Upcoming Billing unit changes

User support coffee 11.06.2025

Today

I.   Background and motivation

II. What is changing

III. When and how

IV. Effects on end users

V.   Summary

Much has changed at CSC

- 2015: 1 300 projects, 5 000 users

- 2024: 4 500 projects, 12 000 users

- The amount and variety of services CSC offers have grown considerably
  - Current model from 1993 when services were much more limited

- Capacities and target usage levels vary vastly between services

- Total consumption ~2,4 Bn.BUs per year

- Current model is very HPC-focused and does not allow for flexibility in allocations when one service has capacity limitations

Billing unit using services (usage 2024):
  - **Mahti** (~1150 Mio.BU)
  - **Puhti** (~650 Mio.BU)
  - **ePouta** (~300 Mio.BU)
  - **cPouta** (~220 Mio.BU)
  - **Shared fileservice** (~100 Mio.BU)
  - **Allas** (~75 Mio. BU)
  - **Rahti** (~27 Mio.BU)
  - **SD Desktop** (~10 Mio.BU)
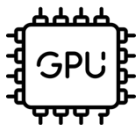 - **Pukki** (~2 Mio.BU)
  - **SD Connect** (~2 Mio.BU)

The new BU model

- Four new Billing unit types, based on type of usage

- Resource applications and accounting in the future are done with these

- Old Billing units will be migrated to new units – nothing is lost

HPC CPU BU
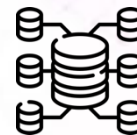Puhti, Mahti, Roihu
jobs *without* GPU

HPC GPU BU
Puhti, Mahti, Roihu
jobs *with* GPU

Cloud BU
Pouta, Rahti, Pukki,
SD Desktop

Storage BU
Lustre, Allas, Shared
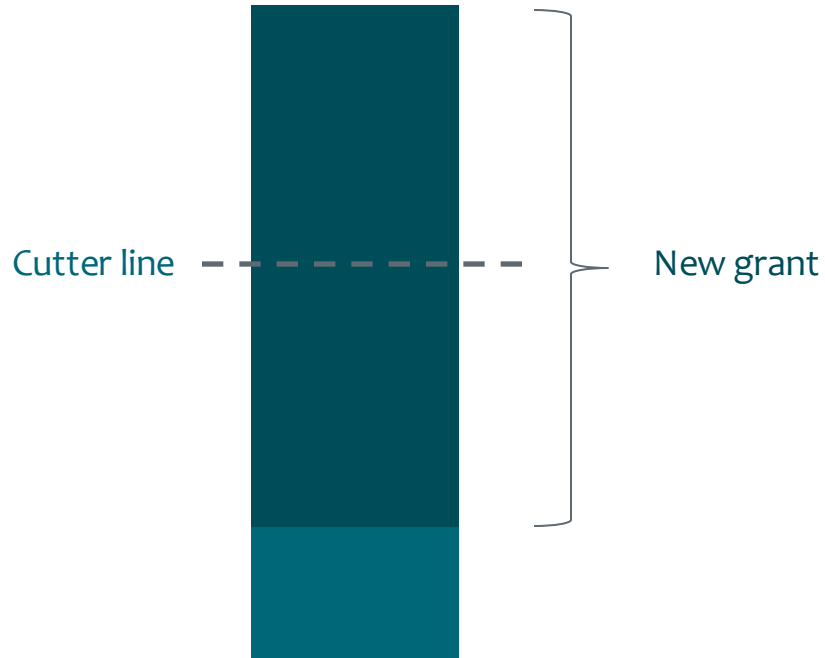Fileservice, SD Connect

!Think LUMI, but with cloud

New: Billing unit cutter

- To encourage use of Billing units, academic projects' Billing units will be cut periodically if they are not used
  - o Excludes Grand challenge and student projects

- Projects currently have enough outstanding Billing units to cover use of all CSC's for around 1,5 years

- We want to encourage projects to start using Billing units as soon as possible after the grant and reach out to us if they have problems
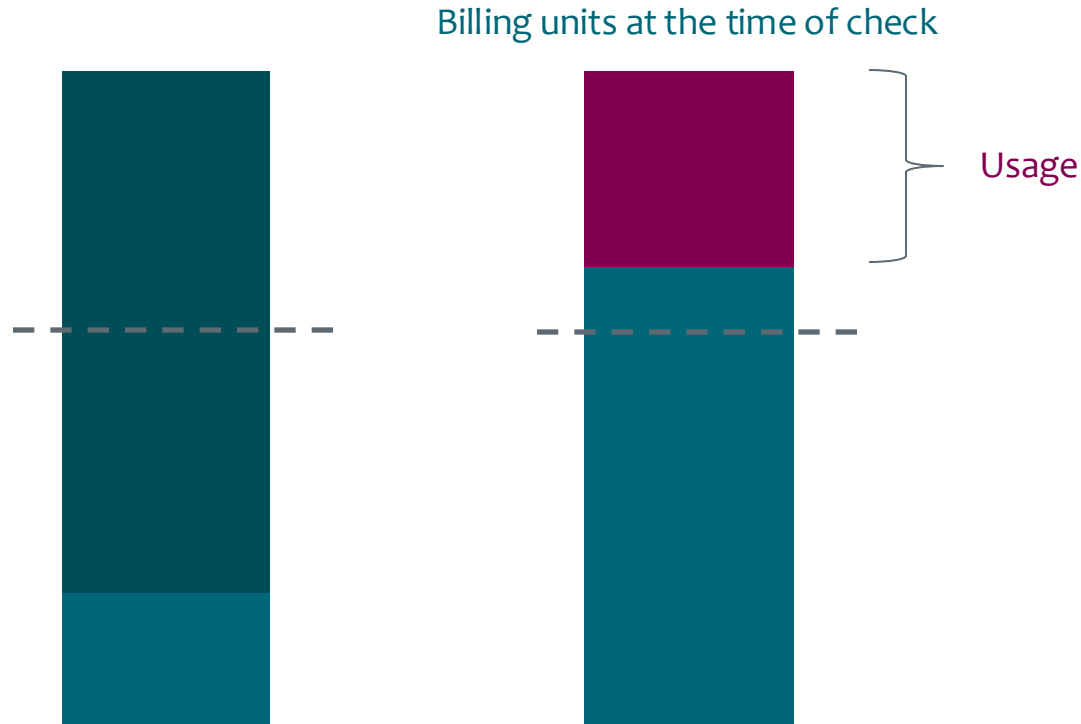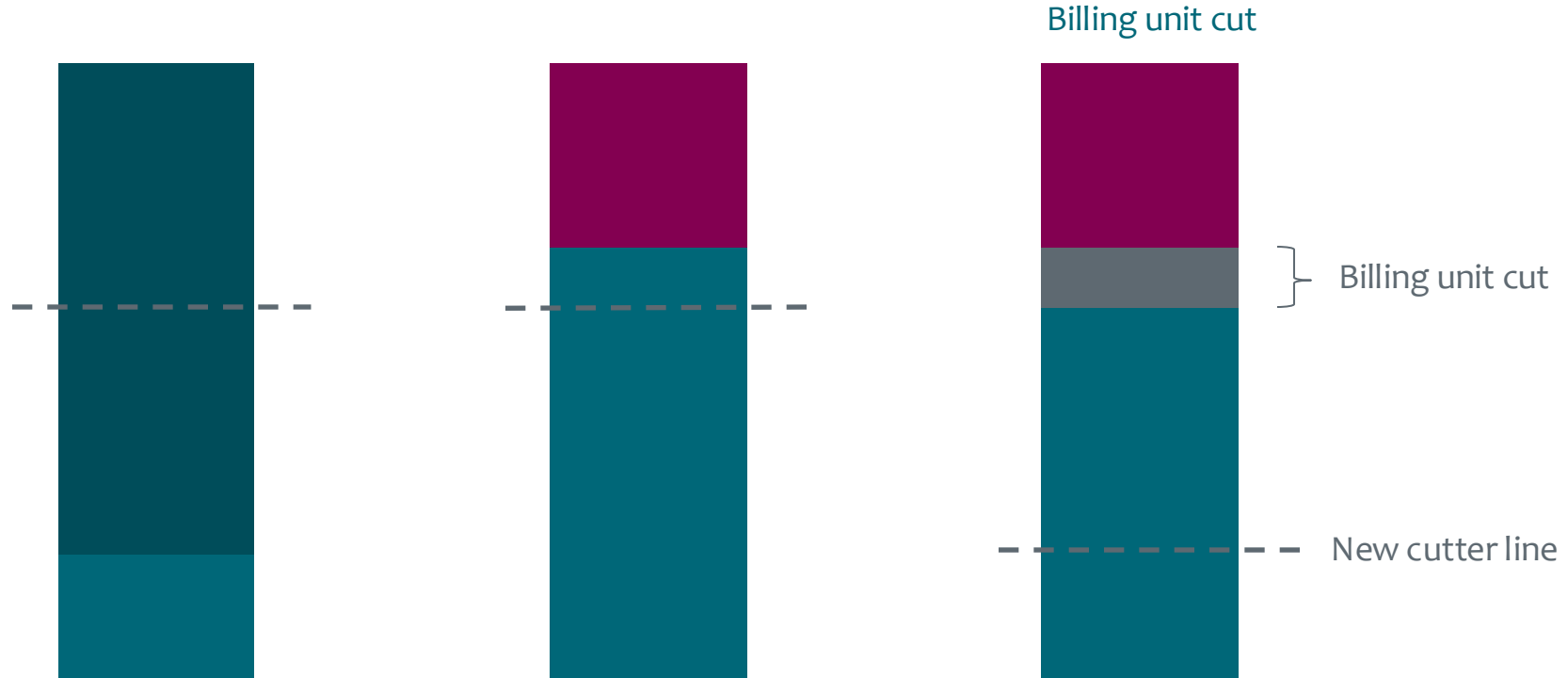
Example

New Billing unit grant

Cutter line – – – – – – – – – – New grant

When a project is granted Billing units, a new date and limit for the cutter is added

Example

Billing units at the time of check

Usage

At the date of the next check, the usage and remaining Billing units are checked

Example

Billing unit cut

Billing unit cut

New cutter line

And if the project hasn't used enough Billing units, they are cut accordingly
After this, the date and cutter limits for the project are updated

When and how are these changes happening

- All of this is happening in **September 2025**
  - The exact date will be announced in August

- Units will be taken into use everywhere at once with no transition period

- On the migration day, old Billing units will be converted to new ones based on the past usage of the project

- The plan is to minimize impact on service availability and usage
  - Resource applications will be unavailable during the migration process

How does this affect me

- In the future resource applications and accounting are done in new units – users have to consider what services they want to use before applying for resources
  - Renewed billing unit calculator and closer integration of calculator and resource application aids in this

- Billing units deprecate if unused – new model encourages to either use Billing units as soon as they are granted or to reach out in case of problems

- The package sizes for resource applications will also change, based on how much capacity is behind each BU type

What to remember from this

1. Billing units will be split into 4: HPC CPU, HPC GPU, Cloud, and Storage. Everything will happen in these billing units.

2. Billing unit cutter will be taken into use. Billing units will be periodically cut if projects don't use them.

3. All of this will happen in September this year.

For more information

https://research.csc.fi/2025/03/20/billing
-unit-renewal/
https://research.csc.fi/2025/06/02/billing
-unit-renewal-schedule-and-changes/

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