructures
■ Comprehensive automation of administration and maintenance tasks	■ Simplifies and accelerates the provisioning of SAP functionality and innovation – always with the right level of performance and availability
■ Consistent administration of physical and virtual resources	■ Drastically lowers the cost of investment and operation
■ Integrated automatic high availability – even for SAP HANA	■ Simplifies and accelerates infrastructure deployment, operation and maintenance
■ Support for every IT provisioning model	
■ Support for hardware from other vendors (certification program)	■ Combines classical SAP operations and SAP HANA infrastructures
■ Centralized administration	■ Can be integrated in every data center environment

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Technical Details

General specification

Release Information for FlexFrame Orchestrator V1.9A	This Release Information is a summary of the major extensions, requirements & restrictions and operating information concerning FlexFrame Orchestrator V1.9A. Thus, this work of reference outlines the scope of support within FlexFrame Orchestrator V1.9A.
FlexFrame Orchestrator V1.9A Support Matrix	The relationship between supported servers, storage subsystems, network switches, operating systems, databases and SAP software is shown in this matrix. The FlexFrame Orchestrator Support Matrix is available from our sales representative. This document describes the current valid support situation.
Note for using RBAC	The RBAC functionality is realized for all FlexFrame administration commands and scripts, which operate solely on the control node. In addition, there are further administration commands (normal system administration commands) which operate from the local application node, too. These functions need root rights or the use of sudo command and are not covered by RBAC.

Hardware Components

Physical Control Nodes	PRIMERGY Rack Server:	RX2540 M7/M6/M5/M4, RX2530 M7
KVM Nodes for Virtual Control Center	PRIMERGY Rack Server: PRIMERGY Multi-Node Server: PRIMEQUEST Server:	RX2540 M7/M6/M5/M4, RX4770 M7/M6/M5/M4/M3 CX2560 M5/M4 PQ3800B2/B, PQ2800B3
Application Nodes	PRIMERGY Rack Server: PRIMERGY Multi-Node Server: PRIMERGY Blade Server: PRIMEQUEST Server:	RX2530 M7/M6/M5/M4, RX2540 M7/M6/M5/M4, RX4770 M7/M6/M5/M4/M3 CX2560 M5/M4 BX2560 M2, BX2580 M2 PQ3800B2/B, PQ2800B3
Hypervisor Nodes	PRIMERGY Rack Server: PRIMERGY Multi-Node Server: PRIMERGY Blade Server: PRIMEQUEST Server:	RX2530 M7/M6/M5/M4, RX2540 M7/M6/M5/M4, RX4770 M7/M6/M5/M4/M3 CX2560 M5/M4 BX2560 M2, BX2580 M2 PQ3800B2/B, PQ2800B3
Storage	NetApp FAS or AFF Systems and V-Series equipped with ONTAP release: 9.12.1/9.11.1/9.10.1/9.9.1/9.8/9.7/9.6/9.5/9.4/9.3/9.2P2/9.1/ 8.3.2 in cluster mode or ONTAP 8.2.4 in 7-Mode	
Network Switches	Cisco Nexus 9336C-FX2 Cisco Nexus 9236C Cisco Nexus 93180YC-EX Cisco Nexus 93180YC-FX3 Cisco Nexus 93240YC-FX2 Cisco Nexus 93360YC-FX2 Cisco Nexus 9348GC-FXP Cisco Nexus 9372 PX Cisco Nexus 55xx/55xx Series Extreme/Brocade VDX6740	100/40/10 GbE 100/40/10 GbE 100/40/10/1 GbE 100/40/10/1 GbE 100/40/10/1 GbE 100/40/10/1 GbE 1 GbE 10/40 GbE 10/1 GbE 10 GbE
Professional Services	Installation, Configuration, Maintenance, Support	
Further Information	Further details on the individual product specifications for the described components can be found in the relevant official Fujitsu data sheets and descriptions. The product specification as set out in these product data sheets will also remain applicable in case such infrastructure components are used in conjunction with FlexFrame Orchestrator V1.9A.	

Software Components

Control Nodes	SUSE SLES for SAP Applications 15 SP4 or SUSE SLES 15 SP4 plus SUSE SLES 15 HA Extension
Application Nodes	SUSE SLES for SAP Applications or SUSE SLES12 SP5 and 15 SP5 / SP4 / SP3 / SP2 / SP1
Databases	MaxDB 7.9 / 7.8 / 7.7 / 7.6 Oracle 19 / 18c / 12c / 11g / 10g IBM DB2 11.5 / 11.1 / 10.5 /10.0 / 9.7 / 9.5 / 9.1

	SAP Sybase ASE 16.0 / 15.7 SAP Sybase IQ NLS 16.1 / 16.0 SAP HANA DB 2.0 SPS01 -SPS07 (includes Multi-Tenant Support; SingleNode with/without HANA System Replication, MultiNode with/without HANA System Replication, Non-Volatile Persistent Memory Support, fast-restart Option) SAP HANA DB, 1.0 SPS12 (includes SingleNode with/without HANA System Replication, MultiNode with/without HANA System Replication)
SAP Software	Regarding SAP software, FlexFrame Orchestrator V1.9A supports SAP systems based on the above-mentioned databases and the following kernels or bases by SAP: SAP WebAS 7.0 / 6.40 SAP NetWeaver 7.5 / 7.4 / 7.3 / 7.2 / 7.0 SAP HANA Software 2.0 SPS01 – SPS07 / 1.0 SPS12 S/4HANA 2022 / 2021 / 2020 / 1909 / 1809 BOBJ – Business Objects Enterprise 4.3 / 4.2 SBOP – SAP Business Objects Platform 4.2 CMS – Content Server 7.53 / 6.50 MDM – Master Data Management 7.1 SMD – Solution Manager Diagnostics 7.53 /7.4 / 7.3 TREX – Search and Classification 7.1 Web Dispatcher 7.5 / 7.4 / 7.3 Be aware that restrictions by SAP's "Product Availability Matrix" are still valid.
VMware	VMware vSphere ESXi 8.0 / 7.0 / 6.7 / 6.5

Distribution; Implementation; Documentation & Support

User Interface	English
Installation	Realized from FlexFrame consultants certified through Fujitsu in accordance with the installation guide and the HW Characteristics documents.
Documentation	User manuals are part of the media CD or can be downloaded from https://support.ts.fujitsu.com/IndexDownload.asp.
User Skills	Knowledge of FlexFrame Orchestrator is presumed. Installation, configuration, and operation require detailed knowledge of the FlexFrame® Orchestrator management software, the operating systems and of SAP Basis.
Conditions	This software product is supplied under conditions described in our current license agreement.
Warranty	Class: A Closure of a FlexFrame Orchestrator SolutionContract is mandatory.
Product Support Lifecycle	End of Extended Support: 31.12.2025 To request further support, please reach out to your sales representative.
Media	Control Node - Image (DVD) Application Node – Image (DVD) Service and Documentation (DVD)
Ordering and Delivery	This software product may be obtained from your local Fujitsu sales representative / regional office

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More Information

Fujitsu OPTIMIZATION Services

In addition to Fujitsu FlexFrame Orchestrator Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

Dynamic Infrastructures
With the Fujitsu Dynamic Infrastructures approach, Fujitsu offers a full portfolio of IT products, solutions and services, ranging from clients to datacenter solutions, Managed Infrastructure and Infrastructure as a Service. How much you benefit from Fujitsu technologies and services depends on the level of cooperation you choose. This takes IT flexibility and efficiency to the next level.

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More information

Learn more about Fujitsu FlexFrame Orchestrator, please contact your Fujitsu sales representative, Fujitsu business partner, or visit our website.
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Fujitsu green policy innovation

Fujitsu Green Policy Innovation is our worldwide project for reducing burdens on the environment. Using our global know-how, we aim to resolve issues of environmental energy efficiency through IT. Please find further information at:
http://www.fujitsu.com/global/about/environment/

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