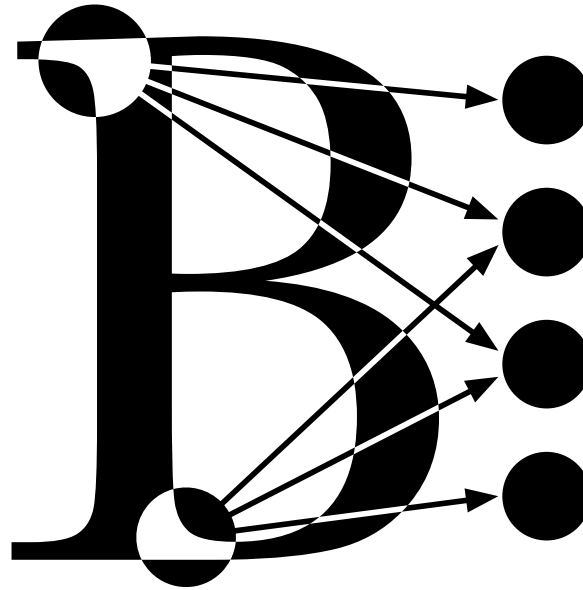


Baskerville - past and future

Gavin Yearwood,
University of Birmingham,
Advanced Research Computing (ARC) Team

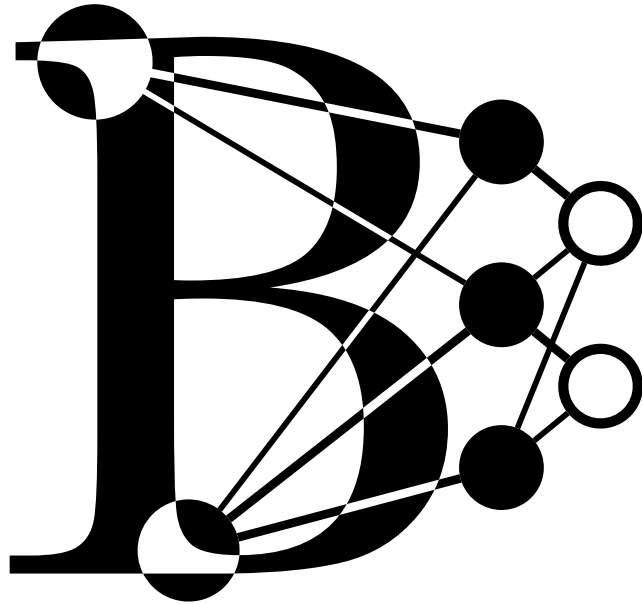
Baskerville

- Baskerville Tier 2 HPC



Baskerville

- Baskerville NCR (National Compute Resource)



Baskerville Tier 2



- Official start 14th September 2021
- End 30th March 2026
- Initial investment of £4 million
- 228 A100 GPUs, IceLake CPUs
 - 46 A100-40 GPU nodes
 - 11 A100-80 GPU nodes
 - 2 H100-80 GPUs Benchmark nodes, AMD EPYC CPUs
- SLURM scheduler

Baskerville Users

Research Partners



Technology Partners



- Over 930 total users over Baskerville lifetime
- 3 ways to access Baskerville:
 1. **University of Birmingham** expected HPC experience
 2. **Consortium partners** range of experience we did annual training
 3. **EPSRC** typically very experienced and software requests in application
- Either self-installed (virtual environments or containers)
- Range of packages requested, but we want to maximise GPU usage

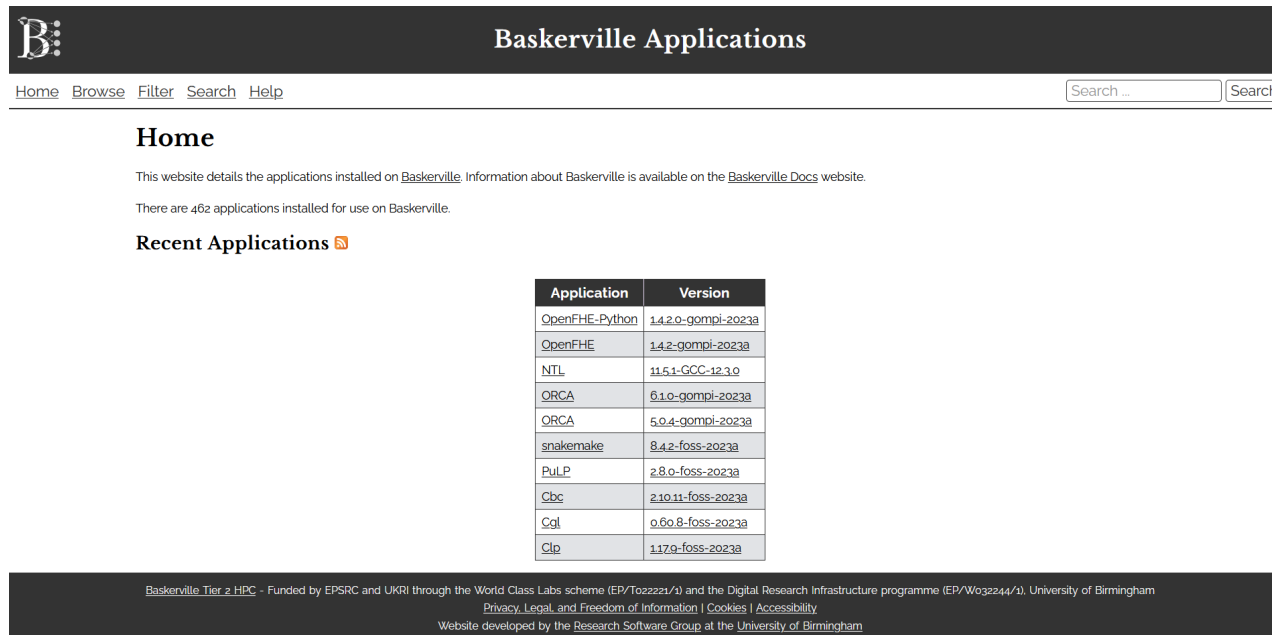
Baskerville Job Priority

GPU Utilisation for 30 Mar 2026:

0.0%

- Aim to maximise usage
- Each site has a set percentage of Baskerville
- Job priority would change based on overall usage
- Projects given a limit of GPU hours
 - Except some consortium partners
 - Soft limit, email sent to project

Baskerville Modules



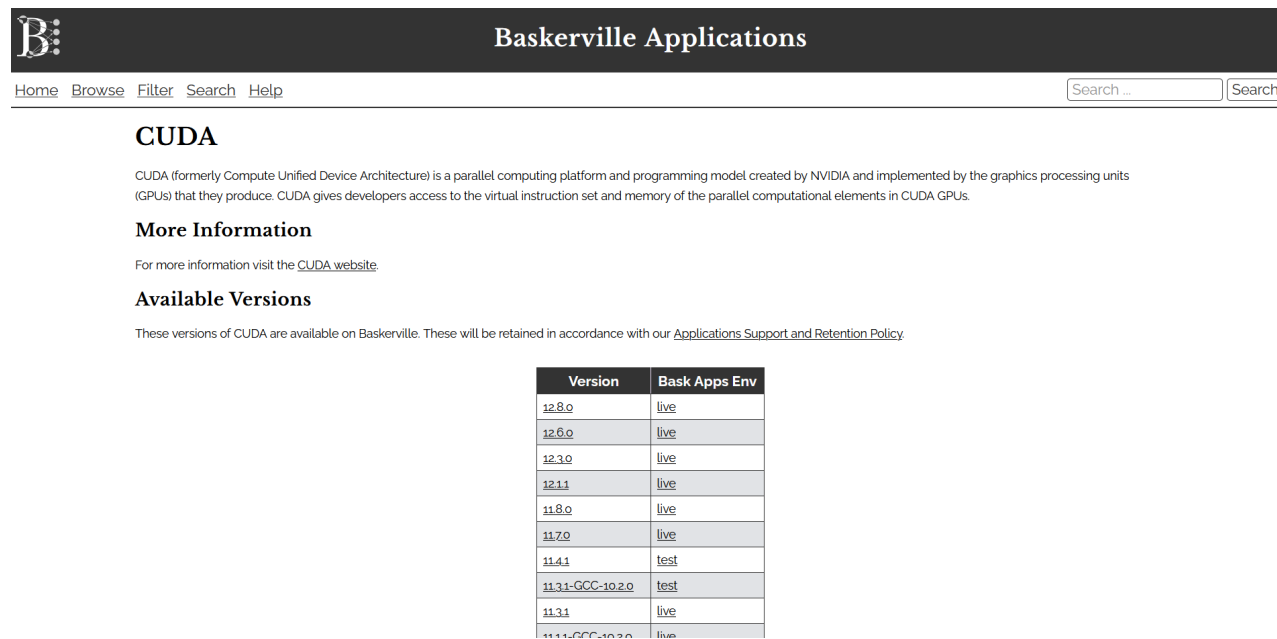
The screenshot shows the Baskerville Applications website. The header includes the Baskerville logo (a stylized 'B' with three dots) and the text 'Baskerville Applications'. Below the header is a navigation menu with links for 'Home', 'Browse', 'Filter', 'Search', and 'Help', along with a search bar. The main content area is titled 'Home' and contains the following text: 'This website details the applications installed on Baskerville. Information about Baskerville is available on the Baskerville Docs website. There are 462 applications installed for use on Baskerville.' Below this is a section titled 'Recent Applications' with a small icon. A table lists the following applications and their versions:

Application	Version
OpenFHE-Python	1.4.2.0-gompi-2023a
OpenFHE	1.4.2-gompi-2023a
NITL	11.5.1-GCC-12.3.0
ORCA	6.1.0-gompi-2023a
ORCA	5.0.4-gompi-2023a
snakemake	8.4.2-foss-2023a
PuLP	2.8.0-foss-2023a
Cbc	2.10.11-foss-2023a
Cgl	0.60.8-foss-2023a
Clp	1.17.9-foss-2023a

At the bottom of the page, there is a footer with the following text: 'Baskerville Tier 2 HPC - Funded by EPSRC and UKRI through the World Class Labs scheme (EP/T02221/1) and the Digital Research Infrastructure programme (EP/W032244/1), University of Birmingham. Privacy, Legal, and Freedom of Information | Cookies | Accessibility. Website developed by the Research Software Group at the University of Birmingham.'

- Website <https://apps.baskerville.ac.uk>
- Apps installed via EasyBuild
- 462 applications installed
- Dev install, GitLab PR and then live

Baskerville Modules



Baskerville Applications

Home Browse Filter Search Help Search ... Search

CUDA

CUDA (formerly Compute Unified Device Architecture) is a parallel computing platform and programming model created by NVIDIA and implemented by the graphics processing units (GPUs) that they produce. CUDA gives developers access to the virtual instruction set and memory of the parallel computational elements in CUDA GPUs.

More Information

For more information visit the [CUDA website](#).

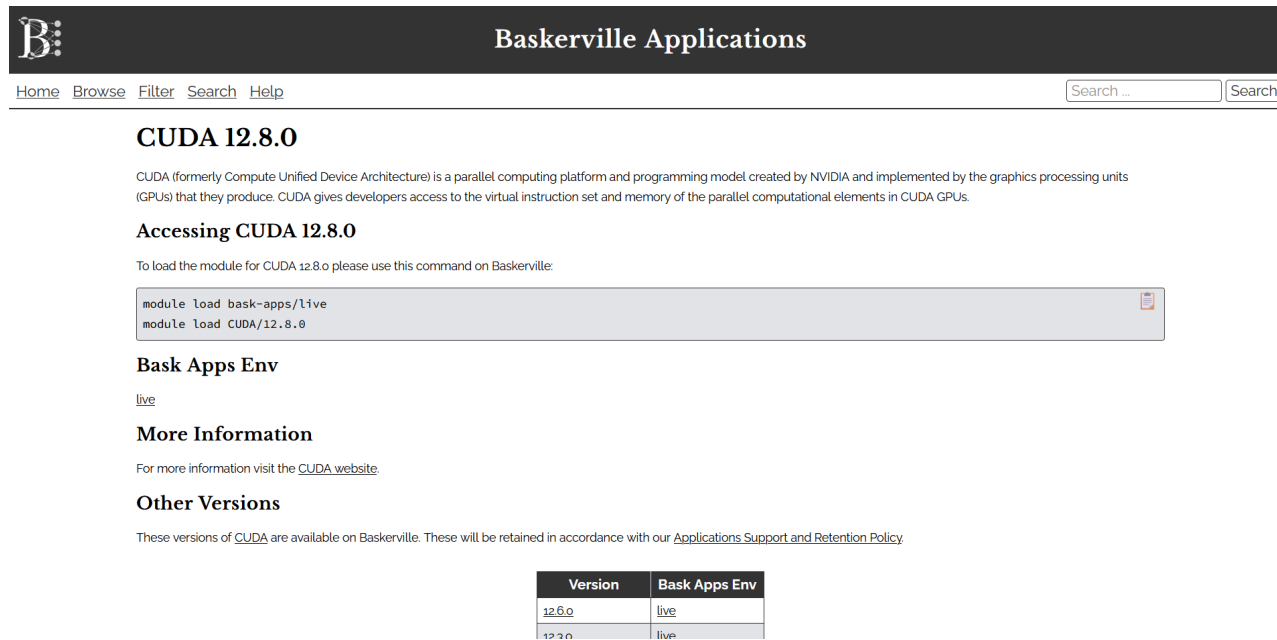
Available Versions

These versions of CUDA are available on Baskerville. These will be retained in accordance with our [Applications Support and Retention Policy](#).

Version	Bask Apps Env
12.8.0	live
12.6.0	live
12.3.0	live
12.1.1	live
11.8.0	live
11.7.0	live
11.4.1	test
11.3.1-GCC-10.2.0	test
11.3.1	live
11.1.1-GCC-10.2.0	live

- Website <https://apps.baskerville.ac.uk>
- Apps installed via EasyBuild
- 462 applications installed
- Dev install, GitLab PR and then live
- 2023a latest toolchain, but newer CUDA versions (12.8.0)

Baskerville Modules



The screenshot shows the Baskerville Applications website. The header includes the Baskerville logo and navigation links: Home, Browse, Filter, Search, Help. A search bar is present on the right. The main content area is titled "CUDA 12.8.0" and includes a description of CUDA, a section for "Accessing CUDA 12.8.0" with a terminal code block, and sections for "Bask Apps Env", "More Information", and "Other Versions".

```
module load bask-apps/Live
module load CUDA/12.8.0
```

Version	Bask Apps Env
12.6.0	live
12.7.0	live

- Website <https://apps.baskerville.ac.uk>
- Apps installed via EasyBuild
- 462 applications installed
- Dev install, GitLab PR and then live
- 2023a latest toolchain, but newer CUDA versions (12.8.0)
- Apps site provides more information and module load commands

Baskerville Portal

- OnDemand <https://www.openondemand.org/>
- Useful for non traditional HPC users
- Portal applications:
 - JupyterLab (GPU)
 - Apptainer version of JupyterLab
 - Lmod extension to load modules
 - Can use Conda environments (MiniForge module)
 - TensorboardX (CPU)
 - Linaro-Forge (CPU and GPU)
 - RELION (CPU) & doppio (CPU)
 - Submit jobs in GUI to use GPUs

Baskerville Jobs

Total Jobs	Non-portal	Portal
1,468,024	1,438,348	29,676
Total GPUh	Non-portal	Portal
5,834,309	4,775,601	1,058,708*

Portal Jobs **2%** of total jobs submitted,
but **18.1%** of total GPU hours

*idle session

Baskerville NCR

Baskerville NCR system



- Early stages
- Initial investment of £18 million
- Blackwell (B200) GPUs with Intel CPUs
- *GPU partitioning*

Baskerville NCR Users

Select campus: **UK** Dubai

UNIVERSITY OF BIRMINGHAM






Search Menu

Home > News

University of Birmingham to host national computing centre

New centre will harness advanced technology to process vast amounts of data at incredible speed and achieve breakthroughs faster than ever.

26 February 2026

Share:     

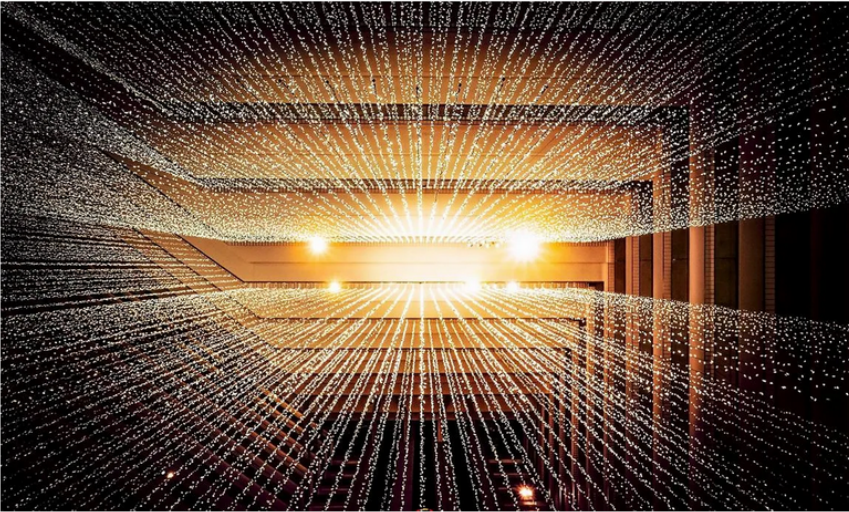


Photo by Joshua Sortino on Unsplash

The University of Birmingham has secured £18 million of funding to create a cutting-edge national computing centre that will help accelerate research and innovation across the UK.

- Wider range of disciplines
- No consortium partners
- Higher level of HPC experience expected

Baskerville NCR Modules

- Early stages
- Built off the strong points of Baskerville
 - Strong emphasis on self-installations
 - Provide up to date toolchains (Python, CUDA, etc)
 - Most likely fewer central installations
 - OnDemand, but also reduced

The BlueBEAR in the room



- A strong influence on what we have done on Baskerville and will do on Baskerville NCR is BlueBEAR
- BlueBEAR is our tier 3 HPC system:
 - More users
 - More software installed (over 2,000)
 - More extensive testing of installed applications (Reframe)

Thank You

Baskerville Tier 2 HPC funded by the EPSRC and UKRI through the World Class Labs scheme (EP/T022221/1) and the Digital Research Infrastructure programme (EP/W032244/1),

University of Birmingham