Hands-on: How to apply for computing and data resources

2nd HPAC Platform Training, 26-28 Nov 2019

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ICEI Resources for HBP

- ICEI resources have already been made available to HBP and PRACE by CSCS
- There are currently 21 HBP projects with compute allocations at CSCS
  - More are in the approval stages
- More resources are available than are being consumed so HBP users are encouraged to apply for a compute allocation
  - Interested users can apply for resources in this session

### Quarterly Distribution

<table>
<thead>
<tr>
<th>Component</th>
<th>ICEI Service Type</th>
<th>ICEI Total Allocation (Raw Resource)</th>
<th>Allocatable Unit</th>
<th>ICEI (100%)</th>
<th>HBP (25%)</th>
<th>PRACE (15%)</th>
<th>National (60%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OpenStack Cluster</td>
<td>VM</td>
<td>35 servers</td>
<td>Servers</td>
<td>35</td>
<td>8.75</td>
<td>5.25</td>
<td>21.00</td>
</tr>
<tr>
<td>Piz Daint Multicore</td>
<td>SCC</td>
<td>250 nodes</td>
<td>Node-Hours</td>
<td>465375</td>
<td>116,344</td>
<td>69,806</td>
<td>279,225</td>
</tr>
<tr>
<td>Piz Daint Hybrid</td>
<td>SCC + IAC</td>
<td>400 nodes</td>
<td>Node-Hours</td>
<td>744600</td>
<td>186,150</td>
<td>111,690</td>
<td>446,760</td>
</tr>
<tr>
<td>Store POSIX and Object</td>
<td>ARD</td>
<td>1000 TB</td>
<td>TB</td>
<td>1000</td>
<td>250</td>
<td>150</td>
<td>600</td>
</tr>
<tr>
<td>Tape library</td>
<td>ARD</td>
<td>3000 TB</td>
<td>TB</td>
<td>3000</td>
<td>750</td>
<td>450</td>
<td>1,800</td>
</tr>
<tr>
<td>Low latency storage tier*</td>
<td>NVM</td>
<td>80 TB</td>
<td>TB</td>
<td>80</td>
<td>20</td>
<td>12</td>
<td>48</td>
</tr>
</tbody>
</table>

* Early access technology. User workflows need to be adapted/augmented.
### Resources currently available

<table>
<thead>
<tr>
<th>Component</th>
<th>Site</th>
<th>Total ICEI</th>
<th>Minimum Request</th>
<th>Technical Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scalable Computing Services</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Piz Daint Multicore                | CSCS (CH)  | 250 nodes  | 1 node          | • Memory per node 64/128 GB  
• Compute nodes/processors: 1813 Cray XC40 nodes with Two Intel® Xeon® E5-2695 v4 @ 2.10GHz (2 x 18 cores) CPUs  
• Interconnect configuration: Cray Aries |
| **Interactive Computing Services** |            |            |                 |                   |
| Piz Daint Hybrid                   | CSCS (CH)  | 400 nodes  | 1 node          | • Memory per node: 64 GB  
• GPU memory: 16 GB CoWoS HBM2  
• Compute nodes/processors: 5704 Cray XC50 nodes with Intel® Xeon® E5-2690 v3 @ 2.60GHz (12 cores) CPUs and NVIDIA® Tesla® P100 GPUs  
• Interconnect configuration: Cray Aries |
| **VM Services**                    |            |            |                 |                   |
| Pollux OpenStack Cluster           | CSCS (CH)  | 35 servers | 1 VM            | • 2 types of compute node:  
• Type 1 - CPU: 2x Intel E5-2660 v4 14C/RAM: 512 GB  
• Type 2 - CPU: 2x Intel(R) Xeon(R) CPU E5-2667 v3 @ 3.20GHz 8C/RAM: 768 GB  
• VMs can be of various flavours and use up to 16 cores |
| **Archival Data Repositories**     |            |            |                 |                   |
| Store POSIX and Object, including backup on Tape library (2x) | CSCS (CH)  | 4000 TB    | 1 TB            |                   |
| **Active Data Repositories**       |            |            |                 |                   |
| Low latency storage tier (DataWarp)| CSCS (CH)  | 80 TB      | 1 TB            | • Non-volatile Memory |

*Julich OpenStack Cluster currently in development*
How do I use ICEI Resources?

• Firstly, you will need to have obtained an account via an ICEI request application
  • More info with request form can be found here: https://collab.humanbrainproject.eu/#/collab/28520/nav/203167
  • Application form shown on next slide, lightweight document with only 5 short sections
  • In this session we will walk through an application for resources
1. Relation to HBP DoA and relevance to HBP call

Please provide information on the matched work packages, tools, CPMs, etc. and explain how the project relates to the goals and objectives of HBP. How does the project relate to the published HBP plan for resources in CEI?

2. Preliminary Work (in case of a project extension)

Please provide a brief summary of project works undertaken up to the first resource allocation.

3. IT resources requested

3.1 Resources

<table>
<thead>
<tr>
<th>Resource</th>
<th>Units</th>
<th>Quantity requested in total</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Resource 1]</td>
<td>[Unit 1]</td>
<td>[Quantity 1]</td>
</tr>
<tr>
<td>[Resource 2]</td>
<td>[Unit 2]</td>
<td>[Quantity 2]</td>
</tr>
</tbody>
</table>

3.2 Technical implementation plans

*Please explain why the requested resources are needed to achieve the scientific goal. Other costs of use per person (number and type of users, travel, etc.) and how much storage is expected to be available to store project. Once submitted, HBP reserves rights and reserves any requested resources.*

3.3 Does this project involve processing of personal data as defined by GDPR?

Please select "No" or "Yes", if you choose "Yes", please specify what kind of use is proposed:
- [ ] No
- [ ] Yes

4. Scientific methodology, goals and impact

4.1 Scientific implementation plans

*Please explain the methodology that will be applied in order to achieve the scientific goal of the project, highlighting scientific significance, novelty and potential for high impact and visibility of scientific research.*

4.2 Resource management and work plan

Please briefly describe how you plan to manage the requested resources.

4.3 Dissemination

*Please describe the planned channels and resources for dissemination and knowledge exchange. If you need resources are used to create CPM, please describe plans to be used also for the dissemination.*

References

Please provide key research papers and other relevant references that are relevant to the project.

Reference 1

Reference 2

Reference 3

Summary

The Resource Application Form is designed to help the project coordinator and the review committee assess the proposed project, ensuring that it aligns with the objectives and requirements of the HBP.
Hands-on

• Open the following link:
  https://collab.humanbrainproject.eu/#/collab/28520/nav/203167

• In the room there are 4 people from CSCS that can help you with this, feel free to ask us for assistance

• Once you have completed your application, send this to:
  icei-coord@fz-juelich.de
How to get Help or More Information

General Contact for HPAC Platform:
  • HPAC Platform:  
    https://collab.humanbrainproject.eu/#/collab/264/nav/2378

How to apply for resources:
  • Send your proposals to: icei-coord@fz-juelich.de

Getting help:
  • Send emails to: hpac-support@humanbrainproject.eu
Thank You

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