Our Mission

UA High Performance Computing (HPC) is an interdisciplinary research center focused on facilitating research and discoveries that advance science and technology. We deploy and operate advanced computing and data resources for the research activities of students, faculty, and staff at the University of Arizona. We also provide consulting, technical documentation, and training to support our users.

This site is divided into sections that describe the High Performance Computing (HPC) resources that are available, how to use them, and the rules for use.
Highlighted Research

Faster Speeds Need Faster Computation - Hypersonic Travel

Professors Christoph Hader, Himanshu Patel, and their team are exploring the use of our GPUs to optimize Navier-Stokes codes for simulating the flow field around hypersonic vehicles traveling at six times the speed of sound (Mach 6), or more.

In this image, instantaneous flow structures obtained from a DNS for a fixed cone at Mach 6 are visualized using O(circum)colo(sic)red with instantaneous temperature disturbance values. The small scales towards the end of the computational domain indicate the regions where the boundary layer is turbulent.

Quick Links

• **User Portal** — Manage and create groups, request rental storage, manage delegates, delete your account, and submit special project requests.
• **Open OnDemand** — Graphical interface for accessing HPC and applications.
• **Job Examples** — View and download sample SLURM jobs from our GitHub site.
• **Training Videos** — Visit our YouTube channel for instructional videos, researcher stories, and more.
• **Getting Help** — Request help from our team.

Quick News

Faster Interactive Sessions

Are you frustrated waiting for slow interactive sessions to start? Try using the standard queue on ElGato. We have provisioned 44 nodes to only accept the standard queue to facilitate faster connections. To access a session, try:

```
(puma) [netid@junonia ~]$ elgato
(elgato) [netid@junonia ~]$ interactive -a <your_group>
```

For more information on interactive sessions see our page: Running Jobs With SLURM.

Increased Ocelote Allocation

Do you like using Ocelote? Good news! On November 9th, the standard allocation on Ocelote was increased from 35,000 to 70,000 CPU hours.
Singularity is Now Apptainer

Singularity has been renamed Apptainer as the project is brought into the Linux Foundation. An alias exists so that you can continue to invoke `singularity`. Local builds are now possible in many cases and remote builds with Sylabs are no longer supported.

We only keep a reasonably current version of Apptainer. Prior versions are removed since only the latest one is considered secure. Apptainer is installed on all of the system’s compute nodes and can be accessed without using a module.

Anaconda on HPC

Anaconda is very popular and is available as a module. It expands the capability of Jupyter with Jupyter Labs; includes RStudio, and the Conda ecosystem. To access GUI interfaces available through Conda (e.g., JupyterLab), we recommend using an Open OnDemand Desktop session. See these instructions.

As a note, Anaconda likes to own your entire environment. Review those instructions to see what problems that can cause and how to address them.

Puma News

Have you tried Puma yet? Our latest supercomputer is larger, faster and has bigger teeth than Ocelote (ok, maybe not the last bit). Puma Quick Start

Since we upgraded Ocelote it has the same software suite as Puma. It is generally not as busy as Puma. So if your work does not need the capabilities of Puma, consider using Ocelote instead. This applies to GPUs also, if the P100s will work for you.

Now that we are into the second year of use, we have determined that we can increase the standard allocation. From the end of April 2022 the standard allocation of CPU hours is increased from 70,000 to 100,000.
## Calendars

### Maintenance Calendar

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>26 Jul 2023</td>
<td>Quarterly maintenance is scheduled from 6AM to 6PM on July 26th.</td>
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<tr>
<td>26 Apr 2023</td>
<td>Maintenance downtime is scheduled from 6AM to 6PM on April 26th for ALL HPC services</td>
</tr>
<tr>
<td>25 Oct 2023</td>
<td>Maintenance downtime is scheduled from 6AM to 6PM on January 25 for ALL HPC services</td>
</tr>
<tr>
<td>20 Jul 2022</td>
<td>Maintenance downtime is scheduled from 6AM to 6PM on July 20 for ALL HPC services</td>
</tr>
<tr>
<td>27 Apr 2022</td>
<td>Maintenance downtime is scheduled from 6AM to 6PM on April 27 for ALL HPC services</td>
</tr>
<tr>
<td>26 Jan 2022</td>
<td>Maintenance downtime is scheduled from 6AM to 6PM on January 26 for ALL HPC services</td>
</tr>
<tr>
<td>28 Jul 2021</td>
<td>Maintenance downtime is scheduled from 6AM to 6PM on July 28 for ALL HPC services</td>
</tr>
<tr>
<td>12 Jul 2021 - 01 Aug 2021</td>
<td>El Gato will be taken down for scheduled maintenance from July 12th through August 1st. Following maintenance, it will use SLURM as its scheduling software and have the same software image and modules as Ocelote and Puma.</td>
</tr>
<tr>
<td>01 Jun 2021 - 30 Jun 2021</td>
<td>Ocelote will be taken down for scheduled maintenance from June 1st through June 30th. During that time, its OS will be updated to CentOS 7 and its scheduler will be migrated to SLURM.</td>
</tr>
<tr>
<td>27 Jan 2021-28 Jan 2021</td>
<td>Maintenance downtime is scheduled from 6AM on January 27th through 6PM on January 28th for ALL HPC services</td>
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### Training Calendar

#### Intro to HPC

**Introduction to HPC**

[Click here for more detailed information](#)

#### Upcoming Workshops

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**Intro to Machine Learning**
### Machine Learning in Python

This short training class provides a brief introduction to key concepts of machine learning. The short lecture will be followed by two hands-on examples that emphasize running a Jupyter notebook on the HPC supercomputers. For the presence workshop you can stick around and use this as a consulting session.

#### Upcoming Workshops

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### Machine Learning in R

This short training class provides a brief introduction to key concepts of machine learning. It's a little different from the above one even considering the focus on R instead of Python. The short lecture will be followed by two hands-on examples that emphasize using RStudio on the HPC supercomputers. You can use RStudio on your laptop if you prefer.

#### Upcoming Workshops

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### Intro to Parallel Computing

#### Introduction to Parallel Computing

Click here for more detailed information

#### Upcoming Workshops

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### Intro to Containers

#### Introduction to Containers

Click here for more detailed information

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### Data Management Workshops
Data Management Workshops

Click here for more detailed information

Upcoming Workshops

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