

## **H2020-FETHPC-2014**

### **Coordination of the HPC strategy**



**EXDCI**

**European eXtreme Data and Computing Initiative**

**Grant Agreement Number: FETHPC-671558**

**D5.2**

**Initial Evaluation Report of the HPC Job Centre**

*Final*

Version: 1.0  
Author(s): Catherine Inglis, EPCC – University of Edinburgh; Blaž Rodič, University of Ljubljana  
Date: 22.11.2016

## Project and Deliverable Information Sheet

<b>EXDCI Project</b>	<b>Project Ref. №: FETHPC-671558</b>	
	<b>Project Title: European eXtreme Data and Computing Initiative</b>	
	<b>Project Web Site: <a href="http://www.exdci.eu">http://www.exdci.eu</a></b>	
	<b>Deliverable ID: &lt; D5.2&gt;</b>	
	<b>Deliverable Nature: &lt;DOC_TYPE: Report&gt;</b>	
	<b>Dissemination Level:</b> PU	<b>Contractual Date of Delivery:</b> 30 / November / 2016
		<b>Actual Date of Delivery:</b> 30 / November / 2016
<b>EC Project Officer: Béatrice Márquez Garrido</b>		

\* - The dissemination level are indicated as follows: **PU** – Public, **CO** – Confidential, only for members of the consortium (including the Commission Services) **CL** – Classified, as referred to in Commission Decision 2991/844/EC.

## Document Control Sheet

<b>Document</b>	<b>Title: Initial Evaluation Report of the HPC Job Centre</b>	
	<b>ID: D5.2</b>	
	<b>Version: &lt;1.0&gt;</b>	<b>Status: Final</b>
	<b>Available at: <a href="http://www.exdci.eu">http://www.exdci.eu</a></b>	
	<b>Software Tool: Microsoft Word 2013</b>	
	<b>File(s): EXDCI-D5.2-v1.0.docx</b>	
<b>Authorship</b>	<b>Written by:</b>	Catherine Inglis, EPCC – University of Edinburgh
	<b>Contributors:</b>	Blaž Rodič, University of Ljubljana
	<b>Reviewed by:</b>	Dr Allan Sacha Brun, CEA; Iñigo Yenes, PRACE AISBL
	<b>Approved by:</b>	MB/TB

## Document Status Sheet

<b>Version</b>	<b>Date</b>	<b>Status</b>	<b>Comments</b>
0.1	27/Oct/2016	Draft	
0.2	09/Nov/2016	Draft	
1.0	22/Nov/2016	Final version	

## Document Keywords

<b>Keywords:</b>	PRACE, Research Infrastructure, Jobs, Careers, Recruitment
------------------	--

### Copyright notices

© 2016 EXDCI Consortium Partners. All rights reserved. This document is a project document of the EXDCI project. All contents are reserved by default and may not be disclosed to third parties without the written consent of the EXDCI partners, except as mandated by the European Commission contract FETHPC-671558 for reviewing and dissemination purposes.

All trademarks and other rights on third party products mentioned in this document are acknowledged as own by the respective holders.

## Table of Contents

<b>1</b>	<b>Introduction .....</b>	<b>1</b>
<b>2</b>	<b>Initial specification of the HPC Job Centre.....</b>	<b>2</b>
<b>2.1</b>	<b>Initial definition of purpose and scope.....</b>	<b>2</b>
<b>2.2</b>	<b>Review of existing job websites.....</b>	<b>2</b>
<b>2.3</b>	<b>Refining the scope.....</b>	<b>4</b>
<b>3</b>	<b>Initial design of the Job Centre .....</b>	<b>4</b>
<b>3.1</b>	<b>Functionality for jobseekers (first phase).....</b>	<b>5</b>
<b>3.2</b>	<b>Functionality for employers (first phase) .....</b>	<b>5</b>
<b>3.3</b>	<b>Webpage design .....</b>	<b>5</b>
<b>4</b>	<b>Next steps.....</b>	<b>7</b>
<b>5</b>	<b>Second phase of development (2017).....</b>	<b>10</b>
<b>6</b>	<b>Conclusions .....</b>	<b>10</b>
<b>7</b>	<b>Annex.....</b>	<b>11</b>
<b>7.1</b>	<b>Recommended Job Description Structure.....</b>	<b>11</b>
<b>7.2</b>	<b>Example Job Description: Systems Developer .....</b>	<b>12</b>

## List of Figures

Figure 1: Screenshot from HiPEAC Jobs .....	3
Figure 2: HPC Job Centre front page - job vacancy listings .....	6
Figure 3: Individual job advertisement .....	7
Figure 4: Links to other HPC jobs websites.....	8
Figure 5: Employer guidance page.....	9

## References and Applicable Documents

- [1] <http://www.exdci.eu>
- [2] <https://exdci.eu/jobs-and-training/job-portal/>
- [3] <http://www.prace-project.eu>
- [4] <http://www.etp4hpc.eu>
- [5] <https://exdci.eu/collaboration/fethpc>
- [6] <https://exdci.eu/collaboration/coe>
- [7] <http://www.eesi-project.eu/>
- [8] <https://www.eurolab4hpc.eu/>

## List of Acronyms and Abbreviations

BSC	Barcelona Supercomputing Center
CoE	Centres of Excellence for Computing Applications
CV	Curriculum Vitae
D	Deliverable
EC	European Commission
EESI	European Exascale Software Initiative
ETP4HPC	European Technology Platform for High Performance Computing
EU	European Union
EXDCI	European Extreme Data and Computing Initiative
FET	Future and Emerging Technologies
HiPEAC	European Network on High Performance and Embedded Architecture and Compilation
HPC	High Performance Computing
IT	Information Technology
M	Month
PRACE	Partnership for Advanced Computing in Europe
WP	Work Package



## Executive Summary

This deliverable is an initial evaluation report of the HPC Job Centre portal being developed in *Task 5.2: Facilitating HPC Staff Recruitment*.

It is anticipated that the Job Centre will become a valuable resource for both job-seekers and employers, providing listings of job vacancies in the HPC sector in Europe (and sometimes beyond). It will also provide sample job descriptions to guide employers in the writing of their job specifications, to help them to recruit staff with the required HPC skills.

This report documents the processes involved in developing the portal, and its current status.

A further deliverable, *D5.7 – Final Evaluation Report of the HPC Job Centre*, to be submitted in Month 28, will analyse the use of the job centre portal by both employers and job-seekers.

The EXDCI Jobs Portal can be found at <https://exdci.eu/jobs-and-training/job-portal/>.

### 1 Introduction

This deliverable is part of *WP5, Talent Generation and Training for the Future*.

One of the acknowledged barriers to increasing the uptake of HPC in academia and industry is the shortage of skilled personnel. Task 5.2, *Facilitating HPC Staff Recruitment*, aims to help employers who are recruiting staff in the field of HPC to find the most suitable candidates, by setting up a “Job Centre” portal with sample job descriptions (to help employers specify the skills and qualities they need), and links to sites where HPC jobs are listed, eg the HPCWire Job Bank. In addition, jobs offered by PRACE and ETP4HPC partners and their collaborators, eg the FETHPC projects and Centres of Excellence, will be advertised on the portal to specifically promote opportunities in Europe.

This document describes the process of defining and creating the job portal, both in terms of the content and structure. The first version of the portal was launched in November 2016, and the current status of the portal is presented in this report.

This document is structured as follows:

- **Section 1:** Introduction (this section)
- **Section 2:** Initial specification of the HPC Job Centre – a summary of the purpose and scope of the Job Centre, and an overview of existing websites where HPC jobs are advertised;
- **Section 3:** Initial design of the Job Centre – details about the design and functionality of the first phase of the portal;
- **Section 4:** Next steps – plans for finalising and implementing the first phase of the Job Centre;
- **Section 5:** Second phase of development (2017) – future plans to enhance the Job Centre;
- **Section 6:** Conclusions

## 2 Initial specification of the HPC Job Centre

### 2.1 Initial definition of purpose and scope

The initial task was to define the scope of the portal.

The HPC Job Centre is intended as a central portal with resources for:

- Job-seekers
  - A list of jobs currently offered by PRACE, ETP4HPC and EESI partners and their collaborators;
  - Links to other sites where HPC jobs are listed, eg HPCWire Job Bank.
- Employers
  - Sample job descriptions, to help employers specify the skills and qualities they need.

The portal is designed to provide a reference resource for both job-seekers and employers. It is not intended to be a “marketplace” where job-seekers can post their CVs and employers can head-hunt staff. The Job Centre will not have the facility to hold any personal data.

The listings will feature both academic and commercial vacancies. The main organisations which we expect to advertise their vacancies on the portal are institutions which are members of PRACE or ETP4HPC (the two partners in EXDCI), and their collaborators. This includes, for example, institutions who are involved in FETHPC projects or Centres of Excellence.

We expect that as awareness of the portal grows, other external organisations may want to post job vacancies on the portal. Vacancies at any organisation may be published on the portal, as long as they are relevant to the HPC market.

The portal is aimed primarily at people seeking and offering employment within Europe. However, although we will not actively seek to list job vacancies from outside Europe, we will be willing to post relevant vacancies in any part of the world if asked.

### 2.2 Review of existing job websites

There are already a number of websites which advertise jobs in HPC. We began by looking at these and assessing what they offer and how they present their listings. The main sites we looked at were:

**PRACE jobs** - <http://www.prace-ri.eu/job-offers/>

Job listings are not particularly easy to find on the PRACE webpage – “Job vacancies” is one of the links on the menu at the top, but it is easy to overlook this as the much larger menu on the left draws the eye. The job postings are not particularly easy to scan through quickly, and are not searchable. Important information, such as when the closing date is or whether the post is still open, is not immediately clear from the main page. The EXDCI portal aims to improve on all of these aspects.

**HiPEAC Jobs** - <https://www.hipeac.net/jobs/>

Job listings are mainly for jobs in Europe. Listings are very clear: each job is in its own text box, with the information given in a standard format for each announcement. See Figure 1: Screenshot from HiPEAC Jobs.

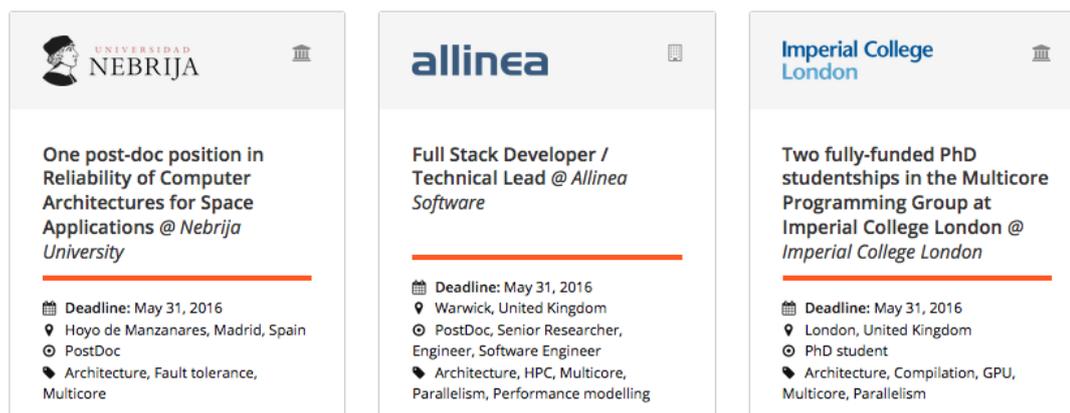


Figure 1: Screenshot from HiPEAC Jobs

HiPEAC Jobs has a dedicated Twitter feed at <https://twitter.com/hipeacjobs>. There is also a LinkedIn page, but this is a general HiPEAC page, rather than HiPEAC Jobs specifically, and with a mix of jobs and other news it appears rather cluttered.

#### The HPCWire Job Bank - <http://jobs.hpcwire.com/>

This mainly lists jobs in the US, although it does include some in Europe. This is a very sophisticated site, with some interesting features:

- Featured listings appear in a separate section at the top of the page (presumably at a cost to the employer);
- Advanced Search allows users to search by category, location, keyword, etc;
- Job-seekers can post their CV, and receive relevant job listings by email according to pre-selected criteria.
- Employers can post and edit job vacancies directly, post an employer profile, create a mini-site with logo, video and job postings, and access an online inbox to collect all received resumes, with an advanced built-in Applicant Tracking System.

This webpage offers a lot to both job-seekers and employers, but goes far beyond the current scope of the EXDCI Job Centre.

#### HPC University - <http://hpcuniversity.org/careers/>

A straightforward list of job opportunities, again mainly for jobs in the US. There is a search facility, but it is not possible to search by location. Jobs are posted for a period of 30 days, regardless of whether the closing date is sooner or later than this.

#### LinkedIn – <https://www.linkedin.com/jobs/high-performance-computing-jobs>

LinkedIn allows filtering by various categories, eg location, company, experience level, and also offers the option to sign up for alerts based on search filters.

*Note that the above link lists job vacancies in the USA by default, but the appropriate search field can be used to specify any other country, and country-specific pages also exist, eg:*

*<http://uk.linkedin.com/jobs/high-performance-computing-jobs> (UK)*

*<http://es.linkedin.com/jobs/high-performance-computing-empleos> (Spain)*

*<http://fr.linkedin.com/jobs/high-performance-computing-emplois> (France).*

**ResearchGate** - <https://www.researchgate.net/jobs>

ResearchGate is a resource for academic and corporate researchers, and as such this page focuses specifically on research jobs. It has a fairly simple search function based on country, discipline and institution/company.

**Nature Jobs:** <http://www.nature.com/naturejobs/science/>

Another sophisticated page with search by keyword or location, specific sections for job-seekers (post a CV / search for vacancies) and employers (post a job / search for candidates), a “career toolkit” (including sections on writing CVs, interview skills, networking, etc), a blog, Facebook and Twitter sites, and a series of international Career Expo careers fairs. This site has a huge number of functions and reaches a wide cross-section of the scientific research community, but this is financed by fees charged to employers posting advertisements. This is not within the current remit of the EXDCI Job Centre.

**Women in HPC:** <http://www.womeninhpc.org/resources/>

A very simple webpage listing any job vacancies the organisation has been asked to publicise.

### 2.3 Refining the scope

As seen above, a number of webpages already exist which list job vacancies via structured, searchable lists. Nevertheless, EXDCI can clearly benefit its many stakeholders by providing an additional place to advertise job vacancies to a relevant audience. We do not wish simply to replicate what already exists and, in some cases, is already done well. We aim to be complementary to existing sites, rather than in competition with them. Further, although some of the websites offer quite complex functions, the current EXDCI project does not have the resources to offer similar facilities.

However, we noticed that the quality of job descriptions varies considerably, potentially leading to a failure to inspire suitable candidates to apply for appropriate positions. Additionally, although many experienced software developers and system administrators already have the skills to consider moving to a career in HPC, the specific requirements of advertised jobs in HPC and the connections with other types of careers in IT are often inadequately presented. This may contribute to the failure to motivate sufficient numbers of candidates to consider a career change to HPC.

An important objective of the EXDCI job portal will therefore be to provide recruiters with valuable information on how to structure and write their job vacancy advertisements in order to attract the most promising candidates both from within the HPC field and from other related sectors, and thus help reduce the shortage of skilled personnel in the HPC industry. To this end, the portal includes a dedicated page with guidance for recruiters, where they will be able to find several example job descriptions.

## 3 Initial design of the Job Centre

After consideration of all of the above, the desired functionality for both jobseekers and employers was agreed, and the webpage design began. Due to restrictions on the availability of the web staff at BSC, who are responsible for the EXDCI webpages, the implementation has been split into two phases. The first phase went live in November 2016, with the second phase to follow in 2017. The portal can be found at <https://exdci.eu/jobs-and-training/job-portal/>.

### 3.1 Functionality for jobseekers (first phase)

The first phase of the Job Centre offers *jobseekers* the following:

- **List of job vacancies**, with filters to enable the search to be tailored;
- **Links to other sites which advertise jobs in HPC**, starting primarily with the sites listed above in section 2.2, with other relevant sites added as they are identified.

### 3.2 Functionality for employers (first phase)

The first phase of the Job Centre offers *employers* the following:

- **Listing of their job vacancies**
  - In the initial implementation, only EXDCI members with job portal accounts can post job vacancies. The ability for employers to post their own vacancies is the principal innovation to be implemented in Phase 2.
- **Sample job descriptions** to help them to specify the required skills and qualities.

### 3.3 Webpage design

After agreeing on the required functionality of the Job Centre, the next stage was to design the webpage itself.

The consensus was that of all the existing websites we had reviewed, the HiPEAC Jobs page was the most appealing visually, conveying all of the pertinent information clearly at a glance, and we aim to present key details with similar clarity. The HiPEAC Jobs style is in fact similar to some of the existing EXDCI webpages, such as the grid-like table of FETHPC projects at <https://exdci.eu/collaboration/fethpc>.

Our goal was therefore to design a page that was uncluttered and easy to navigate. For this reason, the design is fairly simple, with job listings in a standard format, and a set of search filter options on the left hand side.

Additionally, below the filter options, there are banners linking to **More HPC Job Vacancies** (links to other sites advertising HPC job vacancies), **Employer Guidance** (including sample job descriptions), and the **HPC Career Case Studies** (developed in Task 5.1).

**e d c i**  
European  
Extreme Data  
& Computing  
Initiative

[About EXDCI](#) [Newsroom](#) [Collaboration](#) [Events](#) [Activities](#) [Jobs & Training](#) [Contact](#)

## Job Portal

One of the acknowledged barriers to increasing the uptake of HPC in academia and industry is the shortage of skilled personnel. In addition to growing the overall numbers of trained persons, more effective cross-training is needed so that collaborators with differing skills and backgrounds can work together effectively. EXDCI wants to contribute to supporting the generation of young talent as a crucial element of the development of European HPC. In this sense, the project will also ensure that the development of the Ecosystem benefits the European job market as well as providing mechanisms that will meet the needs of the job-seeker and employer within the context of the HPC Ecosystem.

Write ...

Search in the following fields

- Select All
- Job Title
- Organisation
- Keywords
- Required education

Filter by Country

Filter by Career Level

Filter by Required Skills

Search

**More HPC Job Vacancies**

**Employer Guidance**

**HPC Career Case Studies**

---

**Junior HPC Specialist** - Other  
VŠB – Technical University of Ostrava - Ostrava (Czech Republic)  
Job offer ends 30 NOV 2016  
Junior HPC Specialist

---

**OpenMP/OmpSs Runtime Infrastructure Developer** - Other  
BSC - Barcelona Supercomputing Center - Barcelona (Spain)  
Job offer ends 30 NOV 2016  
OpenMP/OmpSs runtime infrastructure developer

---

**Combined Master and PhD in Pervasive Parallelism** - PhD student  
University of Edinburgh - Edinburgh (United Kingdom)  
Job offer ends 17 MAR 2017  
Combined Master and PhD programme in Pervasive Parallelism

---

**Combined Master and PhD in Data Science** - PhD student  
University of Edinburgh - Edinburgh (United Kingdom)  
Job offer ends 17 MAR 2017  
Combined Master and PhD in Data Science

**Figure 2: HPC Job Centre front page - job vacancy listings**

When a user clicks on one of the advertised jobs, they will be taken to further details about that job vacancy – see Figure 3: Individual job advertisement. This page displays, on the left, a summary using information from the required data fields. A pdf document can also be linked here, under “Documents” – this would typically be the Job Description provided by the employer. On the right, along with a summary of the job description, more details are displayed on the “Required education or background” and “Application procedure”.

The “More information” button links to the recruiting organisation’s own website – to the specific job particulars if these are available.

The screenshot shows the EXDCI website interface. At the top, the EXDCI logo is displayed with the text 'European Extreme Data & Computing Initiative'. Below the logo is a navigation menu with links: 'About EXDCI', 'Newsroom', 'Collaboration', 'Events', 'Activities', 'Jobs & Training', and 'Contact'. A breadcrumb trail reads 'Home » Jobs & Training » Job Portal » Junior HPC Specialist'.

## Junior HPC Specialist



**Organisation:** VŠB – Technical University of Ostrava

**Deadline:** 30 NOV 2016

**Place:** Ostrava (Czech Republic)

**Career level:** Other

**Job field:** Junior HPC Specialist

**Keywords:** Unix, Linux, system administration, system support, networks

**Documents:**  
[it4i-eng-invitation-to-job-applications-junior-hpc-specialist.pdf](#)

**Job description:**

VŠB – Technical University of Ostrava has a vacancy for a Junior HPC Specialist, with the following responsibilities:

- Administration of Unix operating system and related services, particularly on Linux platforms
- New services development
- Support for the operating systems

**Required education or background:**

Minimum qualification requirements:

- Experience with Linux system,
- Bachelor or higher degree at a technical university or other technical higher education institution

Desirable experience:

- Unix OS administration
- Experience with administration of services in Unix environment
- Knowledge of IP network principles,
- Experience with script generation (Bash, Python, Ruby, Perl).

**Application procedure:**

Please, send the job application substantiated with a structured curriculum vitae focused on professional experience along with a letter of motivation, or possibly references from the previous jobs, to the e-mail address: [luce.bestova@vsb.cz](mailto:luce.bestova@vsb.cz) by 30th November, 2016.

As the subject of the e-mail message, please state, "Invitation to Job Application – Junior HPC Specialist".

[More information](#)

The EXDCI project has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 671558. [Legal notice](#)

Figure 3: Individual job advertisement

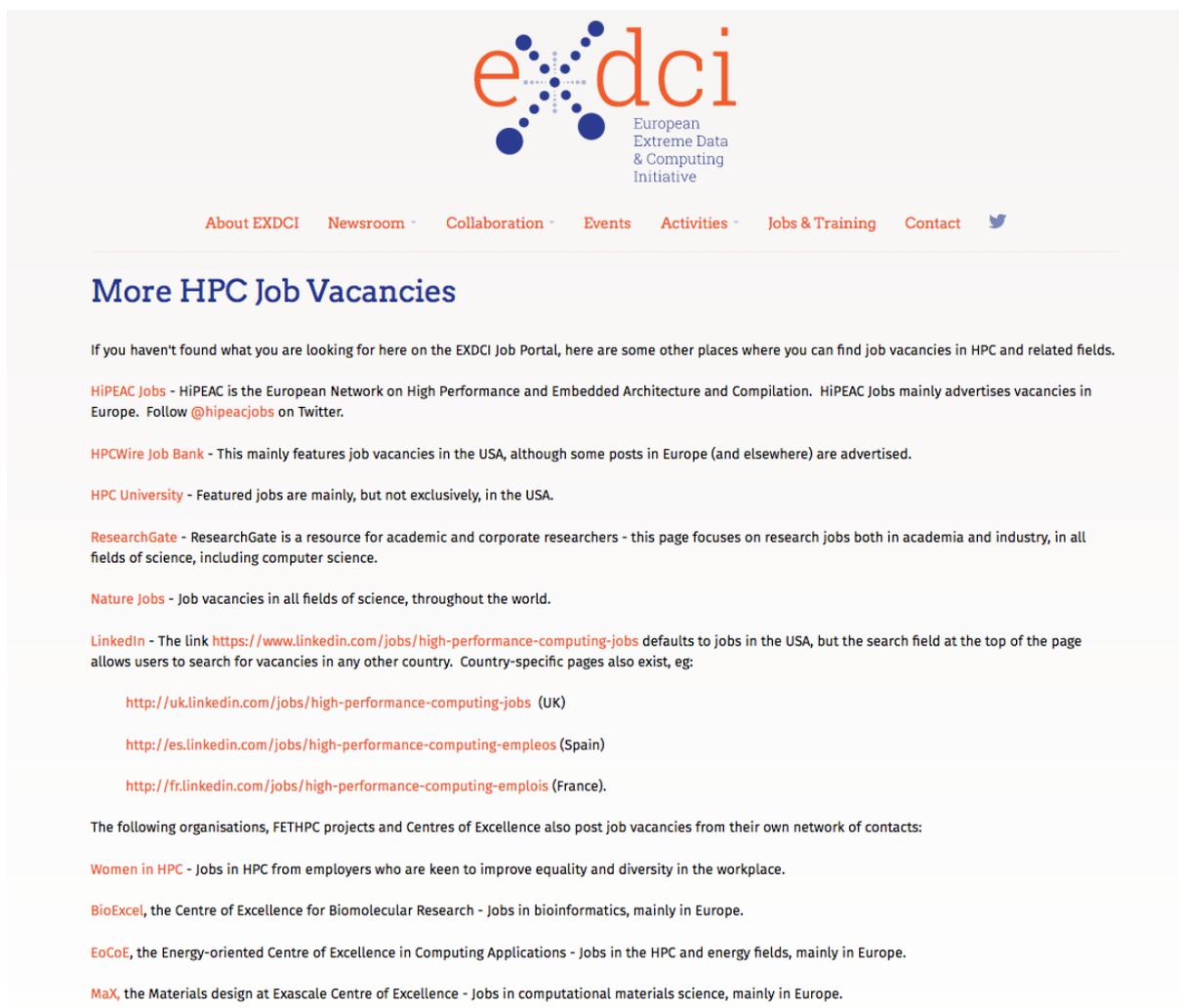
## 4 Next steps

The first phase of the Job Centre was launched in November 2016, and an initial publicity campaign is about to be kicked off at the time of writing this document.

The portal has been populated with some initial job vacancies. The EXDCI team is currently approaching the partners of PRACE and ETP4HPC, and associated institutes such as members of FETHPC projects and CoEs, in order to increase the number of job vacancies. Vacancies currently posted on the PRACE webpage will in future appear on the EXDCI webpage, where they will be easier to find and easier to search. It is important to have a reasonable number of job vacancy announcements listed before the portal is widely publicised, otherwise the first visitors to the page will most likely not be sufficiently interested to return to the portal.

The “*More HPC Job Vacancies*” link from the Job Portal front page currently contains links to the other HPC job websites mentioned in section 2.2, as well as job listings from some of

the Centres of Excellence. This page will be updated with further links whenever the team becomes aware of additional sites containing relevant listings, including job listings from other CoE / FETHPC projects.



The screenshot shows the EXDCI website header with the logo 'e x d c i' and the text 'European Extreme Data & Computing Initiative'. Below the header is a navigation menu with links: 'About EXDCI', 'Newsroom', 'Collaboration', 'Events', 'Activities', 'Jobs & Training', and 'Contact'. The main content area is titled 'More HPC Job Vacancies' and contains the following text:

If you haven't found what you are looking for here on the EXDCI Job Portal, here are some other places where you can find job vacancies in HPC and related fields.

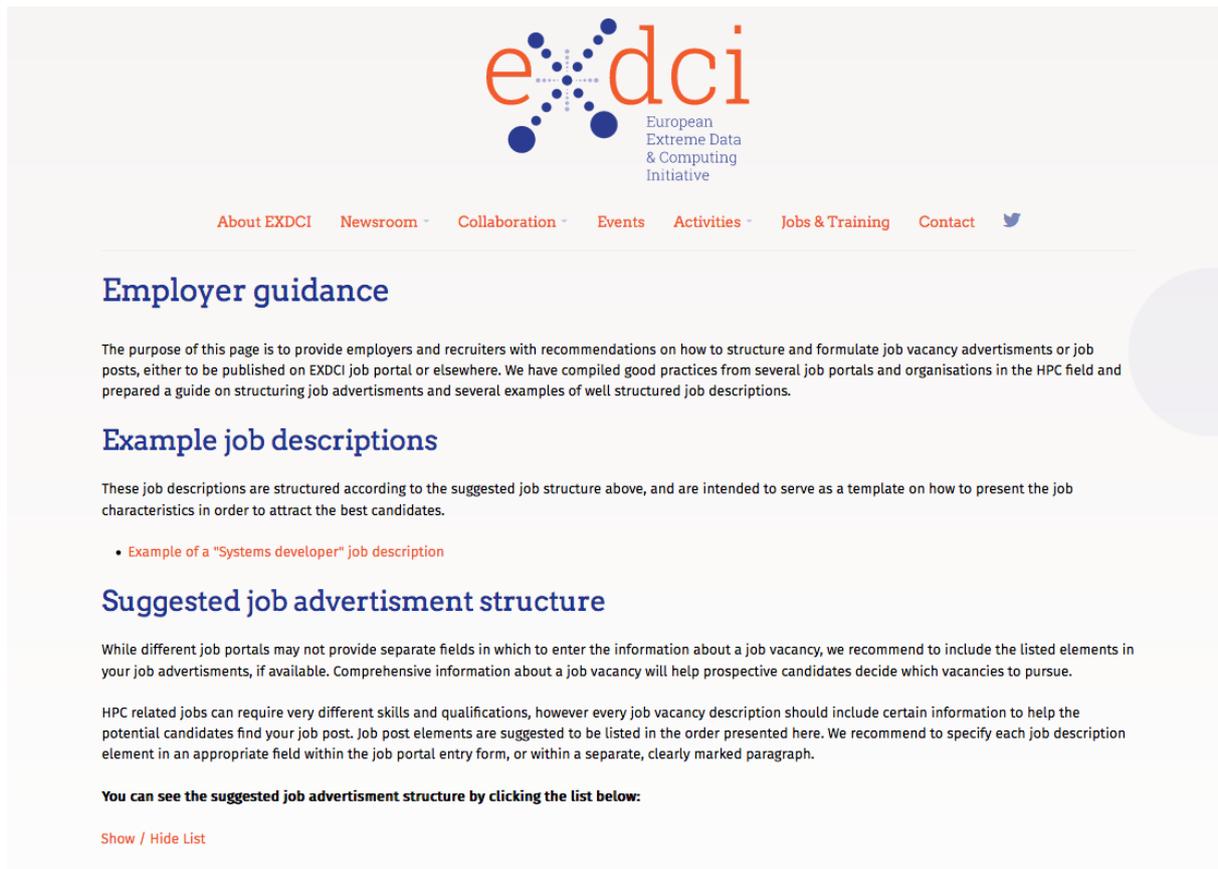
- HIPEAC Jobs** - HIPEAC is the European Network on High Performance and Embedded Architecture and Compilation. HIPEAC Jobs mainly advertises vacancies in Europe. Follow @hipeacjobs on Twitter.
- HPCWire Job Bank** - This mainly features job vacancies in the USA, although some posts in Europe (and elsewhere) are advertised.
- HPC University** - Featured jobs are mainly, but not exclusively, in the USA.
- ResearchGate** - ResearchGate is a resource for academic and corporate researchers - this page focuses on research jobs both in academia and industry, in all fields of science, including computer science.
- Nature Jobs** - Job vacancies in all fields of science, throughout the world.
- LinkedIn** - The link <https://www.linkedin.com/jobs/high-performance-computing-jobs> defaults to jobs in the USA, but the search field at the top of the page allows users to search for vacancies in any other country. Country-specific pages also exist, eg:
  - <http://uk.linkedin.com/jobs/high-performance-computing-jobs> (UK)
  - <http://es.linkedin.com/jobs/high-performance-computing-empleos> (Spain)
  - <http://fr.linkedin.com/jobs/high-performance-computing-emplois> (France).

The following organisations, FETHPC projects and Centres of Excellence also post job vacancies from their own network of contacts:

- Women in HPC** - Jobs in HPC from employers who are keen to improve equality and diversity in the workplace.
- BioExcel**, the Centre of Excellence for Biomolecular Research - Jobs in bioinformatics, mainly in Europe.
- EoCoE**, the Energy-oriented Centre of Excellence in Computing Applications - Jobs in the HPC and energy fields, mainly in Europe.
- MaX**, the Materials design at Exascale Centre of Excellence - Jobs in computational materials science, mainly in Europe.

**Figure 4: Links to other HPC jobs websites**

We will continue to develop the page with guidance for employers on preparing job descriptions (see Figure 5: Employer guidance page), adding more example job descriptions for common types of HPC-related jobs (see Annex for an example).



**Figure 5: Employer guidance page**

The existence of the portal will be publicised through the EXDCI Twitter feed, as well as through mailings to all of the EXDCI stakeholders and other relevant contacts of the partner organisations. Traffic to the website will be monitored, and we will continue to promote the existence of the site frequently, to ensure that it is used by both job-seekers and employers, and that a steady flow of new jobs can be maintained.

Since each organisation has its own recruitment procedure, and job-seekers will not apply for vacancies directly through EXDCI, it will not be straight-forward to track the extent to which job advertisements on the Jobs Portal result in applications for the posts. However, linking to the recruiting organisations' webpages using customised URLs (such as bitlinks) can allow us to track how many people are at least motivated to find out more. We will not have a direct way of tracking whether employers are seeing an increase in (relevant) job applications after advertising their posts on the portal, or whether the successful job applicants saw the vacancy on the portal. For this, the best we can do is to periodically ask the recruiting organisations for anonymised statistics relating to where their job applicants have seen the post advertised, if the recruiter carries out their own tracking of this. Of course not all organisations will do this, so the data will be somewhat incomplete. We will also ask recruiters for additional feedback on the Jobs Portal – how well they think it works, and how it could be improved – in an effort to enhance the portal and increase its usefulness for both job-seekers and recruiters alike.

While the portal lacks the financial support to integrate some of the functions of other websites, the fact that there is no charge associated with its use, either for job-seekers or employers, can be considered to be a strength.

## 5 Second phase of development (2017)

The second phase of development will be carried out in 2017. The principal change will be that employers will be able to create their own account on the portal, allowing them to post their own job vacancies directly. This represents a clear improvement for the employers, as prior to that they will need to send their job announcements to EXDCI and wait for one of the team members to create the job listing. We will aim to do this on the day the information is received whenever we can, but at busy times this may not always be possible.

Although in the second phase the listings will still require approval by a member of EXDCI before they go live, this nevertheless gives the employer more control over the process, and will generally shorten the time for a listing to appear.

If large numbers of job listings are received, we might consider a dedicated EXDCI jobs Twitter feed, but only if the need for this was clearly demonstrated. Maintaining a second Twitter account, in addition to the general EXDCI account, would require some extra effort, but might turn out to be necessary to avoid other news from EXDCI being swamped by job announcements. It is most likely that the EXDCI Twitter feed will be used simply to publicise / remind about the existence of the jobs site, without specific jobs being posted there.

Before the second phase of development is carried out, we will also consider how we can expand our cooperation with organisations such as EuroLab-4-HPC and the Centres of Excellence, among others, to improve the visibility and usage of the portal.

We may also revisit the other jobs websites and consider whether there are further features we might like to add to the portal. However, with limited resources for development, significant changes are unlikely, and will probably be limited to additional sections with useful links, e.g. the Nature Jobs Career Toolkit ([http://www.nature.com/naturejobs/science/career\\_toolkit/](http://www.nature.com/naturejobs/science/career_toolkit/)), which includes lots of useful advice on creating a CV, interview skills, networking, giving presentations, and more. This would still create additional value for the portal.

## 6 Conclusions

The next few months will be vital for establishing the success of the portal. There is considerable effort to be spent in publicising the portal widely once it has been populated with sufficient content. We will spend a lot of effort communicating with all the relevant stakeholders, in order firstly to raise awareness of the portal and attract users, and secondly to elicit feedback from the users in order to be able to address any feasible improvements and corrections at the time of carrying out the second phase of development.

We hope that within a few months the portal will be well-established and that it will need less effort in terms of publicity and ensuring that job opportunities are communicated to us. However, even once it has become a well-known resource, we will continue to monitor use of the site and seek feedback from recruiters regarding how successful it has been in helping them to procure suitable staff for their vacancies.

A further deliverable, *D5.7 – Final Evaluation Report of the HPC Job Centre*, to be submitted in Month 28, will analyse the established use of the job centre portal by both employers and job-seekers.

## 7 Annex

This is a sample of the information to be provided on the Employer Guidance section of the Job Portal. The goal of this section is to help employers specify the skills and qualities they need.

### 7.1 Recommended Job Description Structure

HPC-related jobs can require very different skills and qualifications, however every job vacancy description should include certain information to help the potential candidates find your job post. A suggested order for listing the job post elements is presented here. We recommend that you specify each job description element within a separate, clearly-marked paragraph to facilitate publishing and search.

- **Job title**
  - Official job title, preferably in English
    - Example: *“Senior Researcher”*
- **Organisation**
  - Should be stated in order to attract candidates, unless there is a reason for which the employer wishes to stay anonymous.
- **Country**
  - Location of employment will help candidates search for relevant jobs.
- **Job field**
  - A short description in a sentence of two will help candidates find their preferred jobs.
    - Example: *“Big Data Analyst: research on new solutions in the area of Big Data analytics for scalable applications”*
- **Career level**
  - Seniority level at the organisation
    - Examples: *senior researcher, fellow, manager, engineer, administrative officer*
- **Contract type**
  - Specify type (part-time/full-time) and duration of contract
    - Example: *“full-time, 3-year contract with 6-month probationary period”*
- **Salary level**
  - If possible, specify the approximate starting annual salary, and whether this is before or after national tax and insurance contributions.
- **Required education or background**
  - Specify required level of education (if defined), and required or desired field of education or experience
    - Example: *“PhD, ideally in the field of Computer Science”* or *“Background in Data Analytics”*
- **Required skills and certifications**
  - Specific job skills and certifications, not evident from required education or job type, eg tools and methodologies with which the candidates should be familiar, and required level of expertise. Also specify any languages and required level of fluency.
    - Example: *“Excellent knowledge of Hadoop, general knowledge of parallel applications. Preferred candidates also have experience in*

*data analytics and HPC infrastructures. CCNP Data Center certification is an advantage”*

- Example: *“Excellent command of English (IRL level 4), working knowledge of German language (IRL level 2)”*

- **Job description**

- A paragraph of free text describing the job responsibilities and requirements, opportunities for training and career progress, and specific restrictions (eg legal issues).
  - Examples of responsibilities: *planning and organising, problem solving, decision making, project management*
  - Example of legal issues: *“Disabled people will have priority as long as equally qualified”*

- **Application procedure**

- Address of the website or email address where candidates can apply of find application details, and any (brief) specific instructions.
  - Example: *“The recruitment process will be made through the central administration department”*

- **Deadline for application**

- This avoids candidates wasting time if the deadline has already passed, and facilitates the removal of old job posts.

- **Key words**

- To facilitate web search, list specific terms related to the organisation, required skills, relevant technologies and work responsibilities.

## 7.2 Example Job Description: Systems Developer

This section shows how the template above might be used to produce a real job description.

### JOB TYPE: Systems developer

- **Job title**
  - Systems developer
- **Organisation**
  - Example Research Centre (ERC), Department of Advanced Computing
- **Country**
  - Switzerland
- **Job field**
  - Systems development and administration in HPC technologies and services
- **Career level**
  - Technical staff
- **Contract type**
  - Post is available from 1<sup>st</sup> January 2017. Position is 3-year full-time contract with 6-month probationary period. Contract is 40 hours per week, with possibility of flexible working hours. Annual leave entitlement is 24 days per year plus 8 public holidays.
- **Salary level**
  - Projected starting salary is 30,000 EUR after taxes and health/social insurance contributions.
- **Required education or background**
  - Bachelor degree or Level VI/1 KLASIUS or ISCED level 6 diploma in computer science, or documented background in systems administration in

HPC technologies and services, virtualisation, cloud computing and data intensive computing.

- **Required skills and certifications**

- Technical expertise in systems administration of Linux-based systems.
- Experience in one or more of the following: HPC technologies and services, virtualisation, cloud computing.
- Analytical and technical problem-solving skills.
- Excellent awareness of emerging technologies and trends in advanced computing.
- Desire to learn new skills.
- Software development skills in Perl, Python and Java.
- Ability to work autonomously, planning and organising own work activities with minimal supervision.
- Well-developed communication and co-ordination skills, ideally gained in a multicultural environment.
- Excellent command of English (IRL level 4) required. Working knowledge of German or French (IRL level 2) is an advantage.
- MCSE: Private Cloud, Citrix CCP-V, Cisco Data Center Unified Computing Design / Support Specialist certification, while not essential, would be an advantage.

- **Job description**

You will work for a world-renowned leader in advanced computing based in Geneva, using state-of-the-art equipment to develop cutting-edge solutions and will have the opportunity to meet Europe's top researchers in the field of High Performance Computing. We offer excellent working conditions and great opportunities for professional development, training and career progression.

The system developer's main responsibilities include the development, implementation and support of bespoke and novel advanced computing services involving the use of High Performance Computing (HPC), virtualisation and cloud technologies for inter-organisational projects.

Other responsibilities will include development of documentation for the new services, preparation of training material for specialist and non-specialist users, and training of staff and end-users.

Your main contacts and relationships will include internal staff and end users at partner organisations, which include universities and research centres.

Planning and organising responsibilities involve overseeing of implementation of technical services with internal staff and external partners and supervision of junior technical staff to ensure project objectives are met.

Problem solving and decision-making: you will be required to act as autonomous technical specialist and source of expertise in the field of virtualisation and cloud technologies. You will be required to provide and justify proposals for technical solutions through independent research, then develop and implement them.

Work involves approximately 2 months of travel annually, within Europe.

Work will require meeting pre-defined quality, cost and time targets, under the direction of your manager.

- **Application procedure**
  - Further job vacancy details and application procedure are available at <http://example-link.org>
- **Deadline for application**
  - Closing date for applications is: 1<sup>st</sup> December 2016
- **Key words**
  - system administrator, technical specialist, advanced computing, HPC, virtualisation, development, programming, user support, Perl, Java, Python, cloud technologies