Nimbus technical overview and Cost estimation

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11-Mar-2025

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Nimbus is the University cloud HPC system. Some of the technical insights for the cluster include the following:

Address the most challenging research questions in significantly less time than typically needs.

Hosted in the Microsoft Azure cloud; it runs on regularly updated cutting-edge hardware.

Nimbus offers various instance types , including Fsv2, HB, HBV*, NCv3, and NDv3 families.

The cloud environment gives you a simple way to configure workloads.

Two clusters working alternatively, to allow for continuous development of the system.

Available to all academic staff and PhD students.

Nimbus provides users access a number of different compute instances.

- The instance types currently available in Nimbus:

Instance type	CPU model	vCPUs	GPU model	vGPUs	Use for
fsv2	Intel skylake	1, 2, 4, 8, 16, 32, 48, 64, 72	-	-	Apps driven by compute
hb	AMD Epyc Naples	60	-		Apps driven by memory bandwidth
hbv2	AMD Epyc Rome	120	-		Apps driven by memory bandwidth
hbv3	AMD Epyc Milan	120	-		Apps driven by memory bandwidth
hc	Intel skylake	44	-		Apps driven by compute
ncv3	Intel Broadwell	6	Tesla v100	1	GPU accelerated workloads and visualisation sessions.
ncv3	Intel Broadwell	12	Tesla v100	2	GPU accelerated workloads and visualisation sessions.
ncv3	Intel Broadwell	24	Tesla v100	4	GPU accelerated workloads and visualisation sessions.
ncv3r	Intel Broadwell	24	Tesla v100	4	GPU accelerated workloads and visualisation sessions.
ndv2	Intel skylake	40	Tesla v100	8	GPU accelerated workloads and visualisation sessions.

Costs need to be taken into account when running jobs on Nimbus. Different instance types have different pricing models.

- The prices listed here are calculated based on today's price [11-Mar-2024]
- To check the latest prices for each instance, visit **Azure Prices**
- The university offers a price calculator for all users. Check the daily spend by visiting **Research Computing Cost Estimator**.
- Azure spot nodes offer discounted pricing for unused capacity, suitable for non-critical tasks. Note: A spot instance resource can be taken away at any time by Microsoft.

Instance type	vCPUs	vGPUs	Spot price per Hour	Pay as you go price per Hour
fsv2	2, 4, 8, 16, 32, 48, 64, 72	-	From £0.01 - £0.46	From £0.08 - £3.01
hb	60		From £0.41	From £2.96
hbv2	120		From £0.65	From £4.68
hbv3	120		From £0.65	From £4.68
hc	44		From £0.57	From £4.12
ncv3	6	1	From £0.53	From £3.82
ncv3	12	2	From £1.07	From £7.65
ncv3	24	4	From £2.12	From £15.19
ncv3r	24	4	From £2.35	From £16.82
ndv2	40	8	From £3.85	From £27.53

Review status

This document is version	1.0
Reason for release of new version	Customer version
Ready for review	28/05/24
Technical review sign-off	14/06/24 Roberto Scipioni
Commercial review sign-off	29/05/24
Copy edit review sign-off	29/05/24
Approved for release	29/05/24

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