JADE Operational Support

Operational Support Overview

Mark Fellows
Technical Operations and Support Group
Hartree Centre

STFC Daresbury Laboratory

ASTeC

Cockcroft Institute

Hartree Centre

Nuclear Physics

Scientific Computing

Hartree Centre – STFC Daresbury

HPC facilities:

- **Scafell Pike HPC**

- **QLM:** Quantum Learning Machine

- **Osprey:** Openstack based On-prem cloud

Hartree Centre – Training and Education Support

- **Data Science**

  These courses explore methods that can help your organisation to make the most out of your business data. Covering topics like how to collect and prepare data, machine learning and data science solutions, we'll provide tools and practical examples of how data analytics can help optimise your business processes and make data-informed decisions.

- **Artificial Intelligence and Modelling**

  These topics will inform the generation of real-time decision-making insights from data helping you to innovate, speed up processes and boost efficiency. From predictive maintenance to intelligent automation and the optimisation of tools and processes, our courses will walk you through how to embed these efficiently into your organisation.

- **HPC & Exascale Computing**

  Access to more powerful computing resources can increase productivity and speed up your calculations. Using a combination of theory and practical exercises, our courses will show you how to speed up your calculations and work at scale, so you use HPC more effectively and decide on the resources you need to maximise efficiency and value for your business.

- **Software Engineering**

  These courses cover the increasingly wide range of software engineering topics such as cloud, data engineering, IoT, data analysis workflows and data visualisation. They will guide you through current and future trends, show the latest tools and help you de-mystify jargon to understand how the latest technologies can benefit your organisation.

- **Emerging technologies**

  Our courses will help you to explore emerging digital technologies like quantum computing. They will guide you through current and future trends, show the latest tools become more familiar with the terminology and algorithms used and help you to see how their use can be of benefit to your organisation.

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JADE

- **Service launched 2017**

- **Bull Atos system**

- **Ubuntu based DGX stack**

- **22 DGX nodes**

JADE 2

System highlights:

- RHEL based DGX stack
- 63 DGX nodes
- Liquid cooled doors.
- DDN storage appliance

Key milestones:

- 14 Oct 2020: User Acceptance
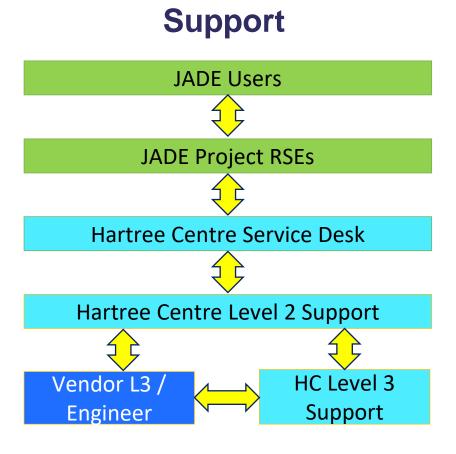- 11 Dec 2020 Service Acceptance

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JADE 2 - Utilisation

Number of project groups:

265

Number of slurm accounts:

922

Total number of jobs processed:

>530,000

Jade GPU Utilisation

UKRI Science and Technology Facilities Council

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Support and Governance

Support

JADE Users

JADE Project RSEs

Hartree Centre Service Desk

Hartree Centre Level 2 Support

Vendor L3 / Engineer

HC Level 3 Support
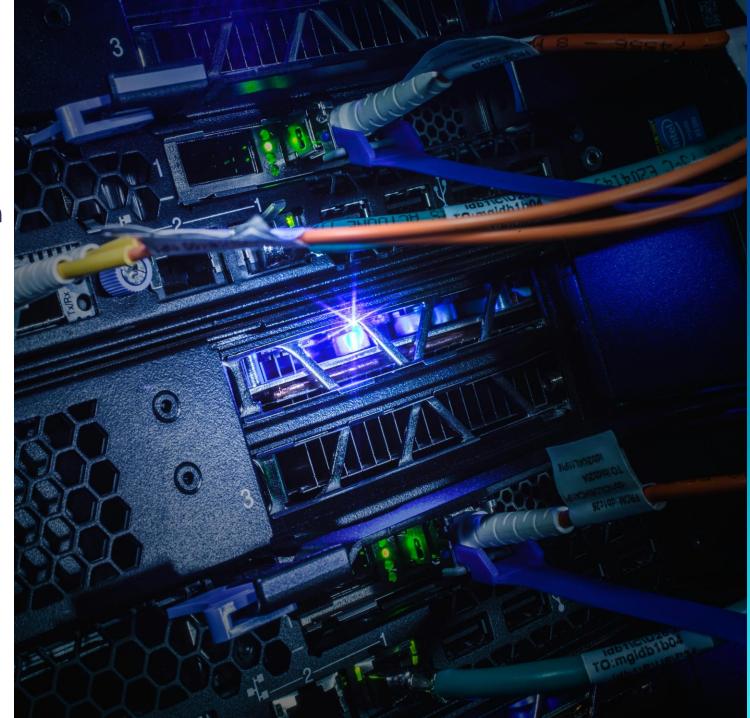
JADE 2: System Management

Management nodes:

- High Availability (HA) configuration

- 2x physical nodes

HA resources include:

- Deployment

- System logging

- Slurm

- DNS

- DHCP

- Authentication

System Monitoring

- **Prometheus**

- **Grafana**

- **NVSM Health**

- **Node Health Check (NHC)**

- **Proactive checks/logging**

- **DDN Insights**

Hartree - New Supercomputing Centre

Links

UKRI: https://www.ukri.org/

STFC: https://www.ukri.org/councils/stfc/

Daresbury Laboratory: https://www.ukri.org/who-we-are/stfc/locations/daresbury-laboratory/

Hartree Centre: https://www.hartree.stfc.ac.uk/

Hartree Training: https://hartreetraining.stfc.ac.uk/moodle/local/hartree/index.php

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Thank you – any questions?

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