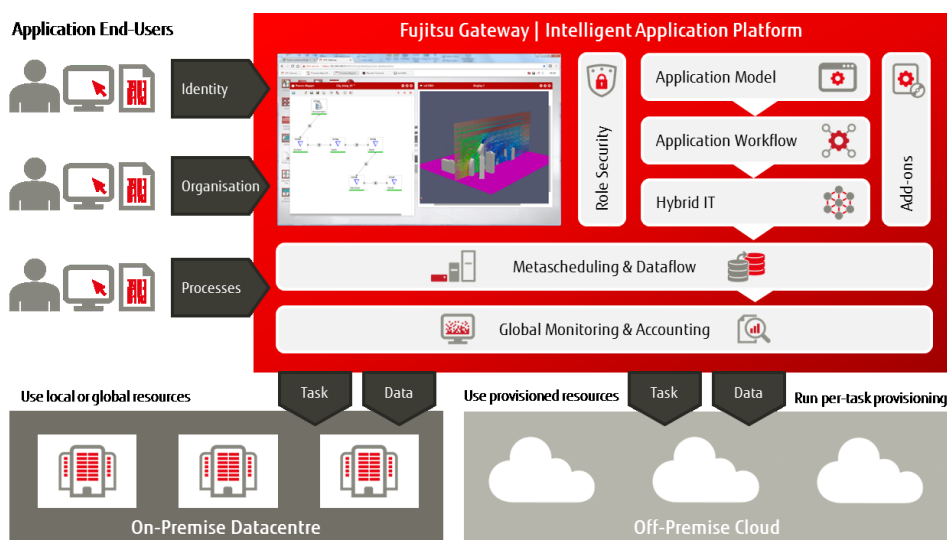# Datasheet
FUJITSU Software Gateway V1.4

Intelligent Application Platform to transform simulation, analysis and learning
application workflows onto hybrid IT frameworks

FUJITSU Software Gateway is an Intelligent Application Platform that provides a base for transitioning simulation, analytical and learning applications onto flexible, dynamic or collaborative IT frameworks. Gateway enables organizations to scale out their activity, federate dispersed operations, and integrate business processes.

Hybrid IT architectures provides companies with scale, capability and agility, and cover any mix of dispersed on-premise datacenters, collaborative resources and public or dedicated cloud. How you define this mix may change. What Gateway provides is a model of end-user applications separated from infrastructure, self-service tools to create global dynamic workflows, and intelligent orchestration of these processes across the hybrid IT environment. It is a platform for both batch and interactive applications, and embraces domains including simulation, machine learning (also deep learning) and big data analytics. As hybrid IT systems diversify there is now an interest to use applications within their own environment container. Gateway can

work with both native applications and container frameworks such as Docker or Singularity (an HPC-specific container system).

The Gateway Application Platform is built around a no-SQL database that stores methods, workflows, identities, roles, mount points, etc. Around this scalable core compute systems and data resources are connected through agents providing specific capabilities. For user and administrator access Gateway includes a versatile web desktop. Alternative interfaces can also be connected through its open REST API.

 Gateway can be deployed incrementally, starting from a few applications and resources, users and teams. This scalable approach is matched by a token-based pricing model, allowing the business to integrate the platform across its application portfolio as a controlled self-service process.

Features and benefits

Key features	Benefits
Application Model	
■ Gateway Application Management organizes and authorizes end-user access to global application methods. ■ Dedicated editor for self-service method creation, with version control support. Import and abstract your custom scripts. ■ Model defines input and output variables, method action or logic, hybrid IT server environment, and application result monitors.	■ Enable applications to be used on any hybrid IT resource, independent of IT infrastructure. ■ Simple facility for authorized end-users to define and publish proven application methods. ■ More robust and traceable application usage. ■ Store and retrieve your collection of job parameters
Application Workflow	
■ Gateway Process Mapper allows end-users to define, control and manage data flow graphs to automate a series of tasks in a sequence. ■ Process Maps link application methods defined within the Application Management store. ■ Workflows are dynamic – they can be extended during or after execution, cloned and restarted from any point.	■ An advanced workflow editing and orchestration system designed for today's hybrid IT environment. ■ Adaptable to changes during the process execution, replay part or full processes for validation ■ Encode and automate key business processes to embed competitive and innovative knowledge of the organization.
Hybrid IT	
■ Application models are standardized method of business logic. Run-time on different systems – on- or off-premise – is defined separately within the model. ■ Data mount points for multiple systems and networks are visible within the same view. ■ Gateway core database deployable singly or distributed across multiple machines. Separate database instances can be linked.	■ Application-level abstraction of a hybrid IT infrastructure. ■ Accelerate workflows while optimizing costs. ■ Stabilise and preserve business processes even if underlying infrastructure changes.
Role Security	
■ Gateway imports user accounts from external systems, such as LDAP and Active Directory. Inside the platform these identities can be structured into teams and projects, with defined roles in each. ■ Security applies to most Gateway customer objects, including data mount points, application methods and workflows, remote visualization servers, compute clusters and sites.	■ Augment security-in-depth with access mapped to business entity. ■ Controlled sharing of application models, workflows and data between team and/or project members. ■ Secure collaboration with partner organisations.
Meta-scheduling & Data flow	
■ Placement of application tasks can be defined on- or off-premise. ■ Data movement within a workflow can be managed implicitly, with automatic run directory creation. ■ Gateway stores all run-time data to for analytics and future learned scheduling.	■ Secure upload/download through browser web desktop app. ■ No need to explicitly move data in advance of each workflow task. ■ Automate retrieval of data from off-premise after task completion. ■ Same application method can seamlessly switch between on- and off-premise as needed.
Global monitoring & Accounting	
■ Comprehensive tracking of all jobs across global estate. ■ Live tailing and intermediate file access. ■ Tabulate and plot application result data. ■ Cumulative record of system and application data for every job and file movement. ■ Remote visualization of image files and graphical applications.	■ Instantly view, download, and track any output file in real time. ■ Dynamically track result data to assess computation progress. ■ Inspect and interact with 2D/3D image files, even during the application workflow. ■ Collate and audit combined hybrid IT consumption data.

Topic

Intelligent Application Platform

The growing use of hybrid IT configurations in theory allows organizations to precisely balance the mix of on- and off-premise resources to continuously variable workloads. Yet the delivery to end-users is often not as seamless as it could be. Fujitsu Gateway targets the needs of those users and their production application processes.
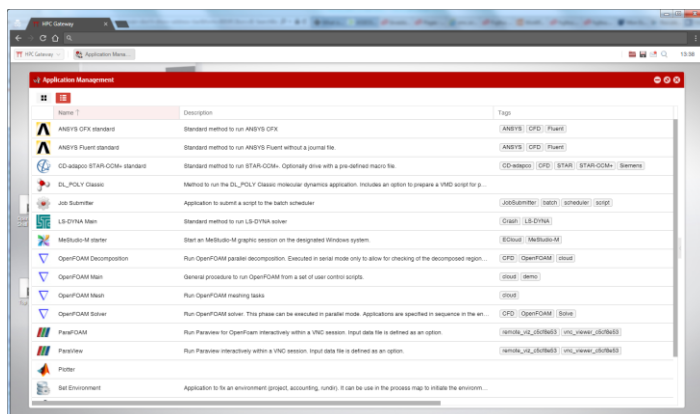
Application usage is specific to each business, shaped by their individual purpose and cumulative procedures. Gateway's hybrid IT approach is built around a model of such methods that enables organization to decouple application usage from IT infrastructure. In this way IT can continue to be adjusted to load and cost, while the simulation and analysis teams remain focused on delivering the insight and decisions that are the essence of competitive advantage.

At the core of Fujitsu Gateway is a scalable and flexible no-SQL database that stores all business objects and run-time data accumulated through production operations. Over time this data enables more intelligence and oversight for continued improvement and tuning of business processes.

Application model designed for hybrid IT

An application model is the template for the way end-users run their simulation and analysis tasks. They are constructed from proven scripts and select variables into a robust and portable method. Users can simply edit their own methods, or work with others from a shared catalogue.
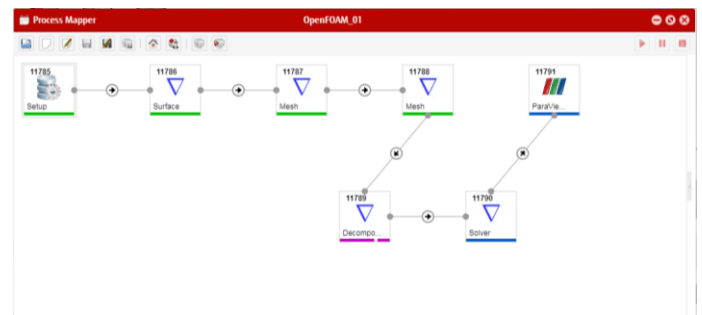
Localisation of the method for a given server or cluster is separated into a system environment section of the model. In this way the same method can be executed on various systems without ever changing the core logic – preserving the consistency and integrity of the model. A user sees a single interface to the application, wherever it may run in the hybrid IT space. The Gateway platform assigns the task to a server or cluster, and moves data in and out of the task.

Advanced dynamic workflow automation

Gateway Process Mapper allows users to easily define an automated sequence of tasks with drag-and-drop from the application catalogue. As the application model already separates the method from system such a process represents and full SaaS workflow.

Workflow can be saved as templates, shared and reused. But a workflow graph does not have to remain fixed. It can be extended by adding further application nodes into the sequence. This allows the user to steer a process or to build upon an initial series according to emerging results.

Cloud-bursting operation

So-called "cloud-bursting" is conventionally implemented through administrative actions to provision off-premise servers (with local cluster management or cloud provider APIs), then incorporate these into the on-premise batch resource manager. Gateway can work with this approach, but actually provides a much better alternative.

Since Gateway is a platform above the IT layer it is able to more fully orchestrate from an application workflow perspective.

- Span multiple batch resource managers between on- and off-premise clusters.
- Automate file transfer between on- and off-premise storage.
- Distribute core database across multiple sites for faster local access.
- Provision off-premise servers on-demand from a given task or workflow. (Currently available for particular cloud APIs.)

Adaptable licence model

Fujitsu Gateway uses token-based licensing. Different classes of business object or support level require different numbers of tokens. Tokens are usually acquired in blocks.

This approach allows customers to adjust their investment in line with usage and load.

Technical Details

Fujitsu Gateway uses a token-based annual license model. Tokens are required to activate function and scale usage in the Gateway platform. Different numbers of tokens can be consumed by different functions, and more tokens will be consumed as usage of the platform increases.

Functions of Fujitsu Gateway are classified as *built-in* or *addon*.

- Standard Built-in functions are provided within the base Gateway installation.
- Standard Addon functions are also generally provided within this base installation. These may be removed if not required.

Additional Addon functions may be available for updating the initial Gateway installation. Please consult Fujitsu for a description of the latest addons. Activation of any such update addons may require further license tokens to be purchased.

Standard Built-in		Description
Web Desktop	GUI	A web application provided as the end-user and administrator interface
User Management	Function	Organise user accounts by roles in teams and projects
Application Management	Function	Organise and run application models added to the Gateway platform
Application Editor	Function	Create application models in the platform and authorise to teams
File Explorer	Function	Access data across authorised hybrid IT sites, upload/download from client
Notepad	Function	Text editor for files within hybrid IT mount points
Task Monitor	Function	Interactive list of application jobs on hybrid IT servers, authorised and filtered
Addon Management	Function	Configure optional addon functions

Standard Addons		Description
Accounting	Function	Collate accounting data from batch resource manager, Excel export. (Currently only available for PBS Pro.)
Admin Dashboard	Function	Manage data mount points, remote terminal scripts, hybrid IT servers/clusters
Process Mapper	Function	Create and manage automated workflows of application tasks
Task Center	Function	Enhanced task monitor with dynamic run directory view and workflow hierarchy
Gateway Supervisor	Function	Administrative tool to monitor run-time issues from Gateway system logs
Image Viewer	Function	Open image and video files directly on a hybrid IT server
Remote Terminal	Function	Open a Linux shell or run interactive scripts on server or cluster head node
- Notes	Remote Terminal scripts are added by the customer. None are included or supported in the Gateway distribution, though samples are provided in the documentation.	
Cluster Watch		Query the cluster regularly based on wrapped scripts
- Notes	Cluster Watch wrapped scripts are added by the customer. None are included or supported in the Gateway distribution, though samples are provided in the documentation.	
VNC Viewer	Function	Launch VNC client within Gateway web desktop
- Notes	Requires TigerVNC package to be installed on the target servers	

Supported Environment		
Fujitsu Gateway Core Platform and Server Agents	Linux operating system	RHEL 6.x, CentOS 6.5 or greater, and compatible systems Microsoft Windows is not supported for hosting the core platform
	Batch resource manager	Altair PBSPro, OpenPBS, Torque, IBM Platform LSF, SLURM, SGE
	Java libraries	JAVA 8
Fujitsu Gateway Web Desktop	Web browser	Google Chrome version 60.0 or greater Internet Explorer version 8.0 or greater Mozilla Firefox version 50.0 or greater Earlier versions may function, but customer must contact Fujitsu for confirmation of support.

More information

Fujitsu products, solutions & services

Products
In addition to the **Fujitsu Gateway Intelligent Application Platform**, Fujitsu offers a full portfolio of other computing products.

Computing products
- Storage systems: ETERNUS
- Server: PRIMERGY, PRIMEQUEST, Fujitsu SPARC M10, BS2000/OSD Mainframe
- Client Computing Devices: LIFEBOOK, STYLISTIC, ESPRIMO, FUTRO, CELSIUS
- Peripherals: Fujitsu Displays, Accessories
- Software
- Network

Product Support Services with different service levels agreements are recommended to safeguard each product and ensure smooth IT operation.

Solutions
http://www.fujitsu.com/global/solutions
The Fujitsu solutions combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships. Fujitsu's Solutions include parts of one or more activity groups (e.g., planning, implementation, support, management, and training services) and are designed to solve a specific business need.
Infrastructure Solutions are customer offerings created by bringing Fujitsu's best products, services and technologies together with those from partners to deliver benefit to our customers' businesses.
Industry Solutions are tailored to meet the needs of specific verticals.
Business and Technology Solutions provide a variety of technologies developed to tackle specific business issues such as security and sustainability, across many verticals.

Services
www.fujitsu.com/global/services/
Several customizable Fujitsu Service offerings ensure that IT makes a real difference and delivers true business value. We do this by leveraging our extensive experience in managing large, complex, transformational IT programs to help clients in planning, delivering and operating IT services in a challenging and changing business environment.

Application Services support the development, integration, testing, deployment and on-going management of both custom developed and packaged applications. The services focus on delivering business and productivity improvements for organizations.
Business Services respond to the challenge of planning, delivering and operating IT in a complex and changing IT environment.
Managed Infrastructure Services enable customers to deliver the optimal IT environment to meet their needs – achieving high levels of IT service quality and performance for data center and end user environments.

Fujitsu green policy innovation

www.fujitsu.com/global/about/environment/
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:

More information

Learn more about Fujitsu, please contact your Fujitsu sales representative, Fujitsu business partner,
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