

Gateway to HPC Simplicity

# PRIMERGY HPC Gateway

ISC13, Leipzig

# Take advantage from a complete HPC offering



## PRIMERGY Server, Workstation



ETERNUS Storage

## Cluster Management & Operation

**FUJITSU**  
HPC Cluster Suite

FEFS

Cent OS

Gateway



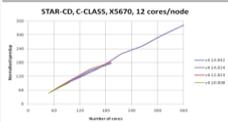
## ISV and Research Partnerships



PreDICT Initiative

Open Petascale Libraries Network

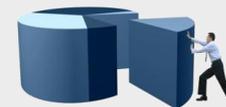
## Consulting and Integration Services



Sizing,  
design



Proof of  
concept



Integration into  
customer environment



Certified system  
and production  
environment



Complete assembly,  
pre-installation and  
quality assurance



Ready to  
Operate  
at delivery

Ready-to-Go

# Fujitsu HCS – the total solution approach



## Make IT Dynamic – Business Efficiency for HPC Solutions

- Optimal system configuration based on application needs, immediate system readiness and faster deployment
- Simplifies HPC usage and management for both current and potential users of HPC (“out-of-the-box” operation)

### HPC Cluster Suite

- Deployment (based on Fujitsu SVIM and Fujitsu CDM)
  - Integrates ServerView supplied drivers to the CDM repository
- Cluster Management
  - Node configuration
  - Monitoring and Alerting
- Comprehensive software coverage
  - Flexible choice of Workload Manager
  - Libraries, Compilers
  - Support for Parallel File Systems

### Value Add / Differentiation by Fujitsu

#### HPC Gateway - Integrated intuitive interface

- Provides simplicity in using the HPC Cluster and Application
  - Use resources more effectively
  - Broaden HPC and process reuse
  - Share and exchange data more widely

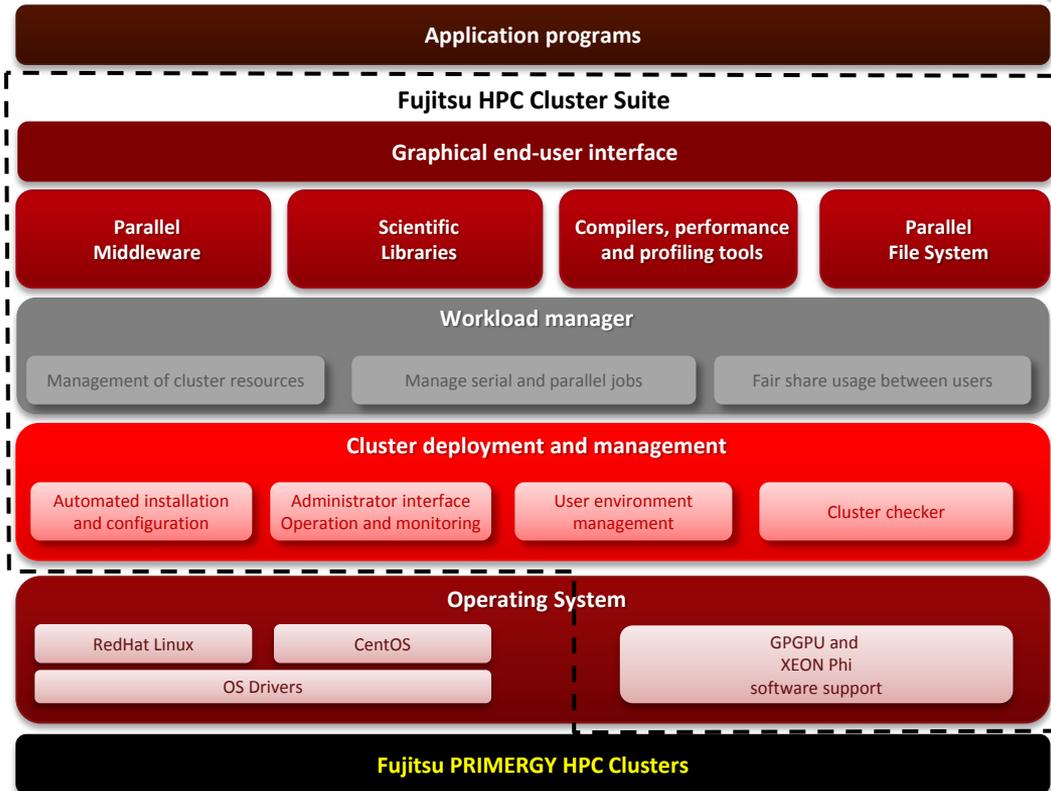
#### FEFS - optional Parallel File System

- Single file namespace across all nodes
    - Increases Storage performance
    - Required in large or high load I/O configurations
- Fujitsu Exabyte File System – FJJ developed (Lustre based)**

# The Fujitsu HPC Cluster Suite (HCS)



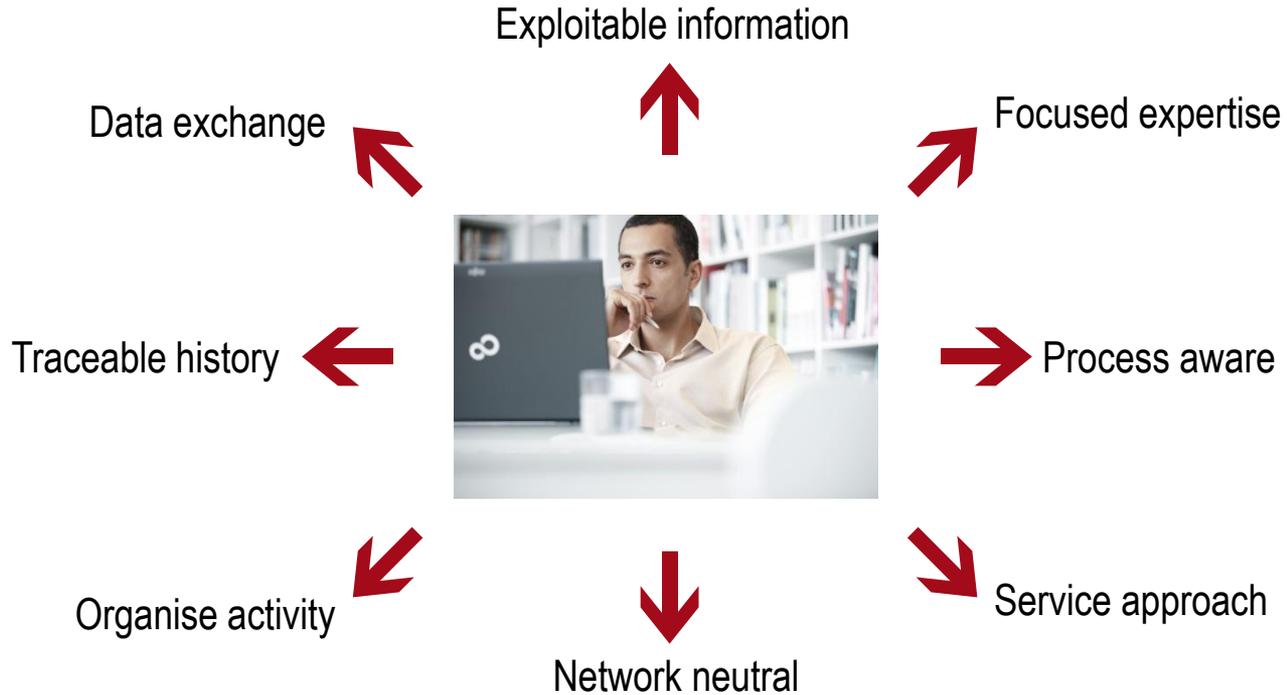
- Comprehensive software stack for managing Fujitsu PRIMERGY HPC clusters
  - Easy-to-use cluster management
  - Popular workload managers
  - General HPC Open Source Software
  - Highly scalable parallel file system
  - Graphical end-user interface for simplified usage
- Alliance with leading ISVs
- Fully validated HPC solution





Obtain **better value**  
from HPC investments.

Find and apply HPC  
knowledge in **new ways.**



Driving the need for a complete and simplified HPC environment

# Delivering HPC Simplicity – Bringing Answers



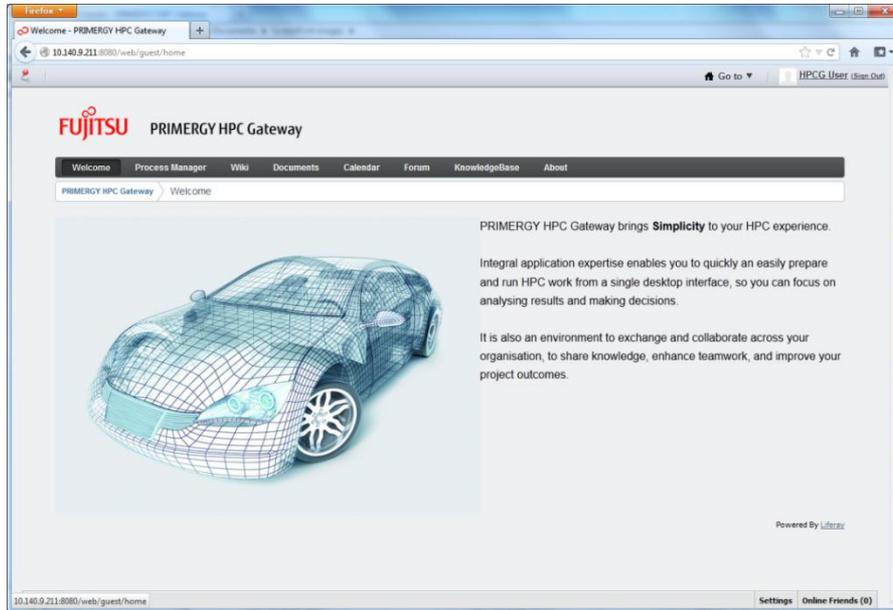
Integral Application Expertise.

Intuitive cluster desktop  
Tuned application processes  
Easy application on-boarding



# PRIMERGY HPC Gateway introduction

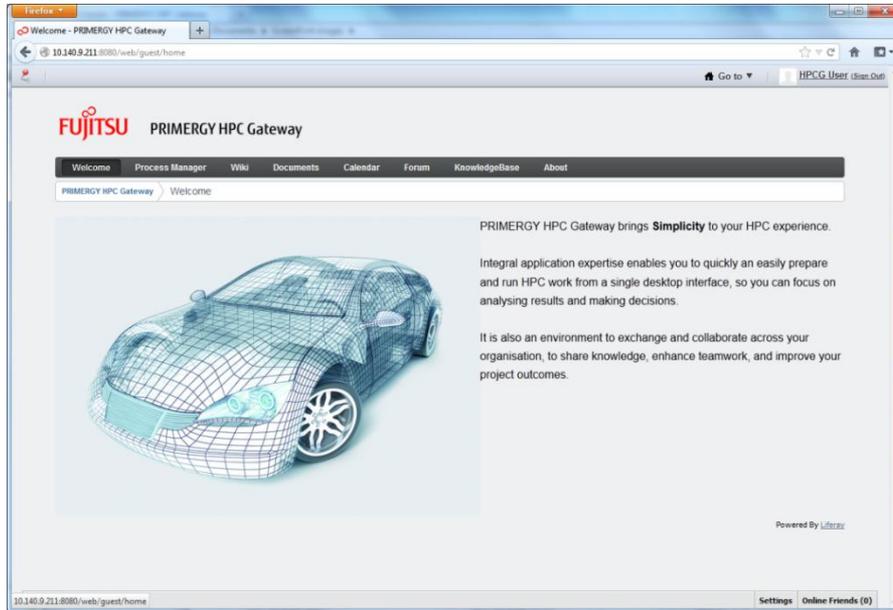
## Central user environment in FUJITSU Software HPC Cluster Suite



- User interface component of the FUJITSU Software HPC Cluster Suite
- Intuitive web environment incorporating application workflows, direct simulation monitoring, data access and collaboration
- Delivers value in **simplifying** HPC end-use and integrating application **expertise**, to tune business processes and better manage projects

# PRIMERGY HPC Gateway introduction

Central user environment in FUJITSU Software HPC Cluster Suite



“ The **simplicity** of web access, the **expertise** from agile application workflows and **clarity** of active reporting to tune your business processes and better manage project outcomes. ”

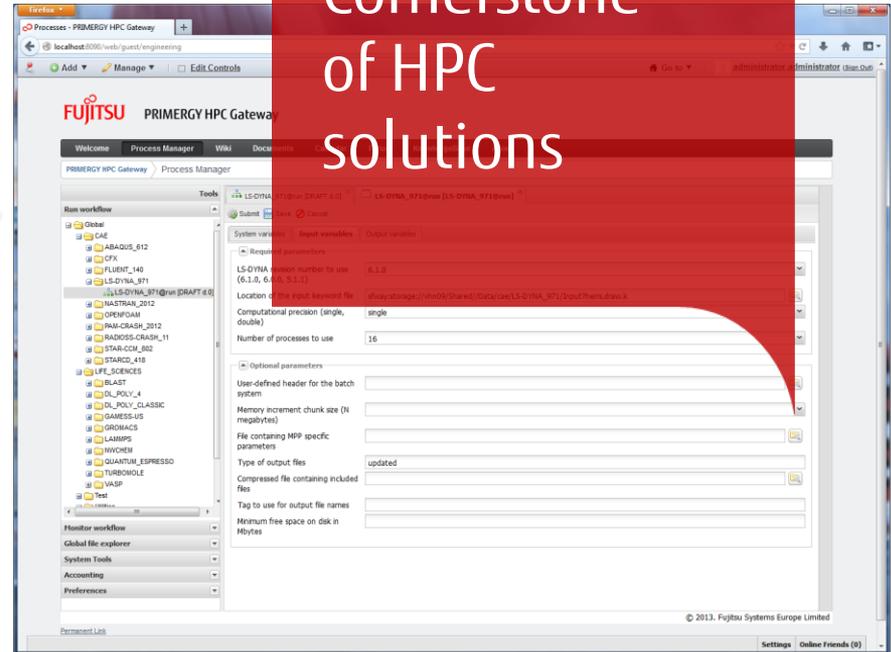
# Gateway Application Catalogue

Access key applications from main verticals

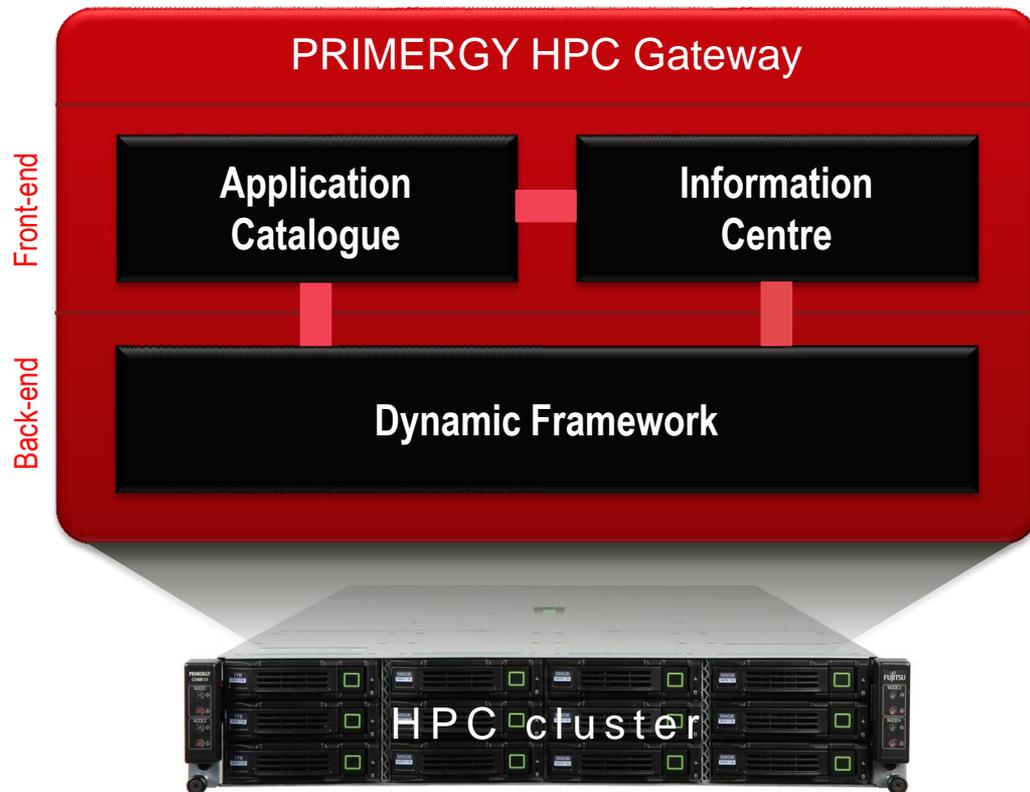


Application process expertise captured with designed-in workflows

Solution extended with self application on-boarding



# Gateway to your cluster



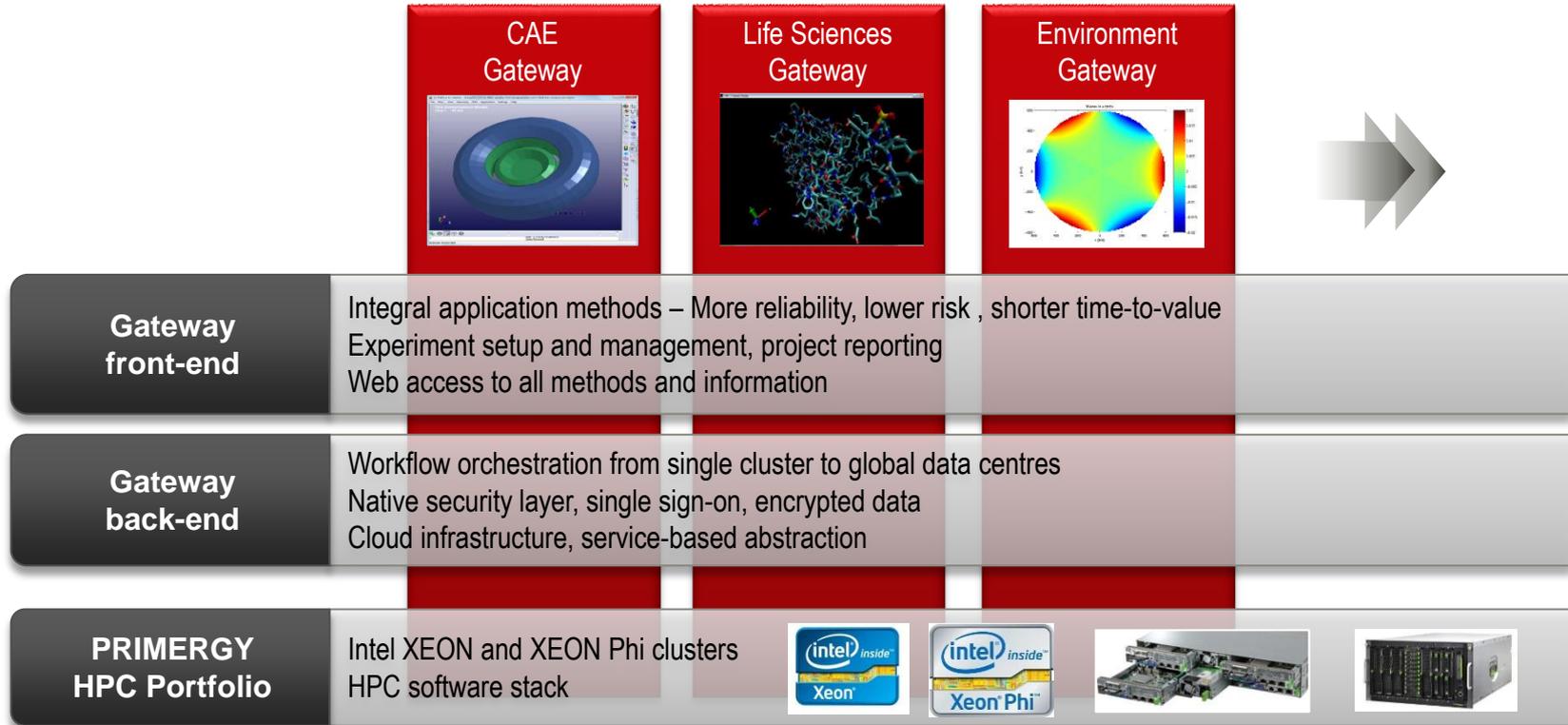
Integral expertise with domain focus

- Process execution and monitoring
- System and application reporting

Single sign-on to whole HPC environment

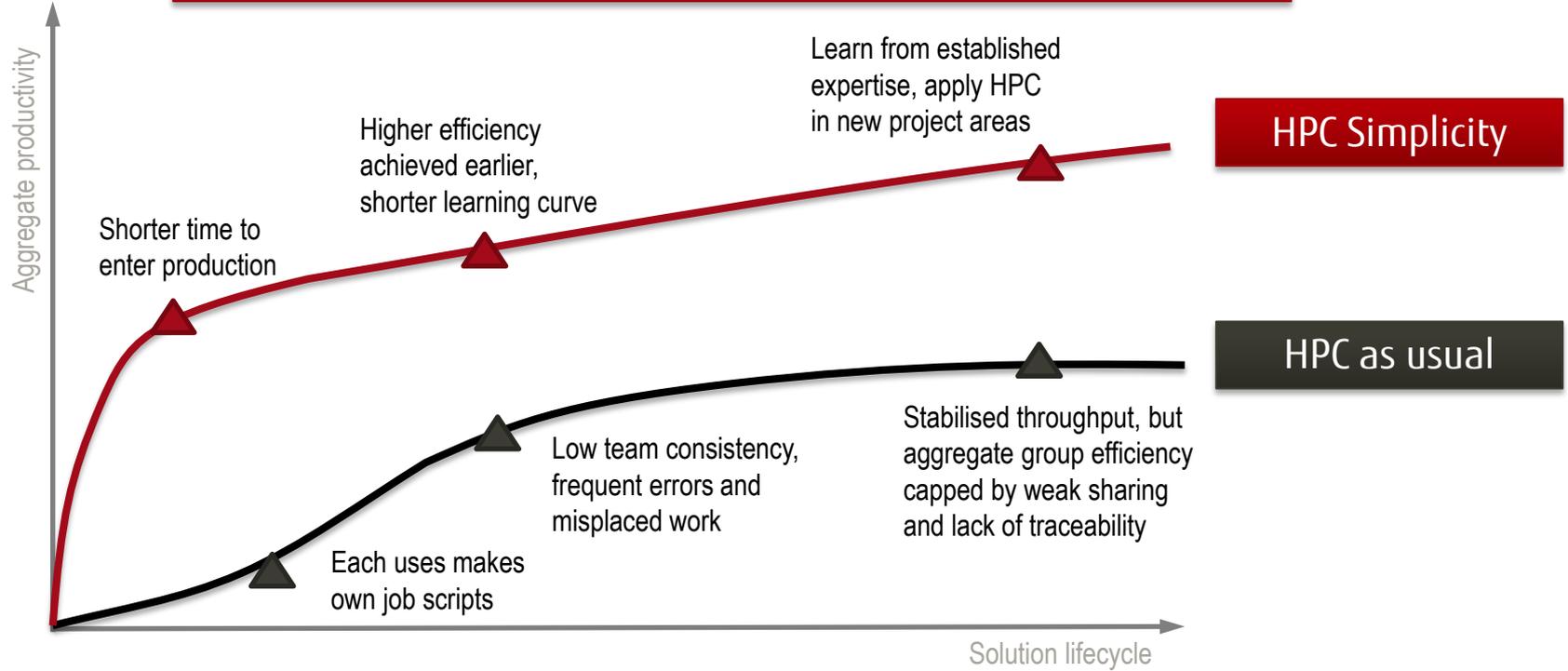
- Global orchestration and dataflow
- Native security layer

# Building out Gateway solutions



# Lifecycle advantages of HPC simplicity

Benefits continue grow after initial system deployment



# Running workflows / simplified use of HPC resources



- Just add parameters and run applications
- Monitor run status
- View execution status results

**Enter variables and run**

The screenshot shows the 'PRIMERGY HPC Gateway' interface. The 'Tools' menu is open, and the 'DL\_POLY\_Classic@run [DRAFT 4.0]' workflow is selected. The 'System variables' and 'Input variables' sections are visible, with 'DL\_POLY\_Classic@run [DRAFT 4.0]' selected. The 'Number of processors' is set to 16. The 'User-defined header for the batch system' is also visible.

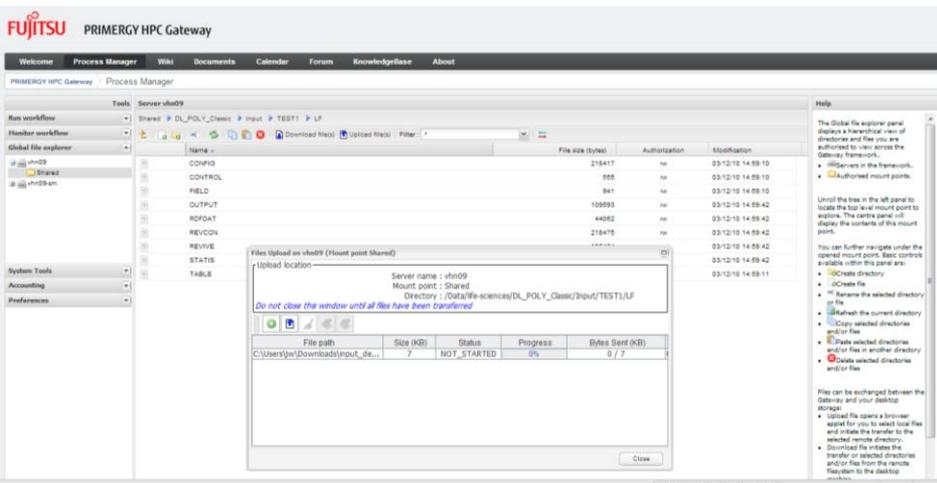
**Monitor execution status**

Instance num.	Name	Owner	Status	Creation	Finished
Name: Engineering1 (5 Items)					
514	Engineering1	administrator@example.com	✓	05/03/12 08:42:13	05/03/12 08:42:14
515	Engineering1	administrator@example.com	✓	05/03/12 08:42:15	05/03/12 08:42:16
520	Engineering1	administrator@example.com	✓	06/03/12 12:45:07	06/03/12 12:45:08
530	Engineering1	administrator@example.com	✓	09/03/12 15:03:32	09/03/12 15:03:35
531	Engineering1	administrator@example.com	✓	09/03/12 15:03:38	09/03/12 15:03:39
Name: STAR-CCM+ - Full workflow (2 Items)					
521	STAR-CCM+ - Full workflow	administrator@example.com	⚠	07/03/12 08:30:06	07/03/12 08:30:06
522	STAR-CCM+ - Full workflow	administrator@example.com	⚠	09/03/12 08:24:19	09/03/12 08:24:19
Name: STAR-CCM+ - New (1 Item)					
523	STAR-CCM+ - New	administrator@example.com	⚠	09/03/12 08:24:52	09/03/12 08:24:52
Name: WFL1 (7 Items)					
513	WFL1	administrator@example.com	✓	05/03/12 08:41:57	05/03/12 08:41:58
524	WFL1	administrator@example.com	✓	09/03/12 09:45:27	09/03/12 09:46:30
525	WFL1	administrator@example.com	✓	09/03/12 09:47:01	09/03/12 09:47:02
526	WFL1	administrator@example.com	✗	09/03/12 10:10:04	09/03/12 10:11:46
527	WFL1	administrator@example.com	✗	09/03/12 14:11:10	09/03/12 14:11:14

**View execution results**

The screenshot shows the 'View execution results' window for the 'WFL1' workflow. The window displays the execution output, including the job name, user, and the results of the simulation. The output shows the job name 'WFL1', the user 'administrator@example.com', and the results of the simulation, including the number of processors and the execution time.

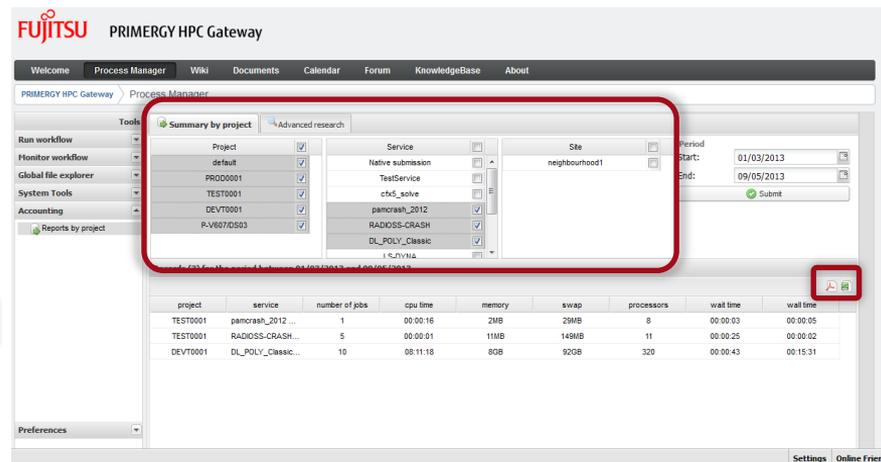
# Review results and project usage



- View data from any mount location (temp space, project space, archive space)
- Move data between locations or upload/download to/from an external location



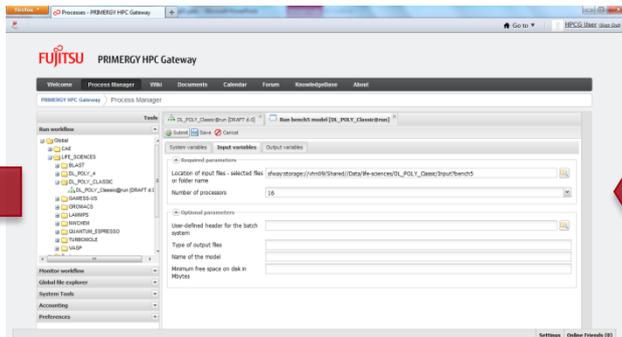
- Report usage by Project, application, user
- Filter and search consolidated accounts
- Export data for external analysis and report creation



# Automated Application Workflows (advanced)

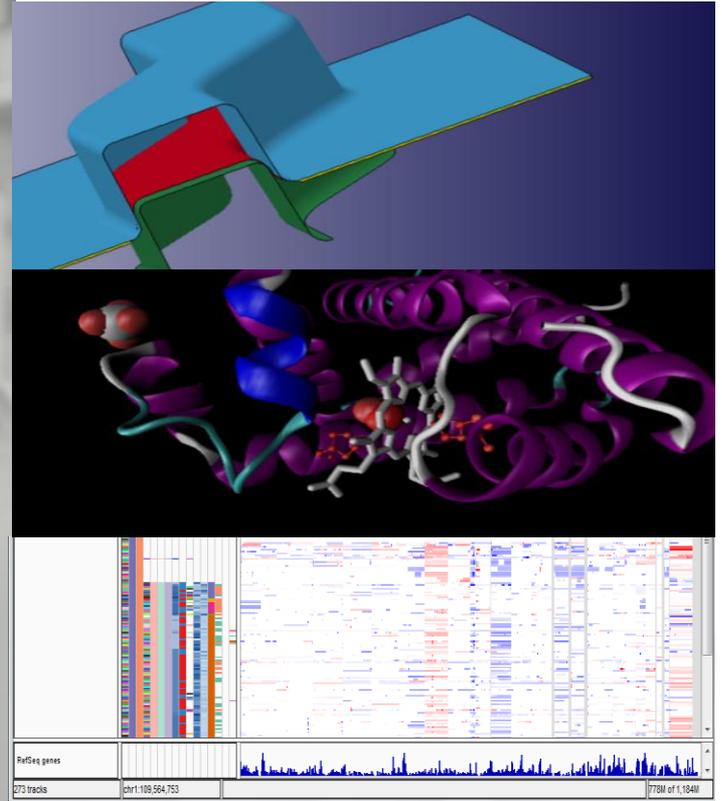
- Standardised best-practice methods
  - Encode business processes as structured automated workflows
- Higher transfer reliability
  - Implicit dataflow, optimized for large data volume
- Focus on research and analysis
  - Eliminate low-level actions, increase user productivity,
- Faster decisions
  - Programmed post-processing, filtering and reporting

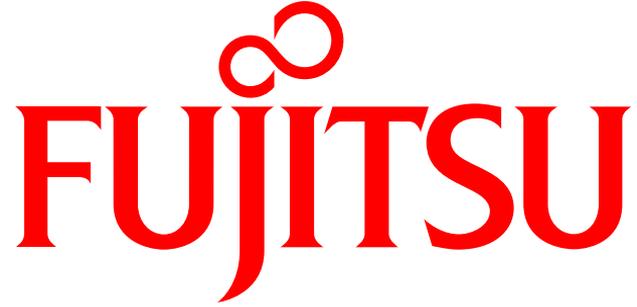
Usable with minimal learning  
Shareable optimal methods  
Scalability transparent to user



# Your Gateway to HPC Simplicity

- Access expertise in application methods without the IT pain
- Direct visibility on processes and experiments
- Traceability for assured and secure operations
- Scalable and Agile resources usable from single view





shaping tomorrow with you