

# Support Services



- Web site
- User support information
- Administration service
- Service information
- Conclusions
- References



The screenshot shows a Microsoft Internet Explorer browser window displaying the HPCx Home Page. The browser's address bar shows <http://www.hpcx.ac.uk/>. The page features the HPCx logo (CAPABILITY COMPUTING) and a main heading: "Welcome to HPCx - The UK's World-Class Service for World-Class Research". Below the heading is a navigation menu with buttons for Services, Support, Projects, Research, About us, Sitemap, and Search. The page is divided into several sections:

- Visitors:** Links for [About Us](#), [News](#), and [Events](#).
- Users:** Links for [Existing User Login](#), [New Users](#), [User Support](#), [Services](#), and [FAQ](#).
- Research:** Link for [Research Activities](#).
- Next Maintenance Session:** A notice stating "HPCx will be down from 12 noon until 12 midnight, 28th January for system maintenance." and "Loadleveler queues will be drained in an orderly fashion beforehand."
- The HPCx platform is number 9 in the Top 500 Supercomputer list:** A section featuring a "TOP 500 CERTIFICATE" image and a photograph of server racks.

The browser's status bar at the bottom shows "Internet".

- **User support information**
  - helpdesk information, user mailings, bulletin board, documentation, training course details, FAQs,..
- **Administration service**
  - project administration via the admin secure web service
- **Service information**
  - hardware + software details, current machine status, service policies
- **Research information**
  - details of research being carried out on the HPCx system
- **General information about HPCx**
  - news, events, newsletter, HPCx staff

- HPCx aims to support users via a number of mechanisms:
- Helpdesk
- Functional teams
- Training courses
- Bulletin board

- Provides access to HPCx support team
  - answers questions on using the service
  - mechanism for providing comments and criticisms
- Queries can be submitted via:
  - email: **support@hpcx.ac.uk**
  - web submission form:  
<http://www.hpcx.ac.uk/support/helpdesk/query.html>
  - by phone: 0131 650 5029
  - by fax: 0131 650 6710
  - by post

- HelpDesk software banks and tracks queries
- Queries
  - (email and web based queries) receive an automatic response within minutes
    - query has arrived at the helpdesk, query number assigned
  - helpdesk operator assigns query to an “expert”
    - expert receives copy of the query
    - expert may contact you directly to discuss the query
    - expert sends you an answer
  - helpdesk operator finishes the query
    - you receive an e-mail telling you this has happened
    - records of queries are retained indefinitely

- The SLA states that queries must be answered within a certain time:
  - 97% of Admin queries within 2 days
  - 75% of all queries within 1 day
  - 97% of all queries within 3 days
- Some queries may be marked as 'in-depth' - no time limit. For example:
  - queries requiring more than 1 person-day of work
  - queries requiring more input from the user
  - queries requiring referral to a 3<sup>rd</sup> party

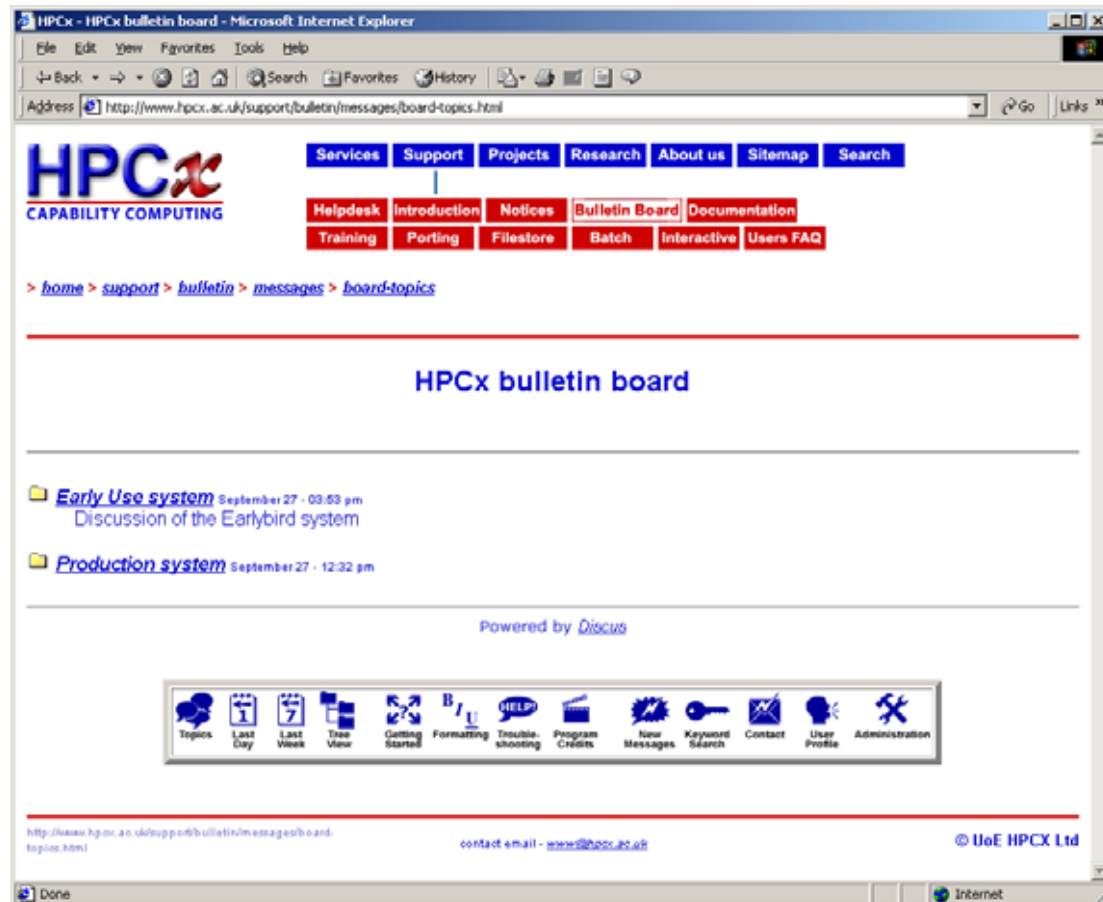
- Dual centre teams to address key targets
- Terascaling applications
  - collaborating with users to develop capability applications to exploit HPCx facilities
  - developing highly scalable numerical algorithms
- Software engineering
  - ensuring portable, high-quality code development
  - interfacing with emerging computational Grid

- **New applications outreach**
  - spreading the use of HPC to new applications and other Research Councils, eg, Life Sciences
  - supported by IBM Life Sciences, Accelrys, ...
- **Applications support**
  - ensuring service meets the users' needs
  - co-ordinating support activities, eg, helpdesk and training, and other teams
- **Operations and systems**
  - delivering a flexible capability computing service
  - ensuring smooth transitions between phases

- Functional teams and queries primarily involve the following staff
  - Alan Simpson (project director)
  - Richard Blake, Stephen Booth, Mike Brown, Martyn Guest, David Henty (team leaders)
  - Mike Ashworth, Mark Bull, Ian Bush, John Fisher, Joachim Hein, Martin Plummer, Gavin Pringle, Fiona Reid, Lorna Smith, Andrew Sunderland, Alan Gray, Huub vanDam, Kenton D'Mellow, Paul Sherwood, Jon Hill,...
- Experienced in HPC and e-Science. . .
  - . . . and in a broad range of application fields
- See:
  - <http://www.hpcx.ac.uk/about/staff/>

- Majority of existing courses available to HPCx users
  - MPI , OpenMP, languages, algorithms, ...
- New training courses
  - Using the HPCx service
  - Performance Optimisation
    - compiler switches, cache management, loop structure, ...
  - Terascaling
    - optimal use of MPI , LAPI , shared-memory tricks, ..
- Application and discipline specific workshops
- See:
  - <http://www.hpcx.ac.uk/support/training/>

- Allows exchange of information between HPCx and our users and PIs



- **A secure web-based system that allows**
  - New users to access the service
    - Creating a new account on the administration service
      - identified by unique email address
    - Requesting a user account on a service machine
      - join a project with a new login name
    - Monitoring resource usage
  - PI /Project Managers to manage their resources
    - New-user authorisation, PM pro/demotion
    - Sharing out CPU time and disc space
    - Monitoring and producing reports on resource usage
- **Secure server's address**
  - <https://www.hpcx.ac.uk/>
  - For information see:
    - <http://www.hpcx.ac.uk/projects/> or
    - <http://www.hpcx.ac.uk/projects/FAQ/>

# New User Registration 1/3

- User opens Admin Service account
  - requests an account on a service machine
  - requires project name & password
- Admin Service
  - emails admin service password to user
  - emails project manager/PI for confirmation

The screenshot shows a web browser window titled "HPCx Account Signup - Microsoft Internet Explorer". The address bar shows the URL "https://www.hpcx.ac.uk/signup.jsp". The form contains the following fields and sections:

- Nationality:** A dropdown menu with "United Kingdom" selected.
- Institution:** A text input field.
- Department:** A text input field.
- Address:** A large text area for input.
- Phone Number:** A text input field with "(optional)" next to it.
- Project:**
  - Project Code:** A text input field.
  - Project Password:** A text input field.
  - Text below: "Your project PI or manager should have told you these."
- Account Details:**
  - Machine Name:** A dropdown menu with "hpcx (HPCx Phase 1 - 2.4 AUs/CPUhr)" selected.
  - Username:** A text input field.
  - Text below: "Contact your PI if you are unsure about which machine to use."
  - Text below: "The username you receive depends on which names are available on the system - you may not get the one you request. Additionally, valid usernames must have between 3 and 8 alphanumeric characters."

At the bottom right of the form, there are "Clear" and "Submit" buttons.

- The PI /Project Manager
  - logs on to the Admin Service
  - confirms the creation of the user account
- When confirmed
  - Admin Service emails System support staff
  - they create an account

Logged in as **David Henty**.

[Go to the SAF administration page.](#)

Machine Status

Details of all Projects

**Your details**

<b>Name</b>	Dr David Henty
<b>Email</b>	<a href="mailto:d.henty@epcc.ed.ac.uk">d.henty@epcc.ed.ac.uk</a>
<b>Nationality</b>	United Kingdom
<b>Department</b>	EPCC
<b>Institution</b>	The University of Edinburgh
<b>Address</b>	JCMB The King's Buildings Mayfield Road Edinburgh EH9 3JZ
<b>Phone</b>	

**Your user accounts**

Username	Machine	Status	
dsh	earlybird	Inactive	<input type="button" value="View"/>
dsh	hpcx	Active	<input type="button" value="View"/>
course00	hpcx	Active	<input type="button" value="View"/>
course01	hpcx	Active	<input type="button" value="View"/>
course02	hpcx	Active	<input type="button" value="View"/>
course03	hpcx	Active	<input type="button" value="View"/>

- After creating the account
  - system support staff tells the Admin Server that the account has been created & what the password is
- The Admin server emails user
  - informing them that the account is ready
- User can then use the Admin server to look up the password

HPCx Personal Details - Microsoft Internet Explorer

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites History Channels Fullscreen Mail Print

Address <https://www.hpcx.ac.uk/>

**HPCx** CAPABILITY COMPUTING

Services Support Projects Research About us Sitemap Search

New Users User Admin PI Admin Reports RAS Admin FAQ

> [home](#) > [projects](#) > [admin](#)

<< [Back to the Main Page](#)

User Account Details	
Username	course00
Machine	hpcx
Status	Active
Creation Date	Fri Jan 17 16:31:21 GMT+00:00 2003
Projects	HPCx Training (z004)
Password	To view your password for this user account, please enter your HPCx web password and click on <b>View</b> .

<< [Back to the Main Page](#)

<https://www.hpcx.ac.uk/> contact email - [www@hpcx.ac.uk](mailto:www@hpcx.ac.uk) © UoE HPCx Ltd

Internet

- Confirming new users
- Creating sub-projects, to split resources between different sets of users
- Nominating (sub-) project managers
  - Who can do everything that PIs can
- Storing resources in a “reserve budget”
  - For use later in the funding period
- Adding/changing resources for different (sub-) projects
  - Both CPU-time and disk space

- See:
  - <http://www.hpcx.ac.uk/services/>
- Service policies
  - capability incentives
  - charging model
  - also
    - contingency and revision plan, data backup, personal data and privacy policy, information security policy
- HPCx and the Grid
- Packages
- Also hardware and software details, current machine status, ...

- **EPSRC's objectives for the procurement were to**
  - aim “to deliver the optimum service resulting in world-leading science”
  - address “the problems involved in scaling existing codes to the capability levels required”
- **Capability Computing**
  - jobs which use a significant fraction of the resource
  - eg, at least 512 CPUs
- **The challenges we face are to**
  - support change from capacity to capability
  - develop more scalable codes

- Codes reviewed by science support staff
  - award a 'seal of approval' at one of three different levels
  - discount provided for each seal of approval level

Level	No of Processors	Discount
Bronze	256	5%
Silver	512	15%
Gold	1024	30%

- Satisfactory scaling an important criterion
- Any disagreements will be passed to the EPSRC
- See:
  - <http://www.hpcx.ac.uk/services/policies/capability.html>

- Charges will be calculated on the amount of CPU time used
- Charges will be in terms of a standard “Allocation Unit” of CPU time
  - equivalent to 1 gigaflop processor running for 1 hour
  - constant throughout the service
  - Currently 1 AU is roughly 0.21 CPU hours
- See:  
[http://www.hpcx.ac.uk/services/policies/charging\\_model.html](http://www.hpcx.ac.uk/services/policies/charging_model.html)

- Software engineering team
  - help users to Grid-enable codes
  - strong links with e-Science centres
- HPCx on the Grid
  - Globus 2.4.3 is running on HPCx

- HPCx supports a number of software packages, available pre-compiled
  - AMBER
  - CFX
  - DL\_POLY
  - NAMD
  - GAMESS-UK
  - VASP
  - SIESTA
  - LAMMPS
  - and many more...
- Information on codes for specific application areas at
  - <http://www.hpcx.ac.uk/research/>
- Licenses required for some codes
- Contact the Helpdesk for further information

- HPCx aims to provide support for users via a number of mechanisms:
  - web site
  - helpdesk
  - functional teams
  - training and documentation
  - bulletin boards
  - administration service
- Have summarised:
  - service level policies
  - Grid status
  - application packages

- This course has:
- introduced the HPCx architecture
- described the steps involved in compilation
- explained how to submit batch jobs
- highlighted the different tools and libraries available on the system
- summarised the different user support mechanisms available

- See the HPCx web site:

<http://www.hpcx.ac.uk>