



UNIVERSITEIT
GENT

HPC-UGENT UPDATE

HPC-UGent user meeting
hpc@ugent.be

29 May 2026
<https://www.ugent.be/hpc>

AGENDA

- HPC infrastructure & services overview
- Results of user questionnaire
- Presentation by VSC on the new Tier-1 cluster sofia @ VUB
- Presentation on the EESSI initiative, the European Environment for Scientific Software Installations
- Time for Q&A
- Lunch after the meeting

ABOUT HPC-UGENT

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Mission

HPC-UGent provides centralised **scientific computing** services, training, and support for researchers from Ghent University, industry, and other knowledge institutes.

HPC-UGent is part of the ICT functional domain of Ghent University, and is a strategic partner of the Flemish Supercomputer Center (VSC).

ABOUT HPC-UGENT

1 Mission – 2 Teams

- *Support research and scientific computing*
(service cluster: user relation management)
- *Compute infrastructure*
(service cluster: service management and operations)

Functional Domain ICT

University Service Real Estate and Campus Facilities, ICT and Student Facilities' (UD3)

ABOUT HPC-UGENT

Support research and scientific computing ('support')

- Teamleader Ewald Pauwels
- Currently 7 staff members
- Tasks include
 - Helpdesk for scientific computing
 - Resource and project follow-up
 - Documentation for scientific computing
 - Software installation as a service
 - Training and user outreach
 - UGent contribution in various EuroHPC projects
 - UGent representation in VSC

ABOUT HPC-UGENT

Compute infrastructure ('ops')

- Teamleader Wouter Depypere
- Currently 8 staff members
- Tasks include
 - Maintain and upgrade HPC clusters, ensuring stability and availability
 - Allocate compute resources and storage capacity
 - Provide solutions for storing, securing, and accessing large data sets
 - Continuously improve and expand the HPC infrastructure to meet growing computing needs

ACTIVITIES & UPDATES

Publications

Here you find a selection of our downloadable annual reports, promotional and support documents





VSC | Annual Report 2023
(EN)



VSC | Annual Report 2023
(NL)



Vlaams Supercomputer Centrum
Annual Report
2022



Vlaams Supercomputer Centrum
Jaarverslag
2022



TIER2 INFRASTRUCTURE

Currently 7 clusters in production:

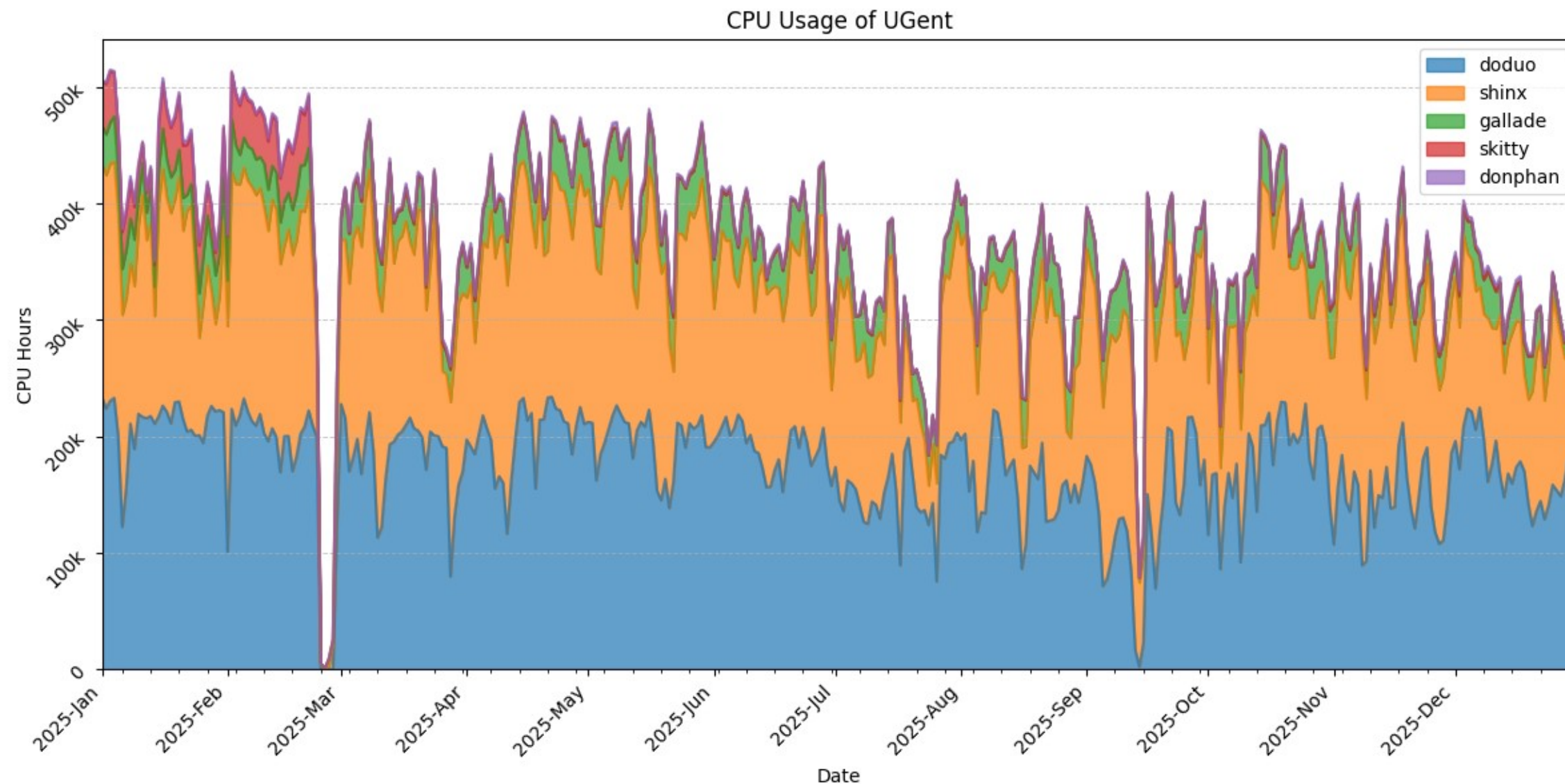
- 3 CPU clusters: doduo (↓), gallade, shinx (~~skitty~~) (+skiddo soon)
- 3 GPU clusters: joltik, accelgor, litleo
- 1 interactive debug cluster: donphan

Main shared storage:

- | | | |
|-----------------|-----------------|----------|
| • \$VSC_HOME | 60 TB (usable) | 47% full |
| • \$VSC_DATA | 2.7 PB (usable) | 63% full |
| • \$VSC_SCRATCH | 2.6 PB | 56% full |

<https://docs.hpc.ugent.be/infrastructure/>

TIER2 USAGE - CPU



Maintenance windows

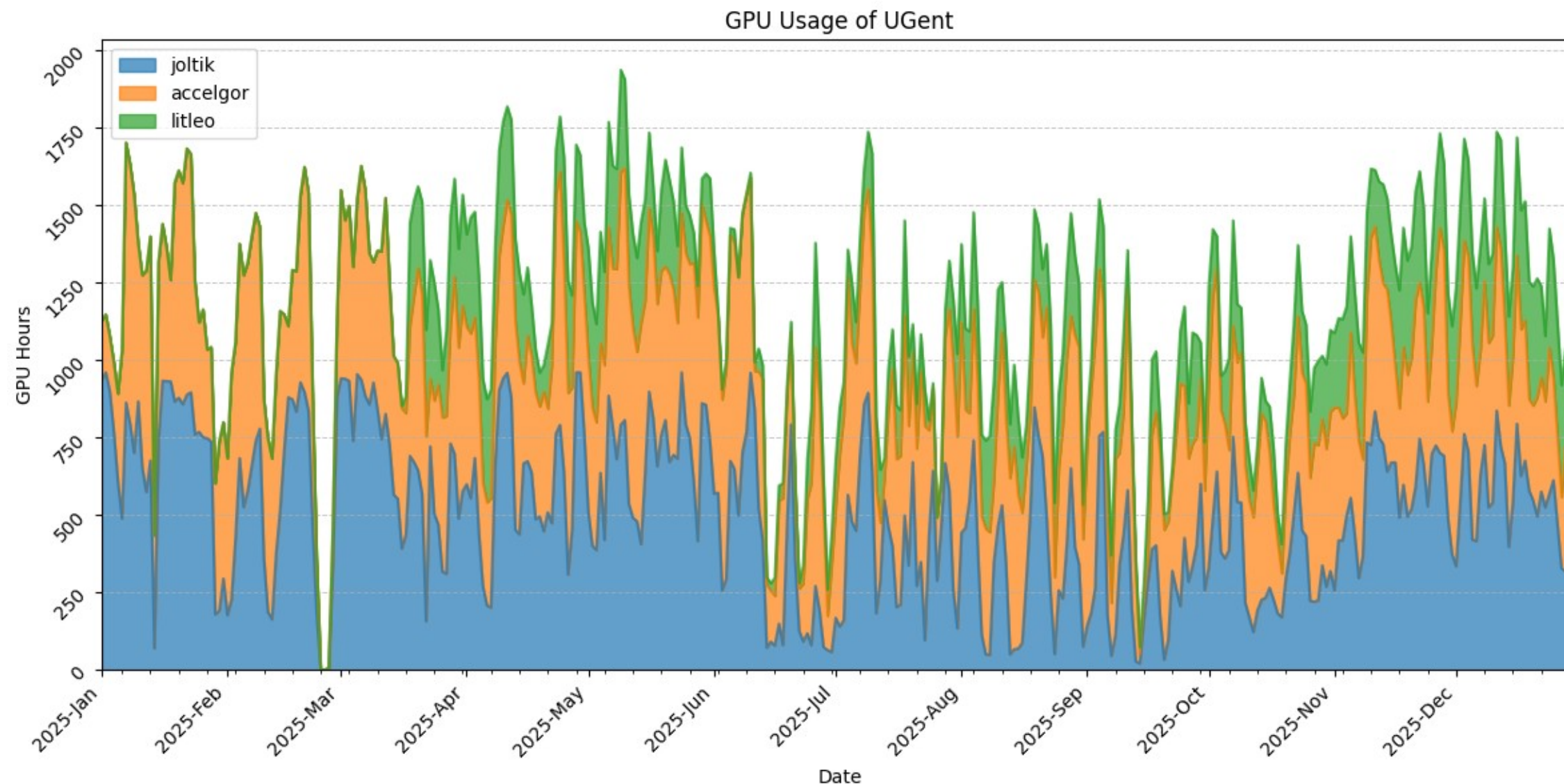
24-28/02 network

11/07 datacenter test

12/09 urgent OS update

Total CPU usage in 2025: 140.908.111 CPU hours
(equals 16.085 years compute time on 1 core)

TIER2 USAGE - GPU



Maintenance windows

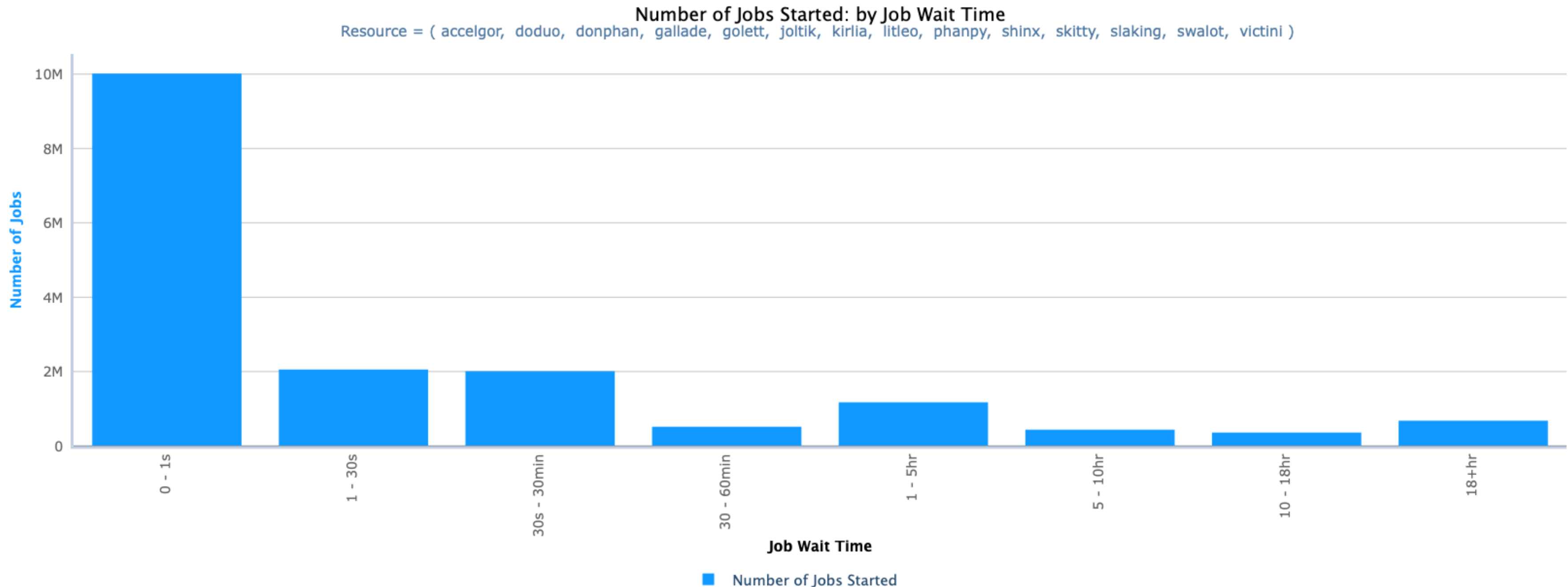
24-28/02 network

11/07 datacenter test

12/09 urgent OS update

Total GPU usage in 2025: 424.818 GPU hours
(equals 48 years compute time on 1 GPU)

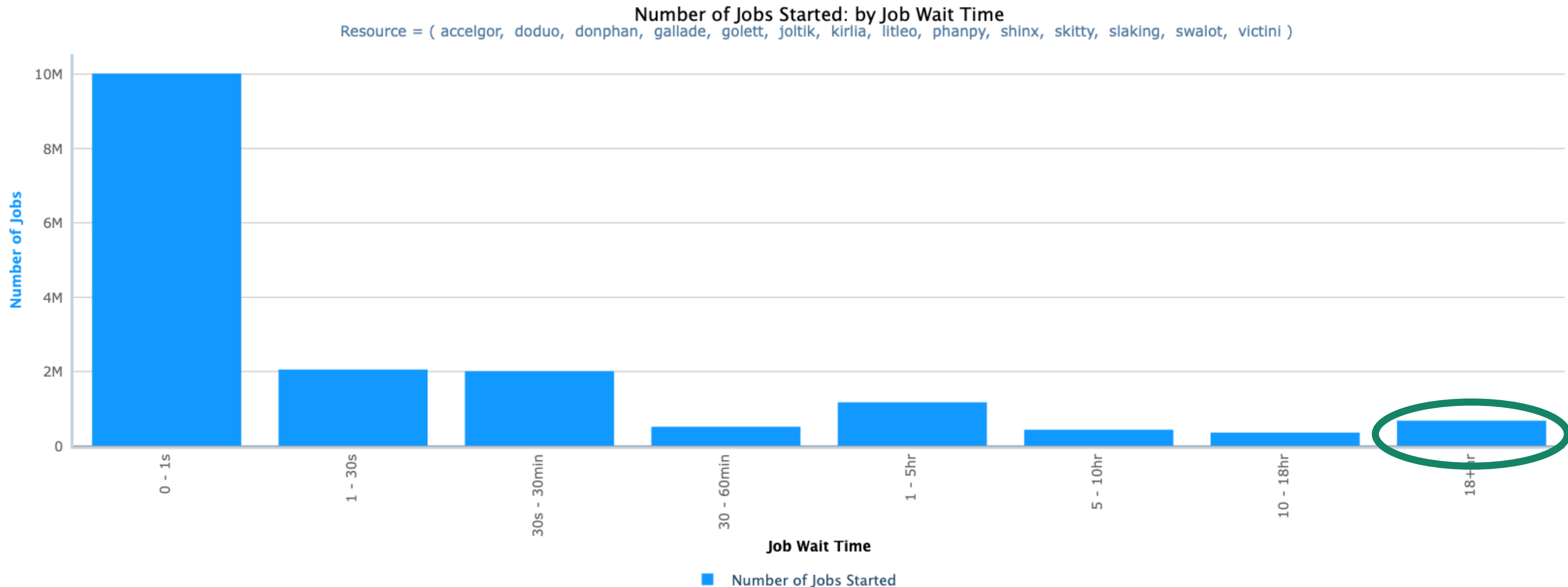
TIER2 USAGE – WAITING TIMES



Based on data from entire 2025

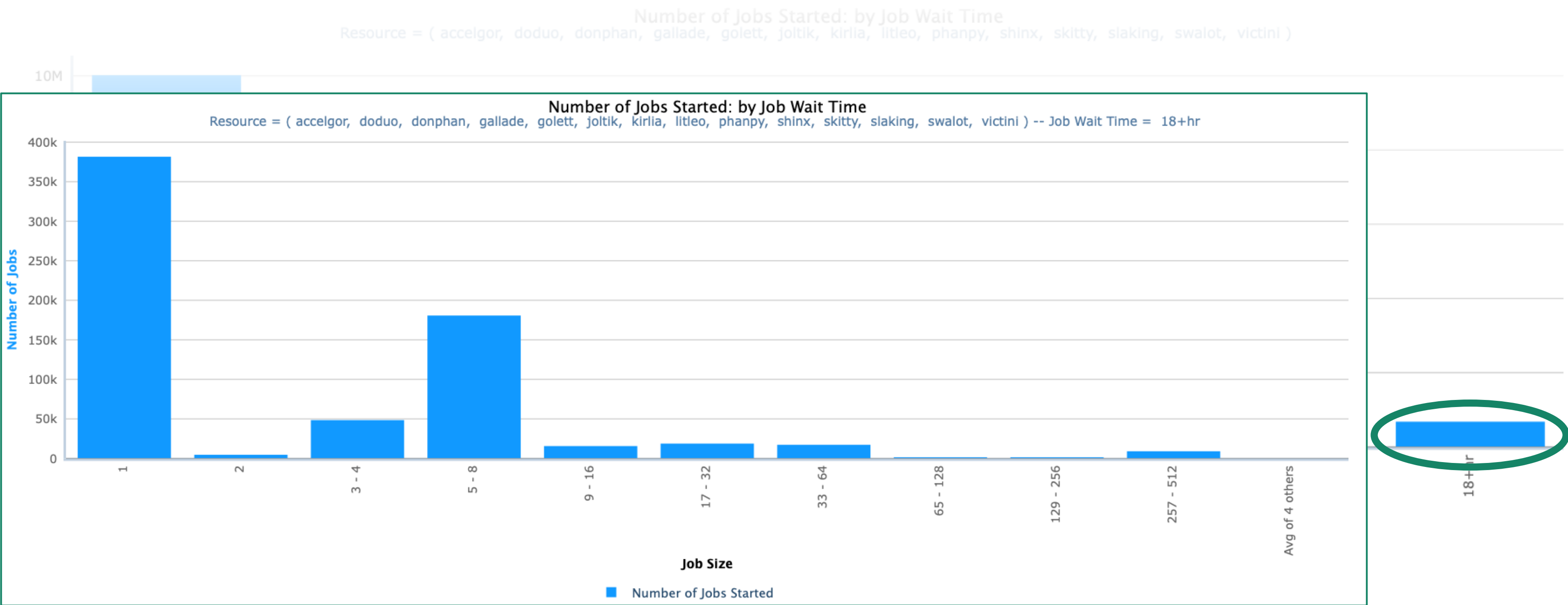
Of all jobs: 70% starts within 30s, 85% within 1 hour

TIER2 USAGE – WAITING TIMES



Of all jobs: 4% takes more than 18h to start

TIER2 USAGE – WAITING TIMES



Of those jobs: 56% request 1 core, 34% request 2-8 cores

TIER2 USAGE

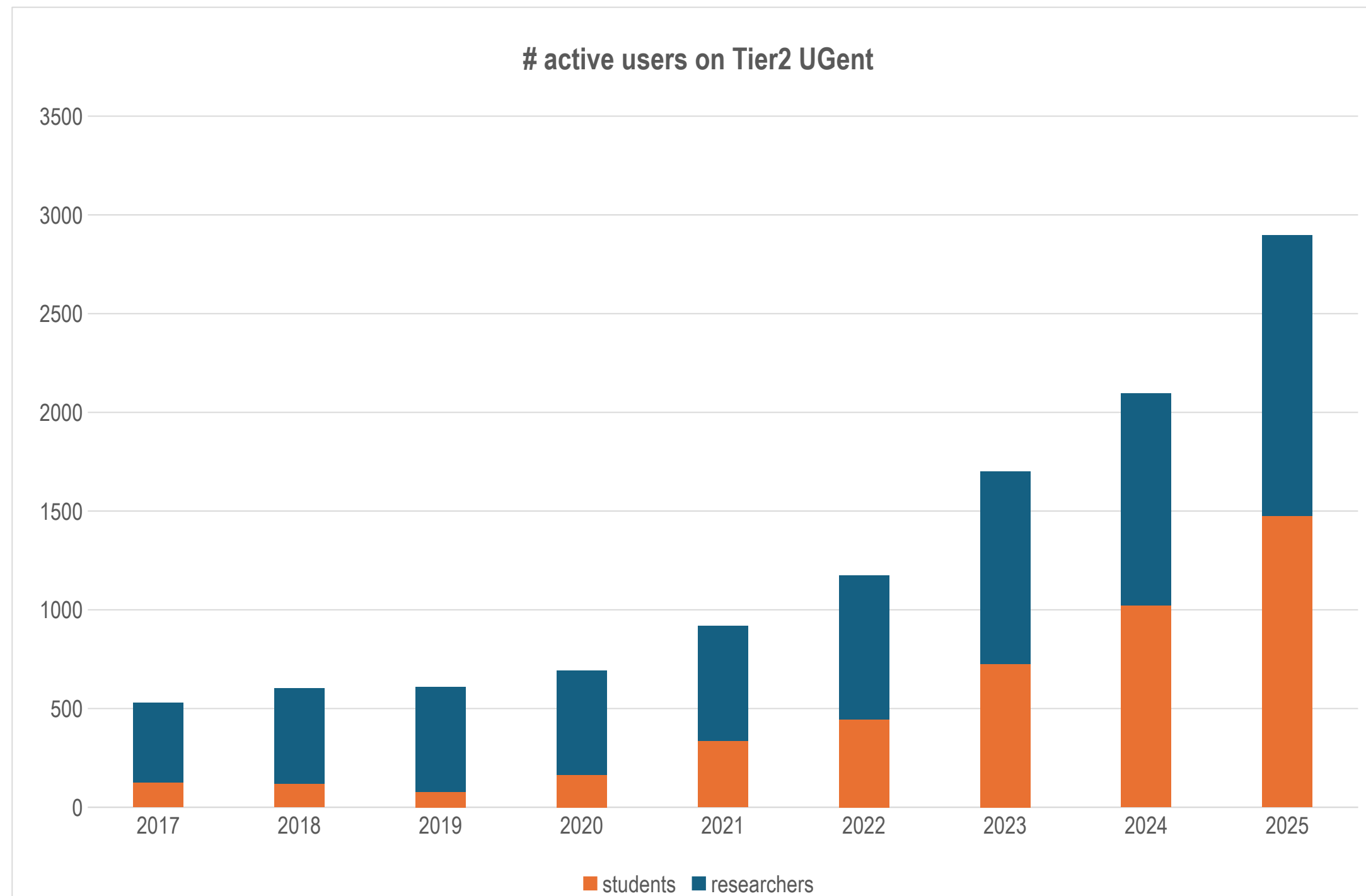
Usage across institutes in 2025

	#users	CPU	GPU
UAntwerpen	34	2.9%	5.6%
VUB	16	0.0%	0.1%
UGent	2806	96.3%	90.0%
KULeuven/UHasselt	41	0.2%	3.7%
Other institutes, companies	81	0.6%	0.6%

Usage by personnel category

	#users	CPU	GPU
Students	1477	6%	19%
Researchers	1420	94%	81%

TIER2 USAGE



Use the HPC infrastructure for teaching and training



https://docs.hpc.ugent.be/teaching_training

TIER2 DATA POLICY

WELL BEFORE leaving university, users should offload their data

- Clean up (delete)
- Transfer data to coworkers
- Take personal backups

Data transfer by HPC staff should be last resort measure

- error-prone, manual process, risks storage integrity risks
- very time-consuming

https://docs.hpc.ugent.be/sites/hpc_policies/#data-access-retention

VSC SERVICES & ACTIVITIES

TIER1 – VSC INFRASTRUCTURE

Tier-1 Model (SAAS)

Supercomputing-as-a-Service

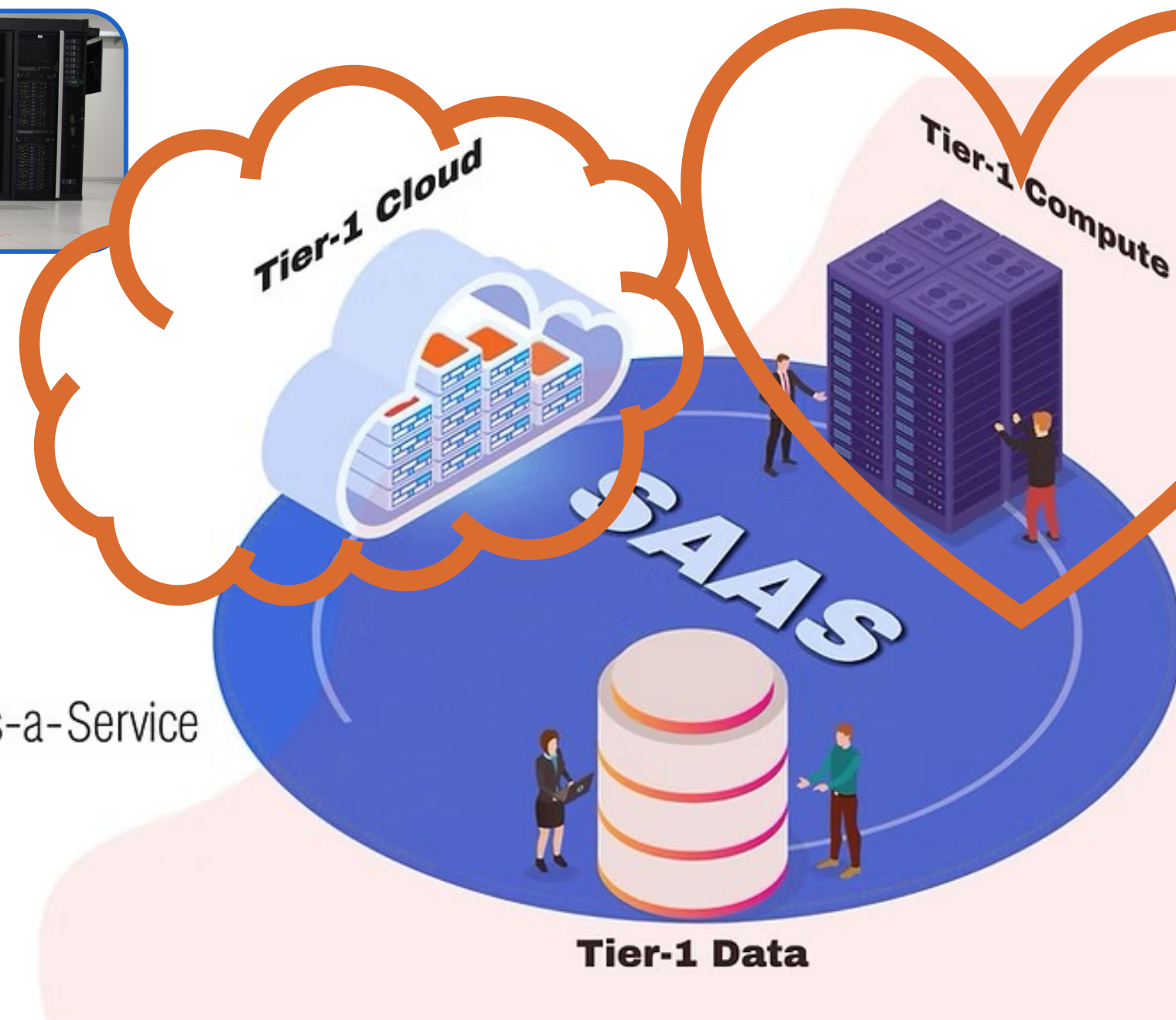


TIER1 – VSC INFRASTRUCTURE

Maintenance and support by HPC-UGent teams



**Tier-1 Model
(SAAS)**
Supercomputing-as-a-Service



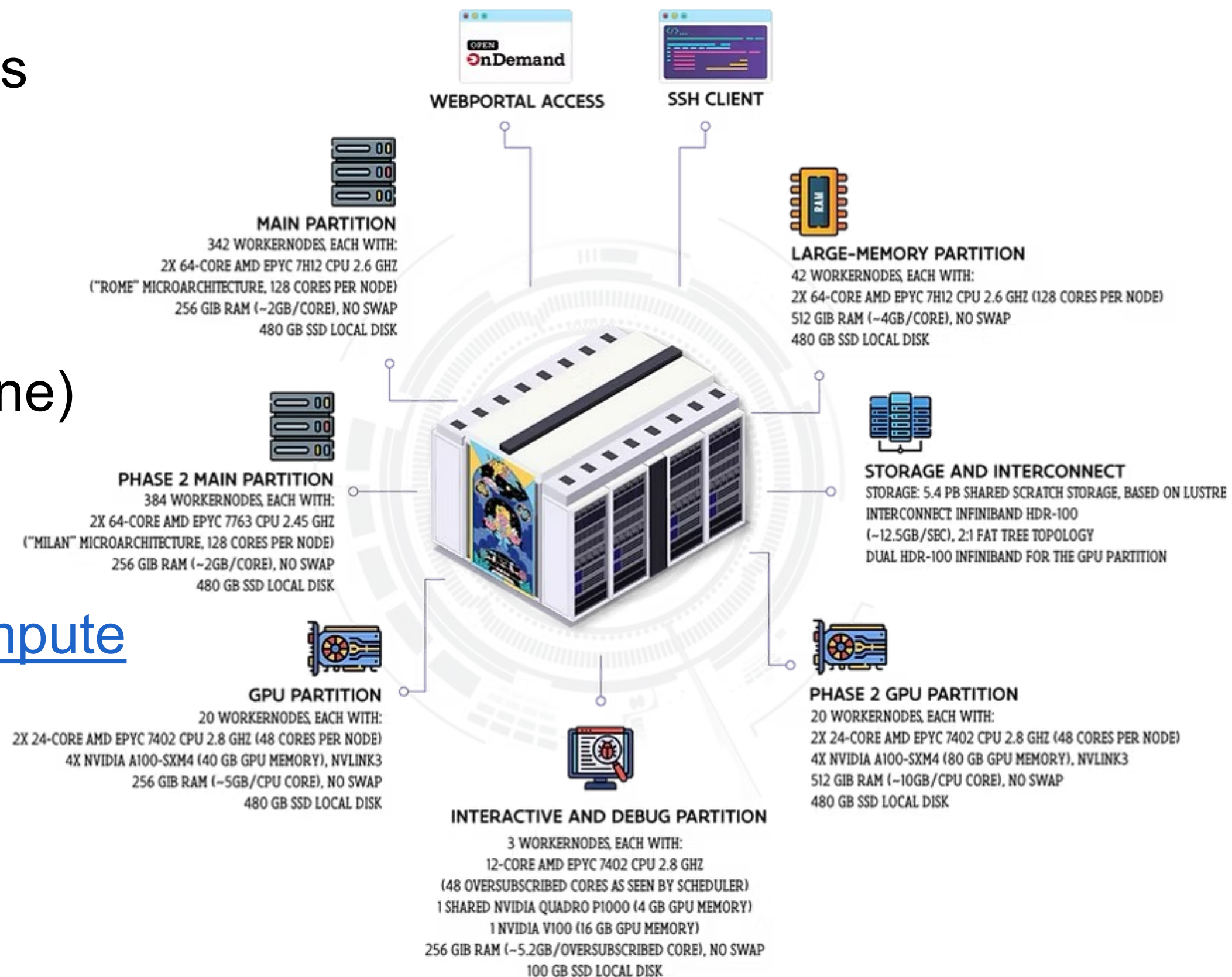
TIER1 COMPUTE HORTENSE

+100.000 cores and 160 GPUs

Project based access

- Starting grant
- Project (next cutoff: 1 June)
- Collaborative grant
- Industry

<https://www.vscentrum.be/compute>



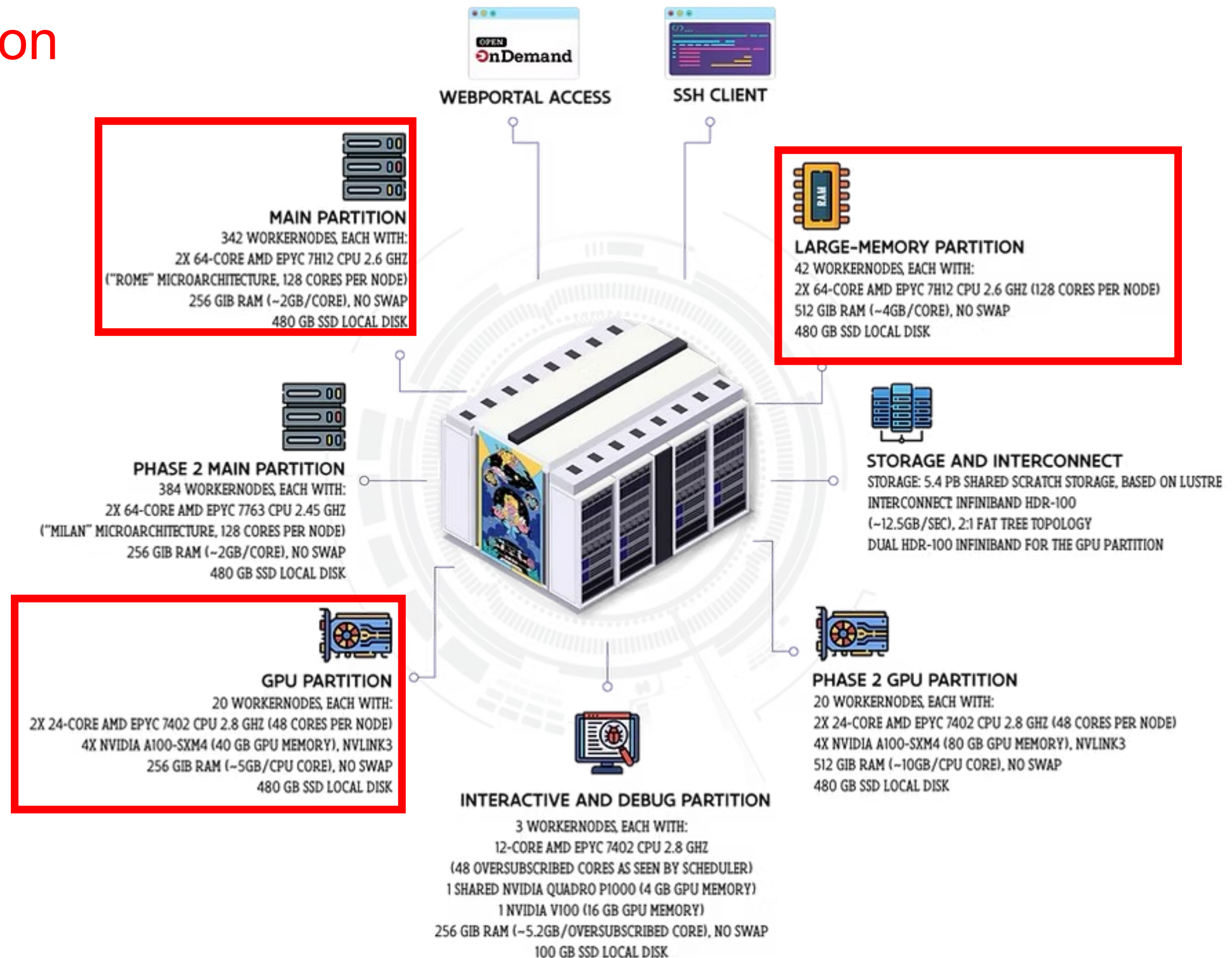
TIER1 COMPUTE HORTENSE

Decommissioning **Rome** partition

- original plan Nov 2025
- new plan end June 2026

!!! New Tier1 at VUB !!!

sofia
SUPERCOMPUTER



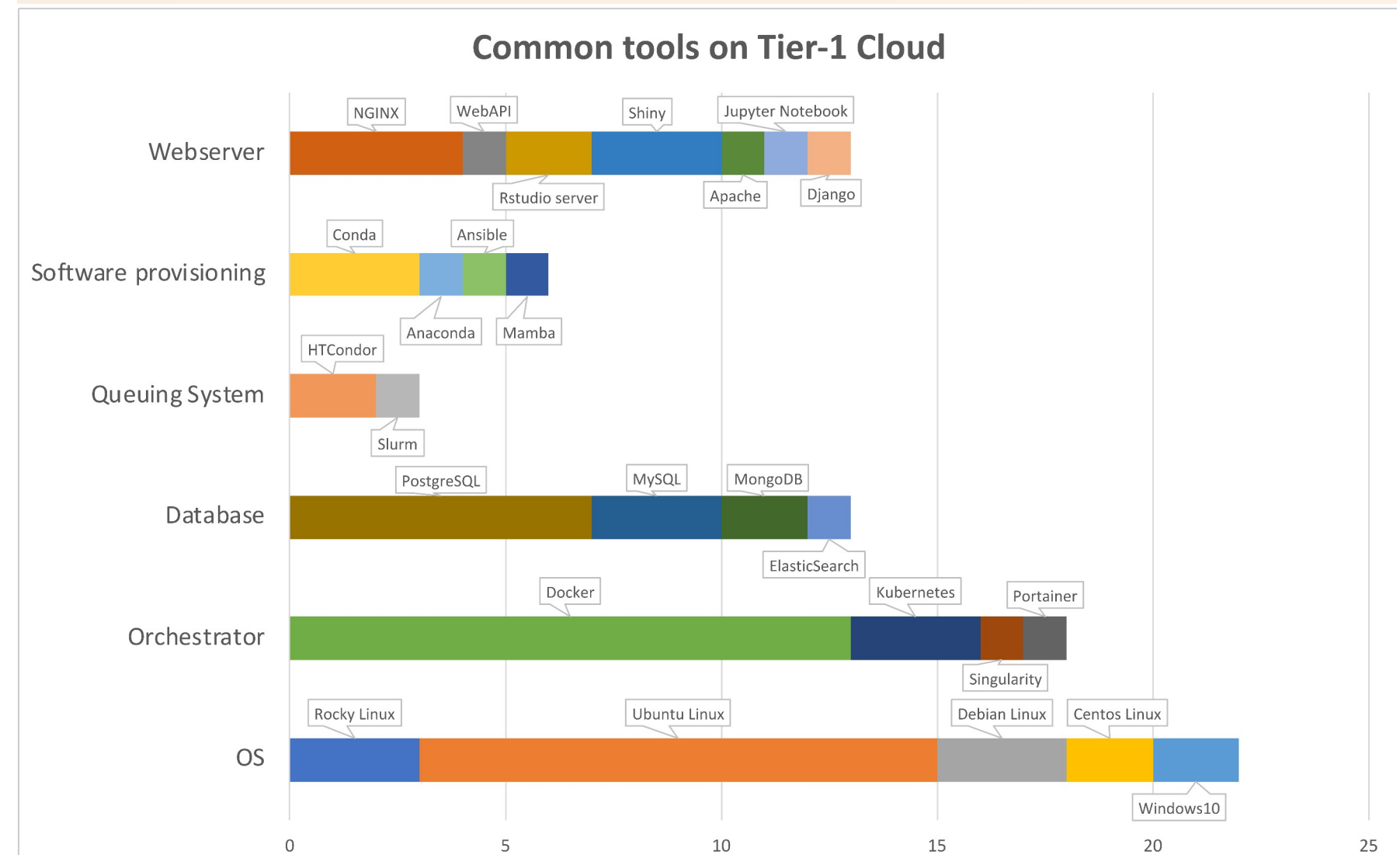
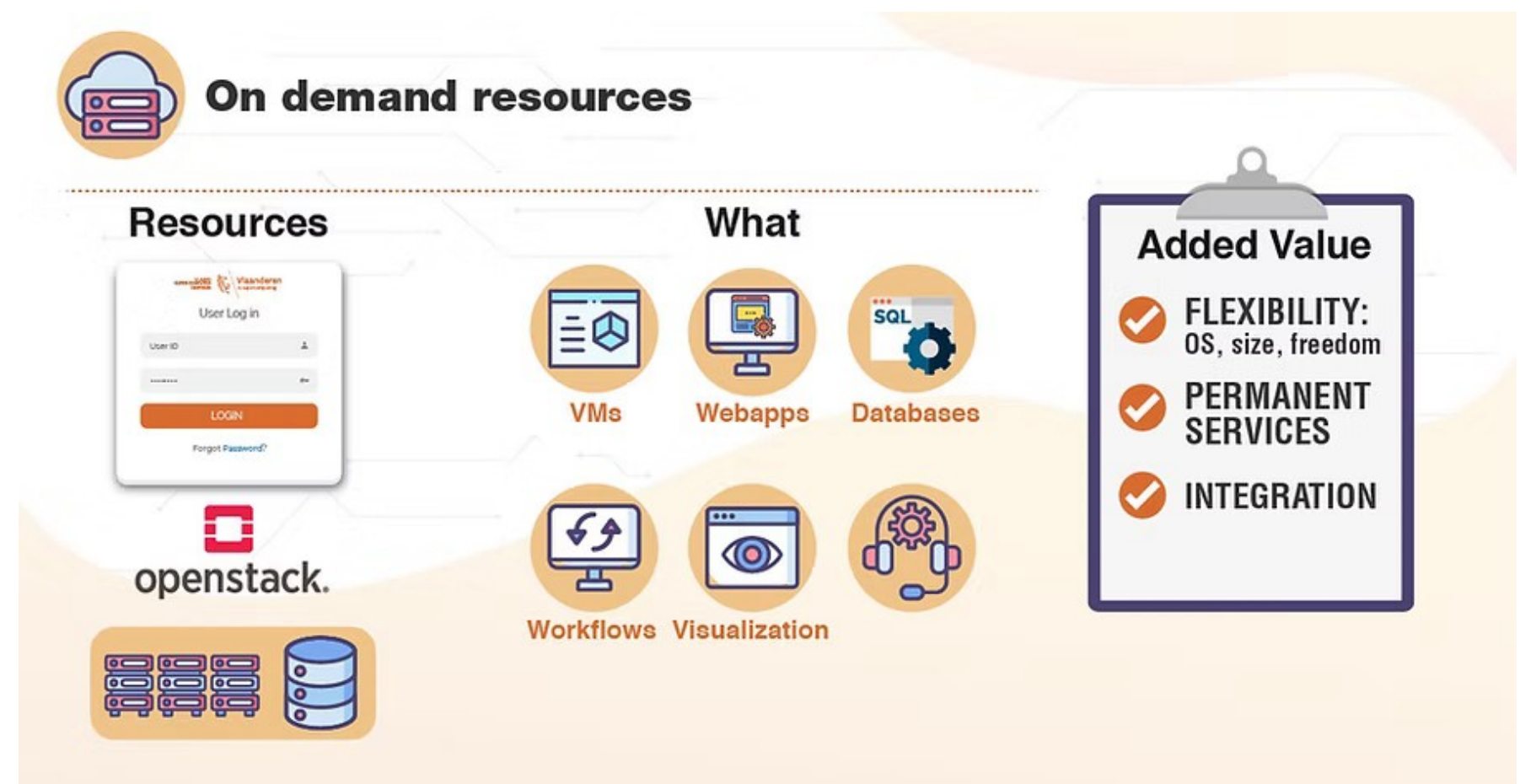
TIER1 CLOUD

Unmanaged VMs
For power users

Project based access

- Starting grant
- Project (no cutoffs)

<https://www.vscentrum.be/cloud>



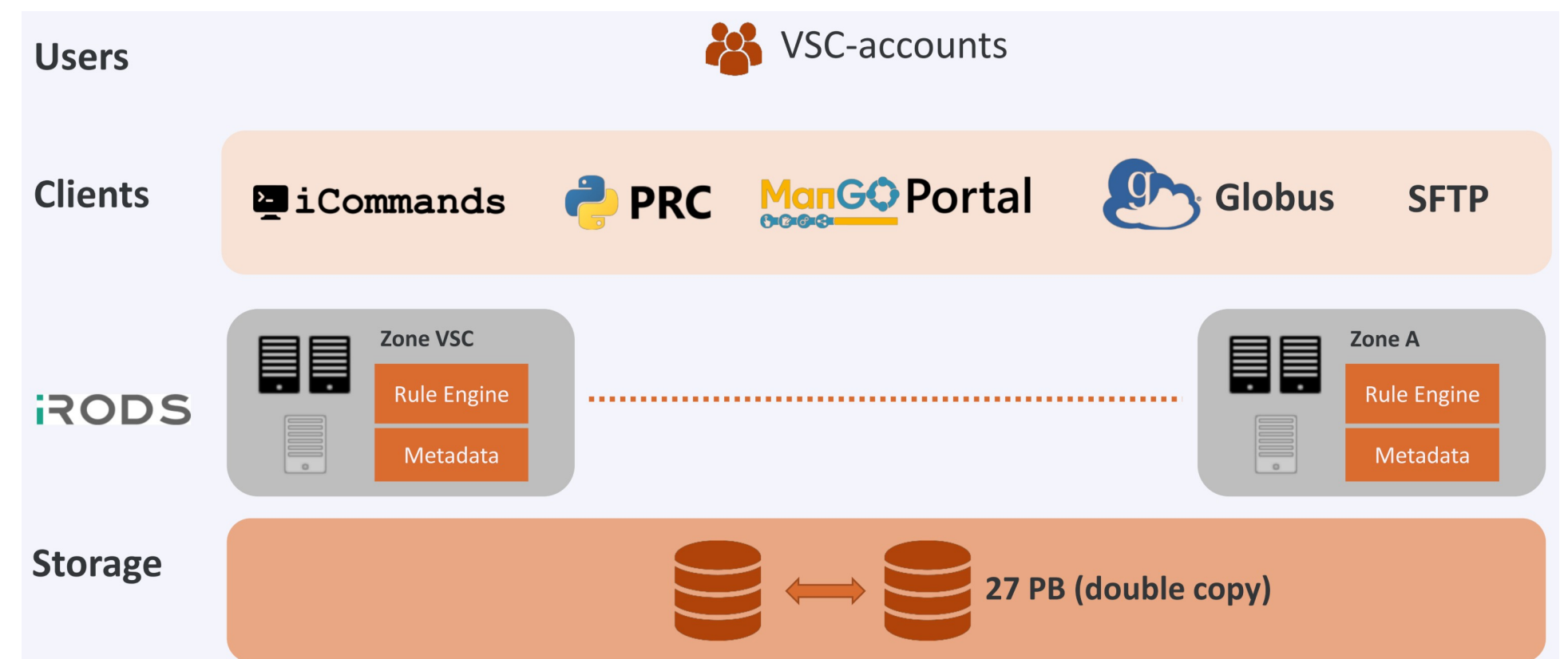
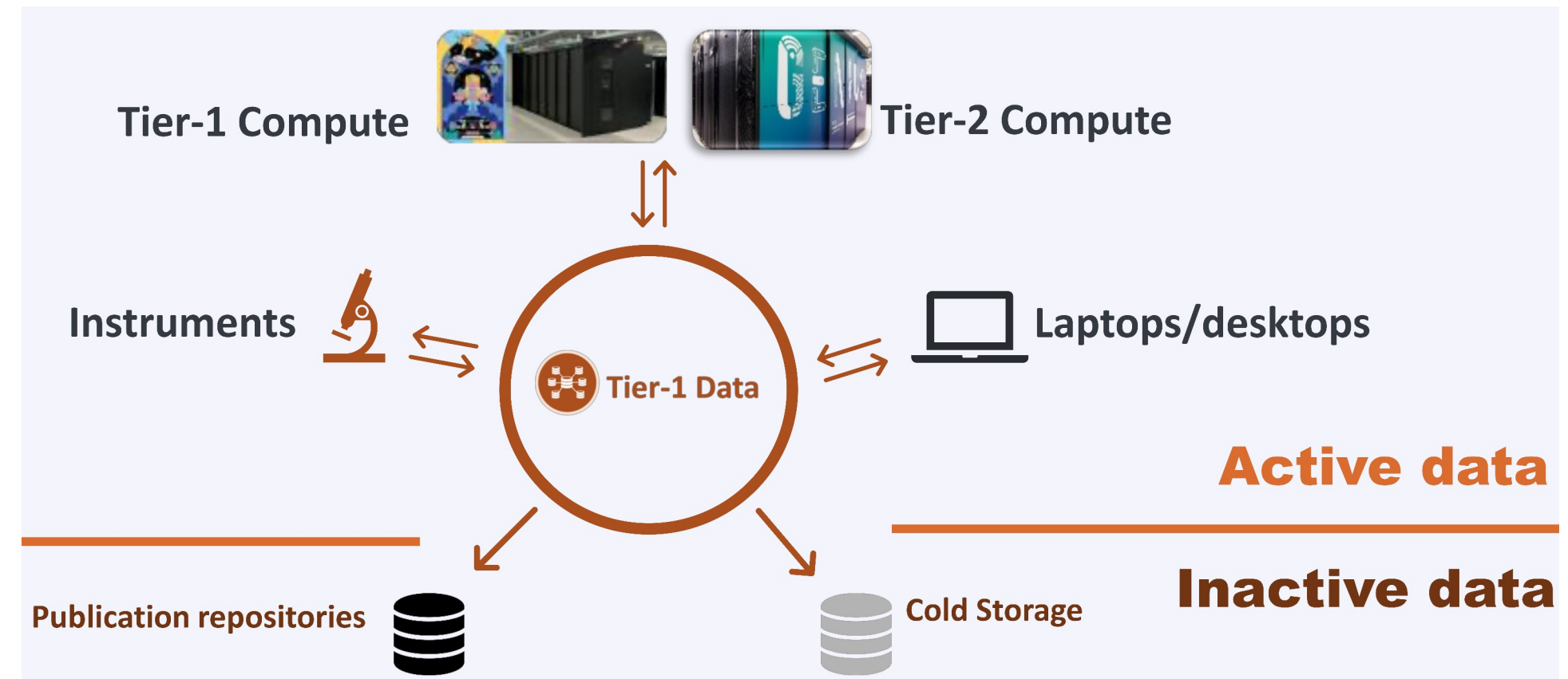
TIER1 DATA

Storage management platform
Active (HPC) research data
Metadata, automation, sharing

Project based access

- Starting grant
 - 8 months
- Project (no cutoffs)
 - 4 years
 - 5 TB – 1 PB

<https://www.vscentrum.be/data>



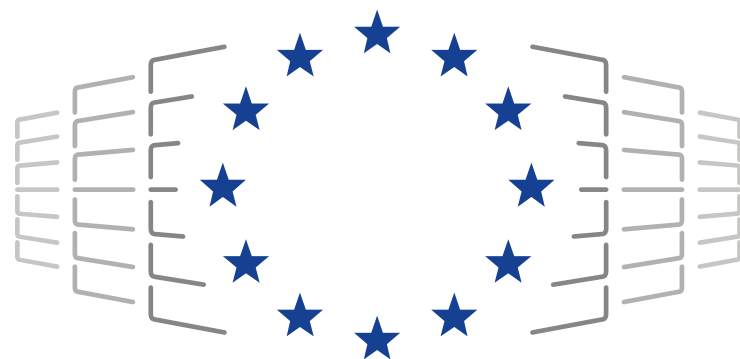
VSC TIER0 SUPPORT

VSC encourages Tier1 users to also move to Tier0

Support in preparing for PRACE, LUMI, EuroHPC, ... resources calls

lumi-be-support@enccb.be

<https://www.enccb.be/GettingAccess>



EuroHPC
Joint Undertaking



VSC INDUSTRY SUPPORT

VSC encourages Flemish industry to adopt HPC:

- Access to Tier1 at advantageous rates
- Comprehensive range of free training
- Dedicated, free support to users

<https://www.vscentrum.be/vsc4business>



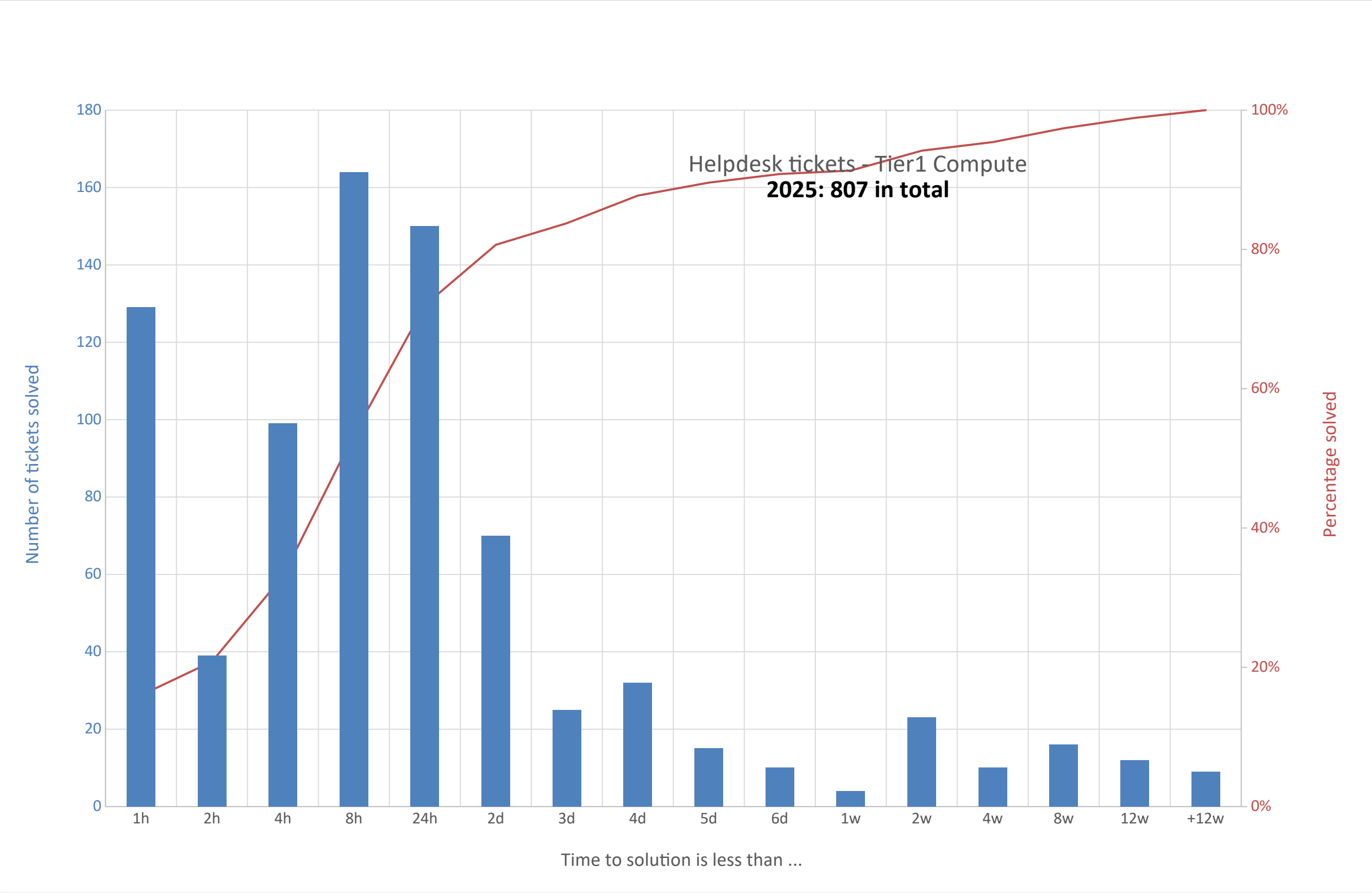
HELPDESK

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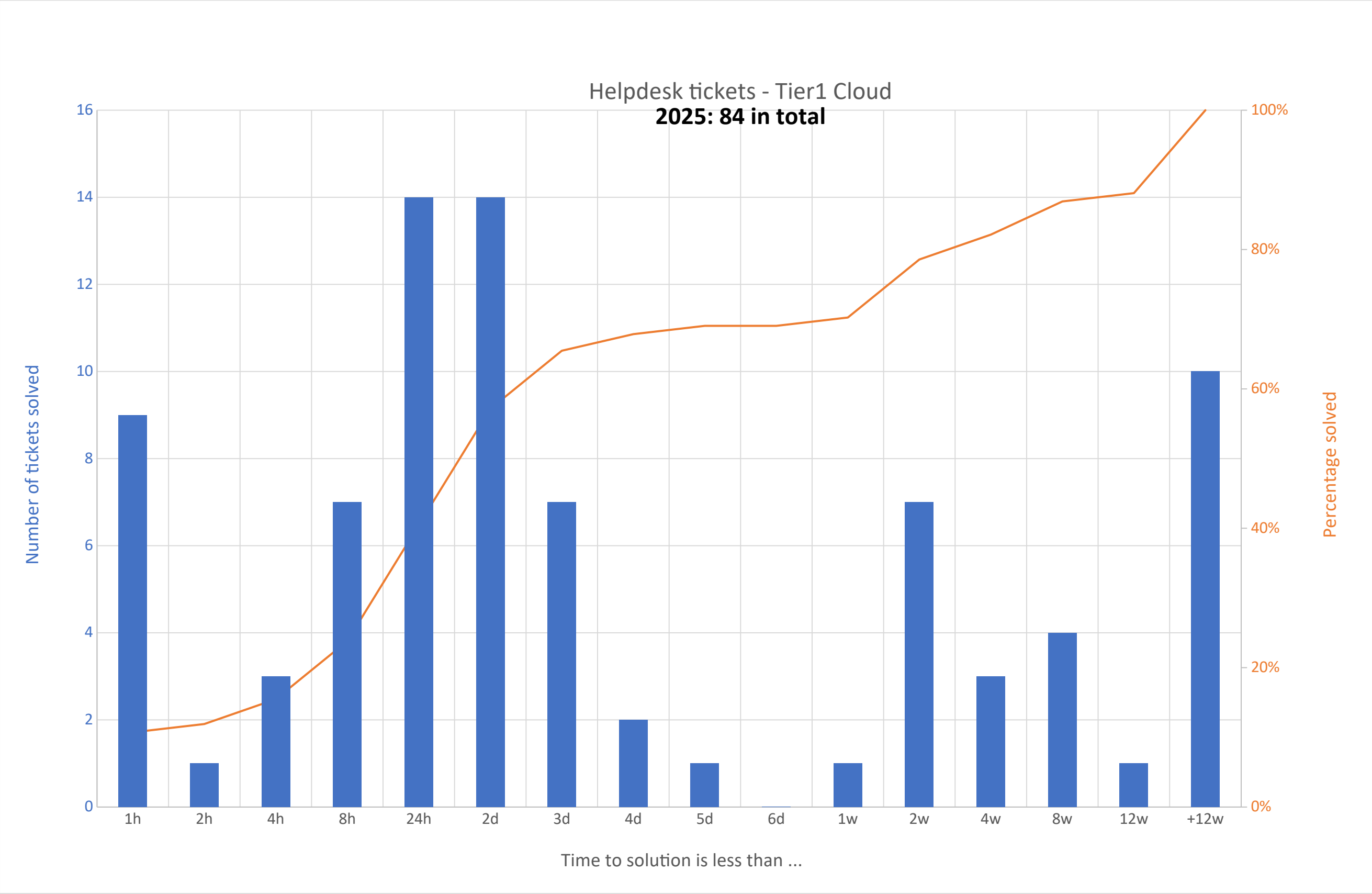
In 2025, we tackled:

- 3.004 tickets related to Tier2 UGent hpc@ugent.be
 - 807 tickets related to Tier1 Compute compute@vscentrum.be
 - 84 tickets related to Tier1 Cloud cloud@vscentrum.be
 - 267 software installation requests (Tier1+Tier2)
-
- 599 active Tier1 Compute projects
 - 33 active Tier1 Cloud projects

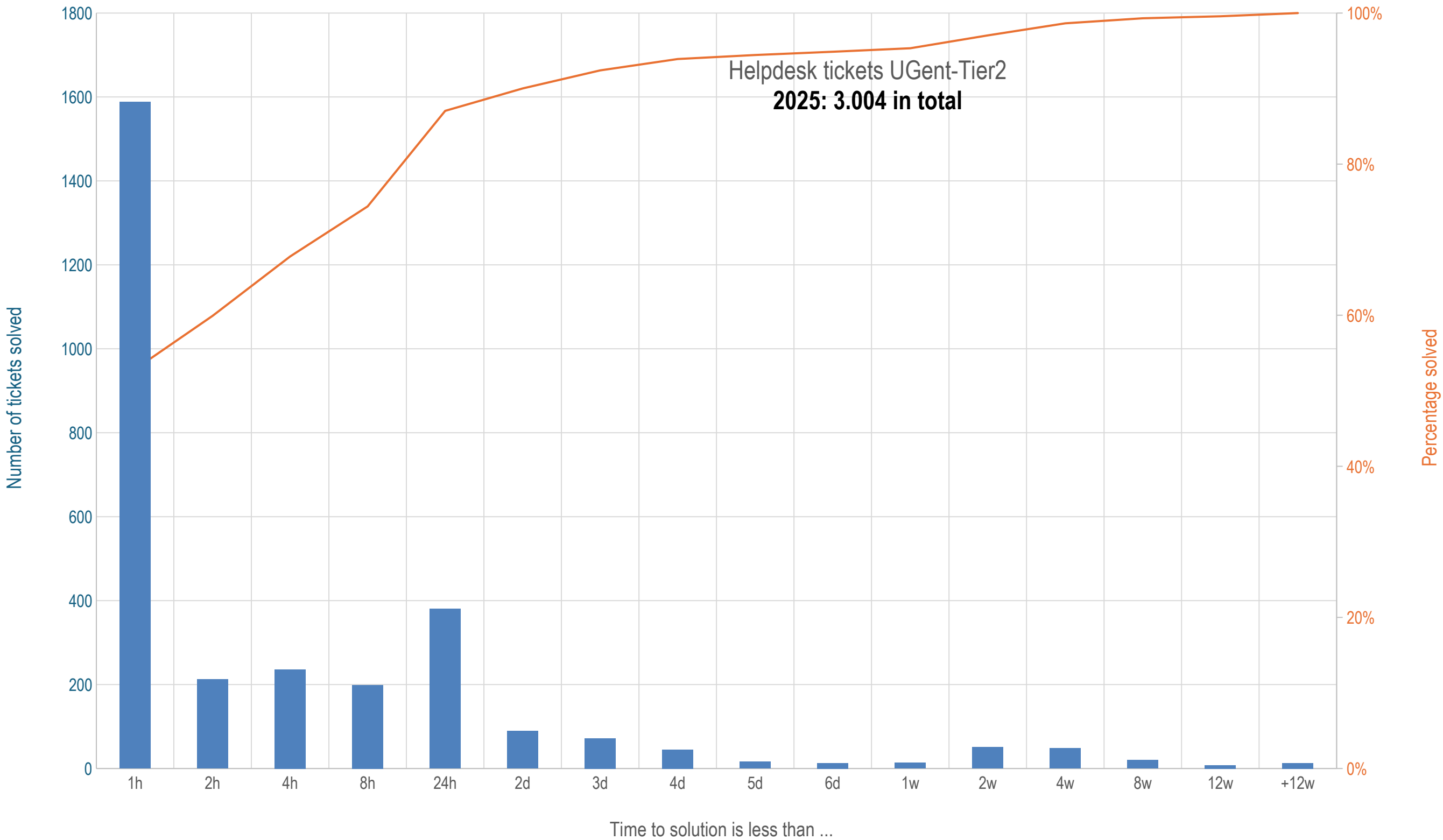
HELPDESK



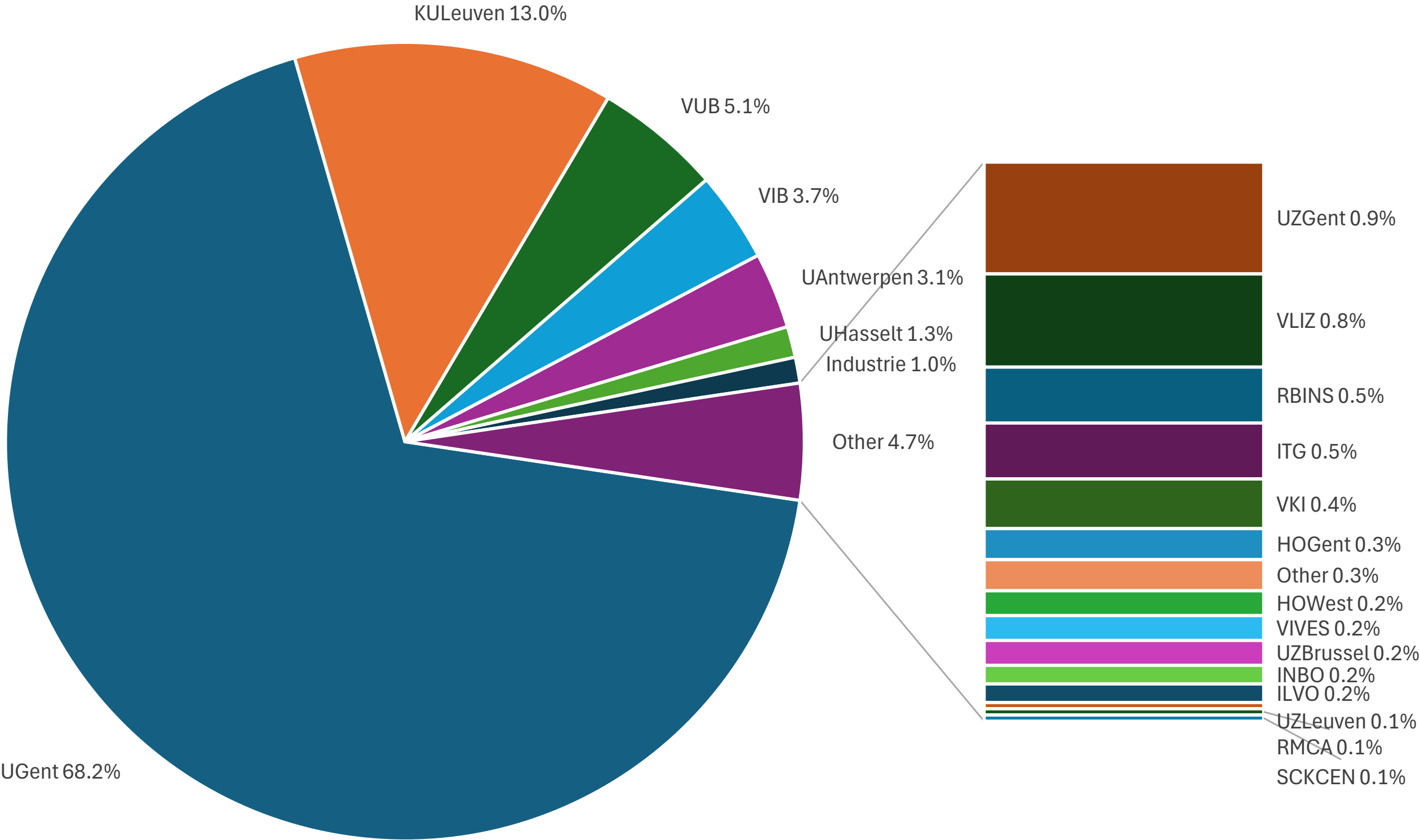
HELPDESK



HELPDESK



UGent-Tier2 support questions by institute of requestor



HELPDESK - SOFTWARE INSTALLATION

Feedback every year: improve speed of software installations

In 2025:

- In-depth analysis of installations performed
- Cost reporting to requestor

“This installation took about <> hours of effort, which is roughly equivalent to <> Euro of institutional cost.”

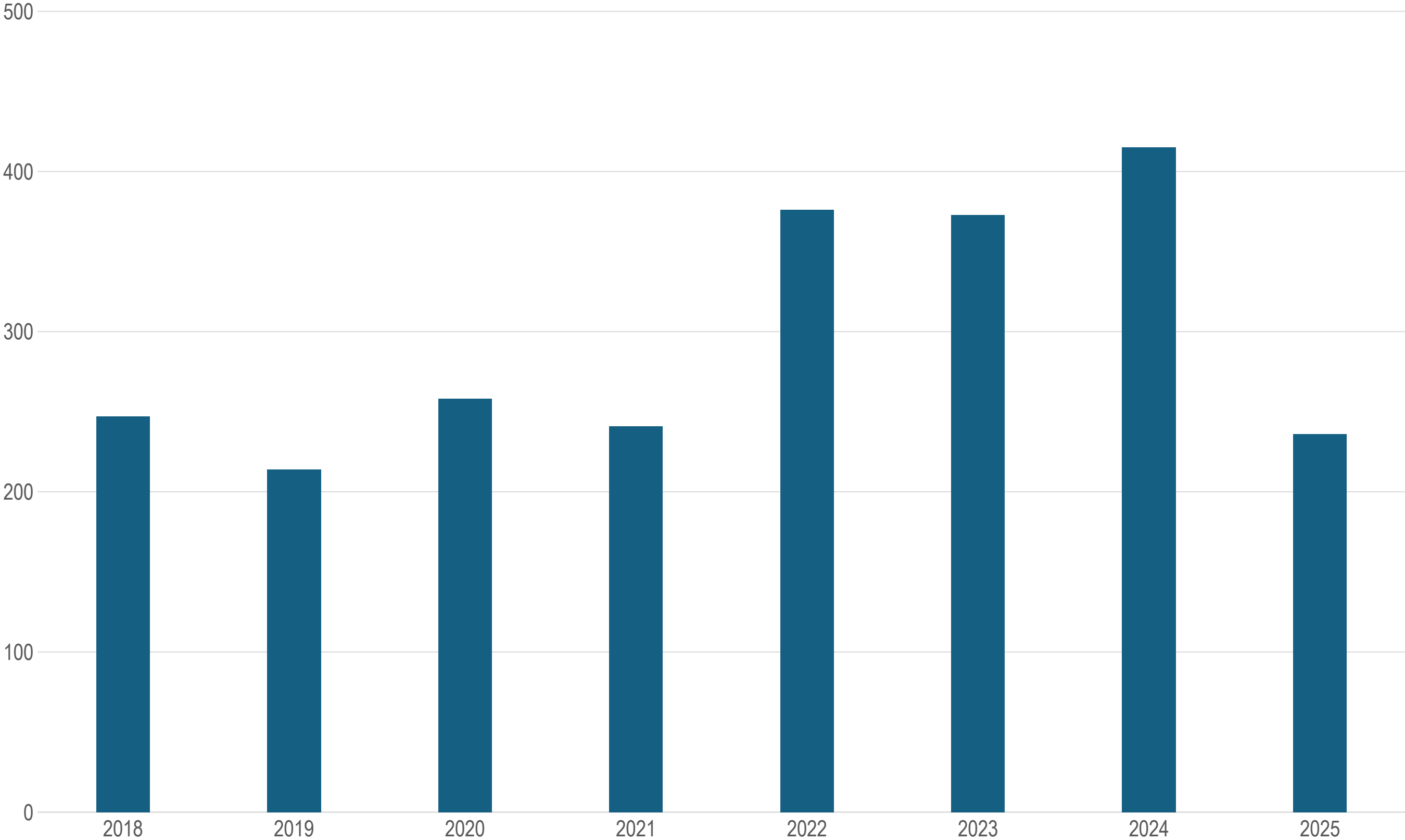
- Requesting software usage report

“By submitting a software installation request, you are committing to sending back a software usage report.”

https://docs.hpc.ugent.be/software_installation_requests

HELPDESK - SOFTWARE INSTALLATION

Software installation requests for HPC-UGent systems (Tier-2 + Tier-1)

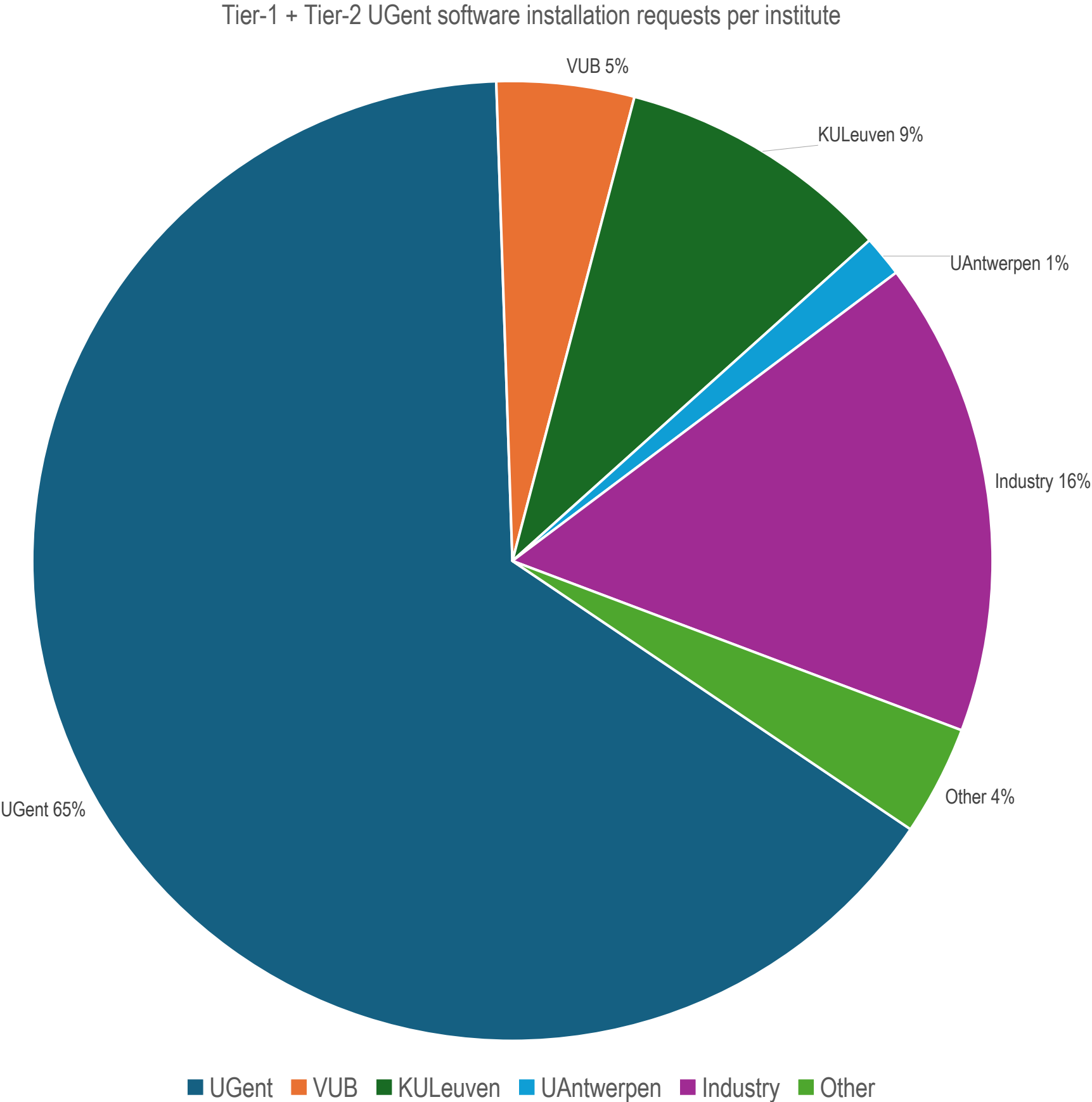


HELPDESK - SOFTWARE INSTALLATION

Software installations in 2025		
Target system	#completed	Share
Tier-2 UGent	197	74%
Tier-1 academic usage	26	16%
Tier-1 industrial usage	44	10%
Total	267	

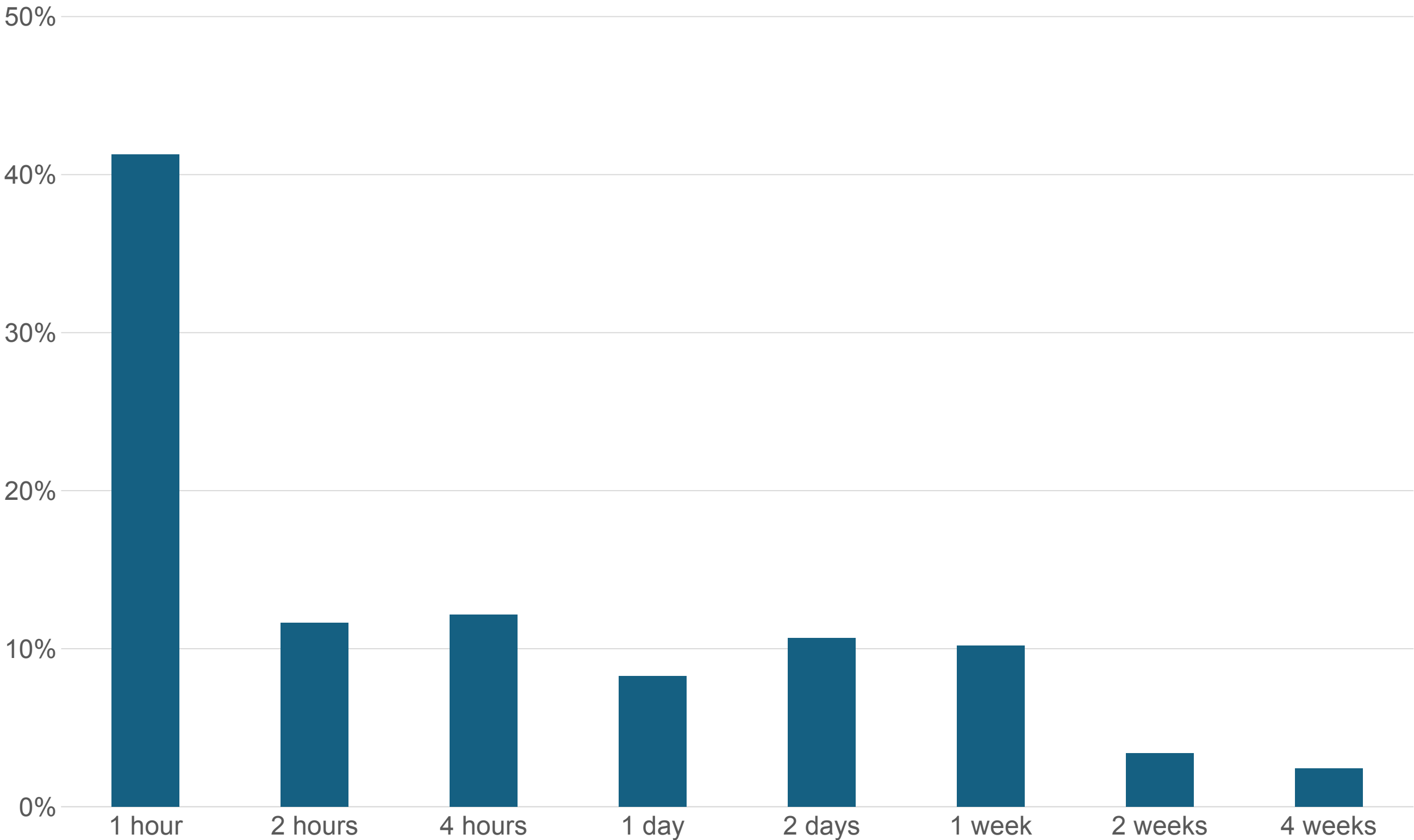
GPU-only software	CPU-only software
23%	77%
~1 dependency / package	~7 dependencies / package

HELPDESK - SOFTWARE INSTALLATION



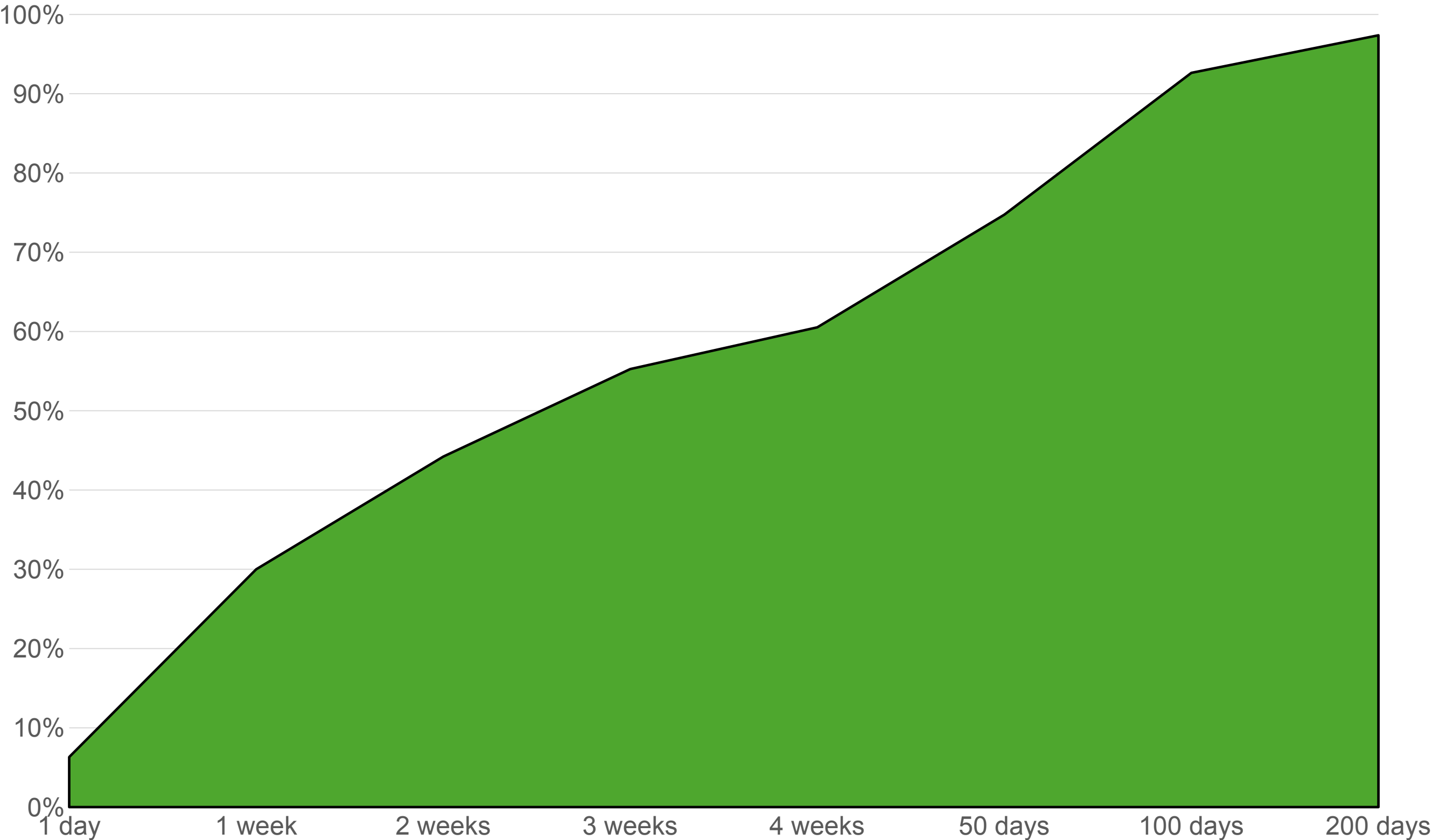
HELPDESK - SOFTWARE INSTALLATION

Effort required to complete software installation request



HELPDESK - SOFTWARE INSTALLATION

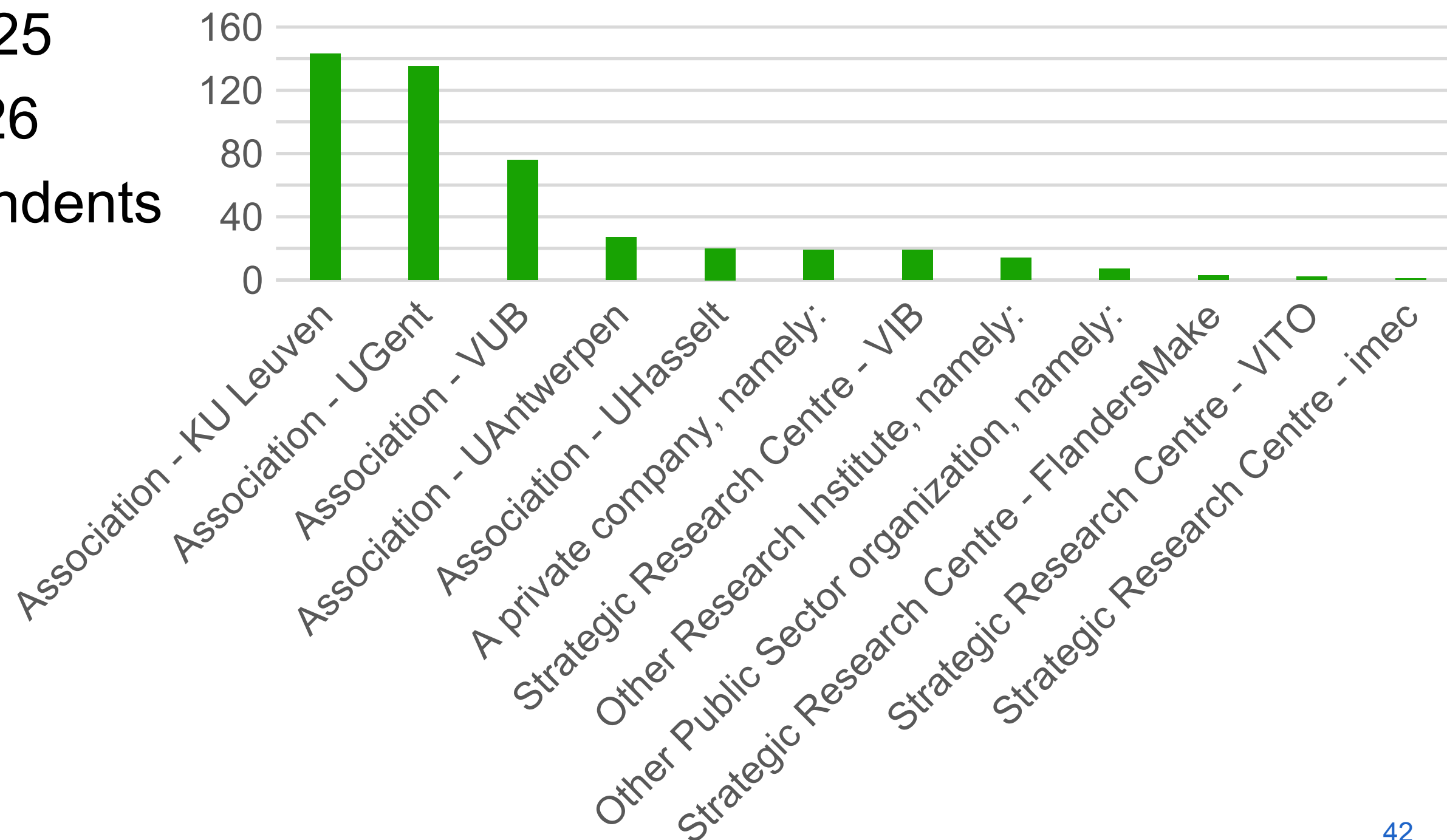
Waiting time between request & installation



USER POLL RESULTS

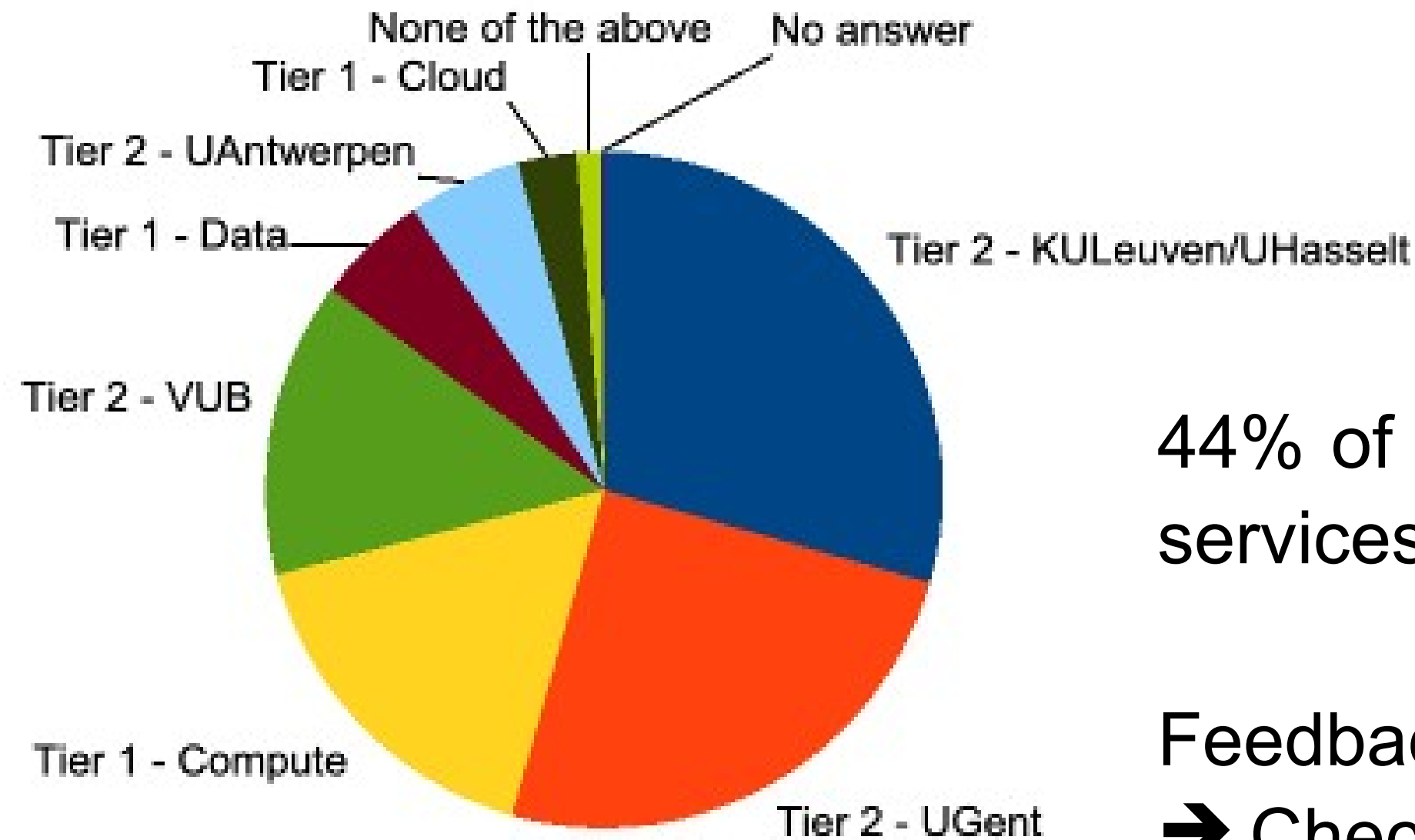
USER POLL RESULTS

- As part of broader VSC poll
- Done yearly
- Sent out 8 Dec 2025
- Closed 15 Jan 2026
- In total: 562 respondents



USER POLL RESULTS

Which VSC services are you using?



44% of VSC respondents indicate using services managed by HPC-UGent

Feedback on Tier1 services

➔ Check out VSC year report

Focusing on UGent Tier2 feedback

USER POLL RESULTS

Reports service as good/excellent:

85% - Quality

83% - Response time

81% - Correspondence to expectations

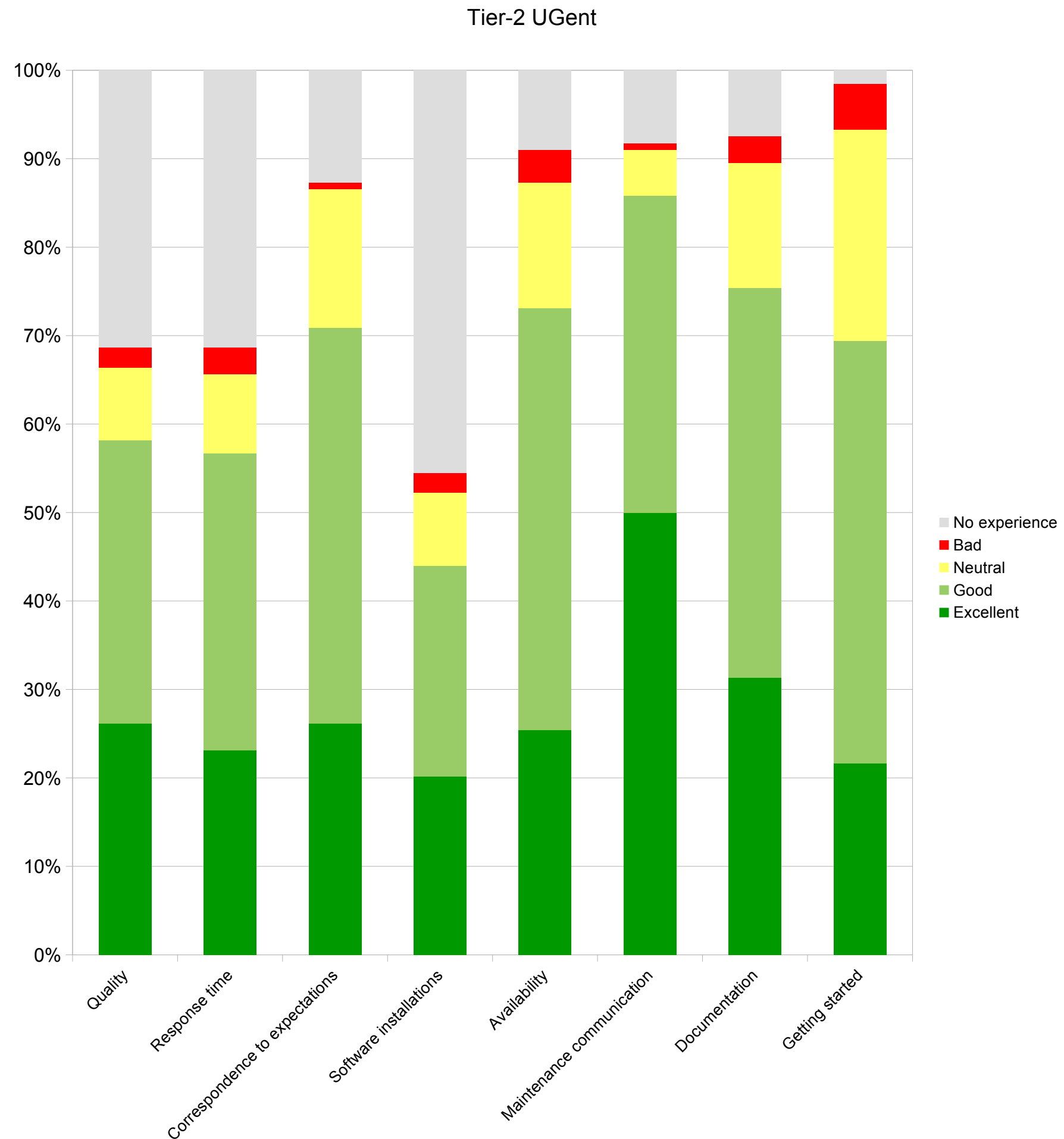
81% - Software installations

80% - Availability

94% - Maintenance communication

81% - Documentation

70% - Getting started



USER POLL RESULTS

Suggestions to improve HPC-UGent services?

Infrastructure

- More CPUs and GPUs, to reduce wait times (4)
- More memory per core (2)

Documentation

- More application-specific documentation (2)
- Update existing documentation (1)

Software

- Specific scientific software training (1)

USER POLL RESULTS

Suggestions to improve HPC-UGent services?

Software

- Faster response time for software installation requests (2)
- Possibility to (self) install software in a virtual environment (1)

Data

- Dedicated platform for sharing and analysing sensitive data (2)
- Shared central model directory for LLMs (1)
- Higher standard storage quota (1)

USER POLL RESULTS

Suggestions to improve HPC-UGent services?

User experience

- Faster response to helpdesk questions (3)
- Higher max walltime, a.o. for AI workflows (2)
- Increased stability of interactive sessions (1)
- More intuitive/user-friendly Whisper AI interface (1)
- Support for Windows or sudo environment (1)

OUTLOOK

OUTLOOK

- New CPU cluster *skiddo* – production by June 2026
- Cluster *doduo* will be reduced in size
- Simplification of user documentation
- Tier-2 HPC storage refresh
 - Beyond the VO concept
 - More attention to storage lifecycle management
 - User policies
- NIS2 security guidelines and policies

QUESTIONS ?
FEEDBACK ?
COMMENTS ?