

NERSC Operational Metrics Report



Steve Leak
User Engagement Group
Aug 17, 2020

Operational Metrics

Why

The **mission** of the National Energy Research Scientific Computing Center (NERSC) is to **accelerate scientific discovery** at the DOE Office of Science through high performance computing and data analysis

How

NERSC is committed to providing **highly usable HPC resources** for its users

Specific, Measurable Goals

High **scheduled availability, utilization, compute-hours** delivered

Effective **user support**

Responsiveness to **user feedback**

High Scheduled Availability

Why

The **mission** of the National Energy Research Scientific Computing Center (NERSC) is to **accelerate scientific discovery** at the DOE Office of Science through high performance computing and data analysis

How

NERSC is committed to providing **highly usable HPC resources** for its users

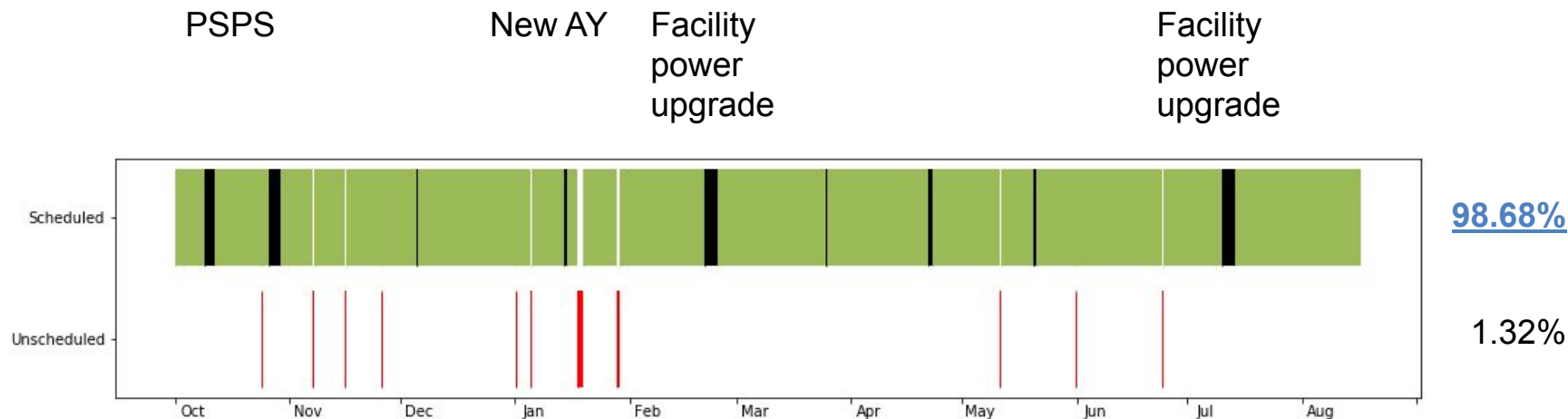
Specific, Measurable Goals

High scheduled availability, utilization, compute-hours delivered

Effective **user support**

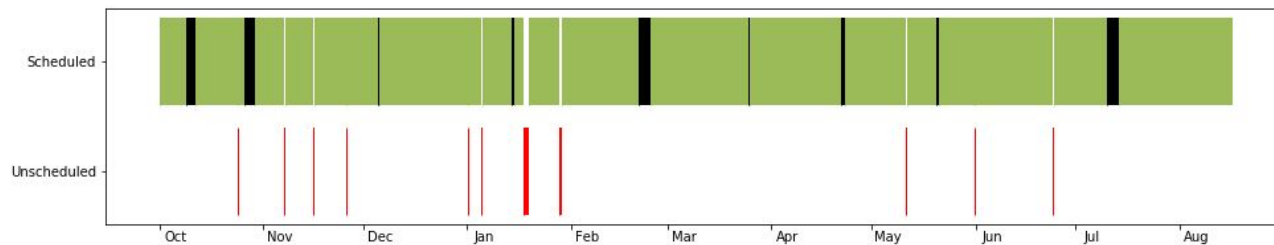
Responsiveness to **user feedback**

Scheduled Availability

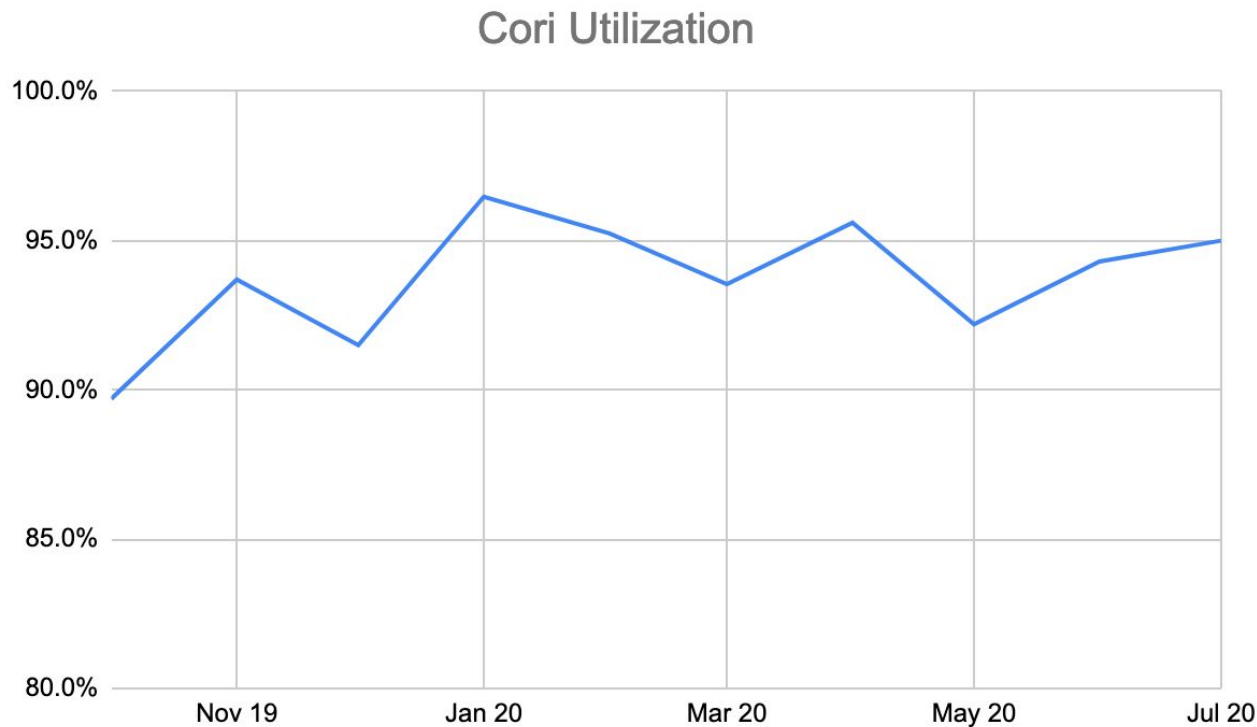


Scheduled Availability and MTTI

	Scheduled Availability	MTTI
Cori	98.68%	13.5 days
CFS	100%	99.6 days
Archive	99.95%	29.4 days

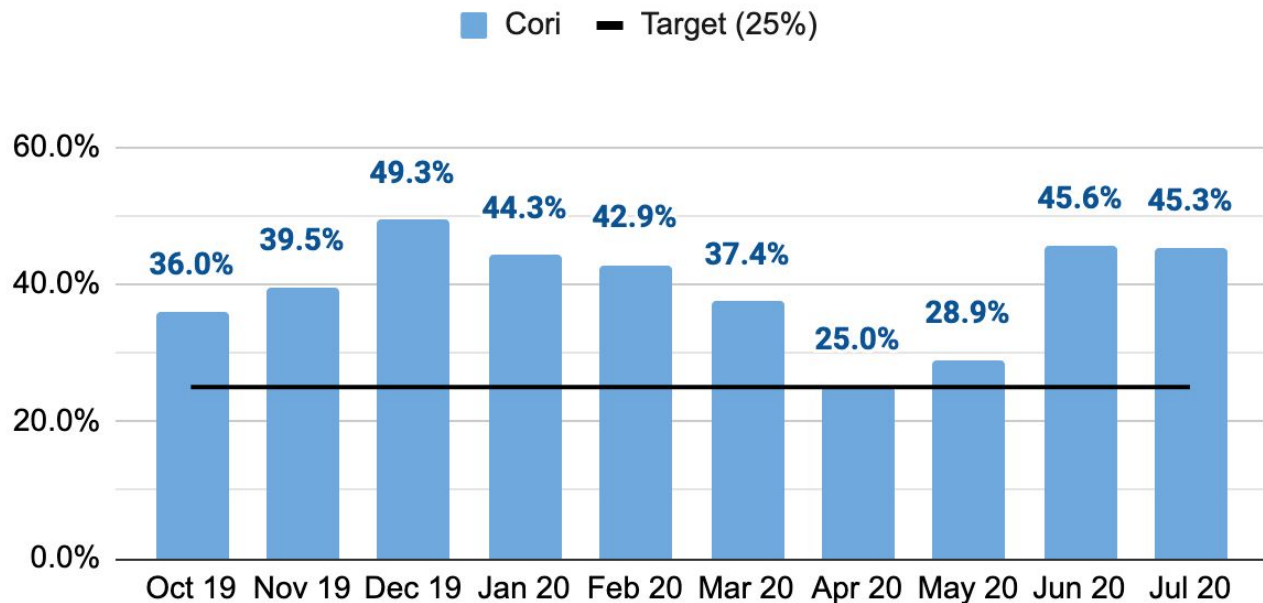


Utilization has been high



Capability workload above target

Cori KNL Capability Metric: % Hours by Jobs \geq 1,024 nodes



Compute-Hours Delivered ahead of target



Projects ▾ Reports ▾ Tools ▾

Search users, projects



leak ▾

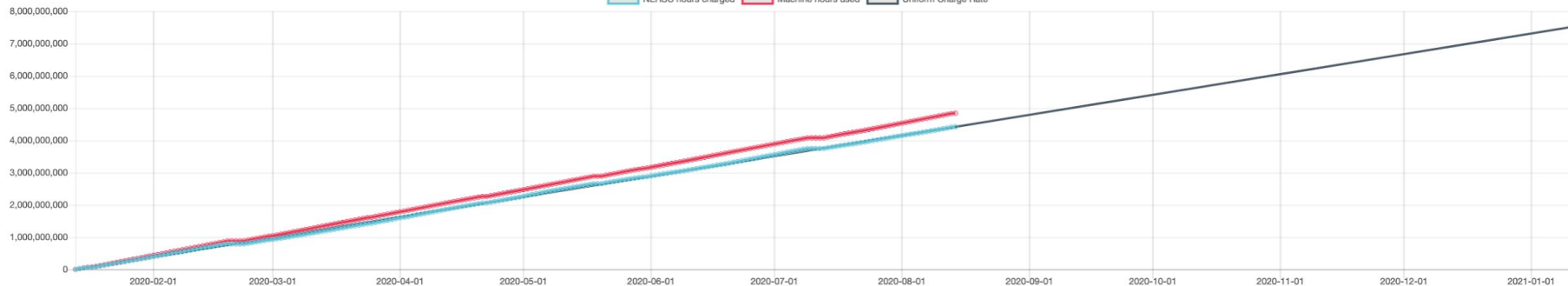
Repo Name

Enter the project's name

Current Allocation Year

Graph!

NERSC hours charged Machine hours used Uniform Charge Rate



Click and drag in the chart to zoom in. [Reset zoom.](#)

[NERSC](https://www.nersc.gov) <https://www.nersc.gov>

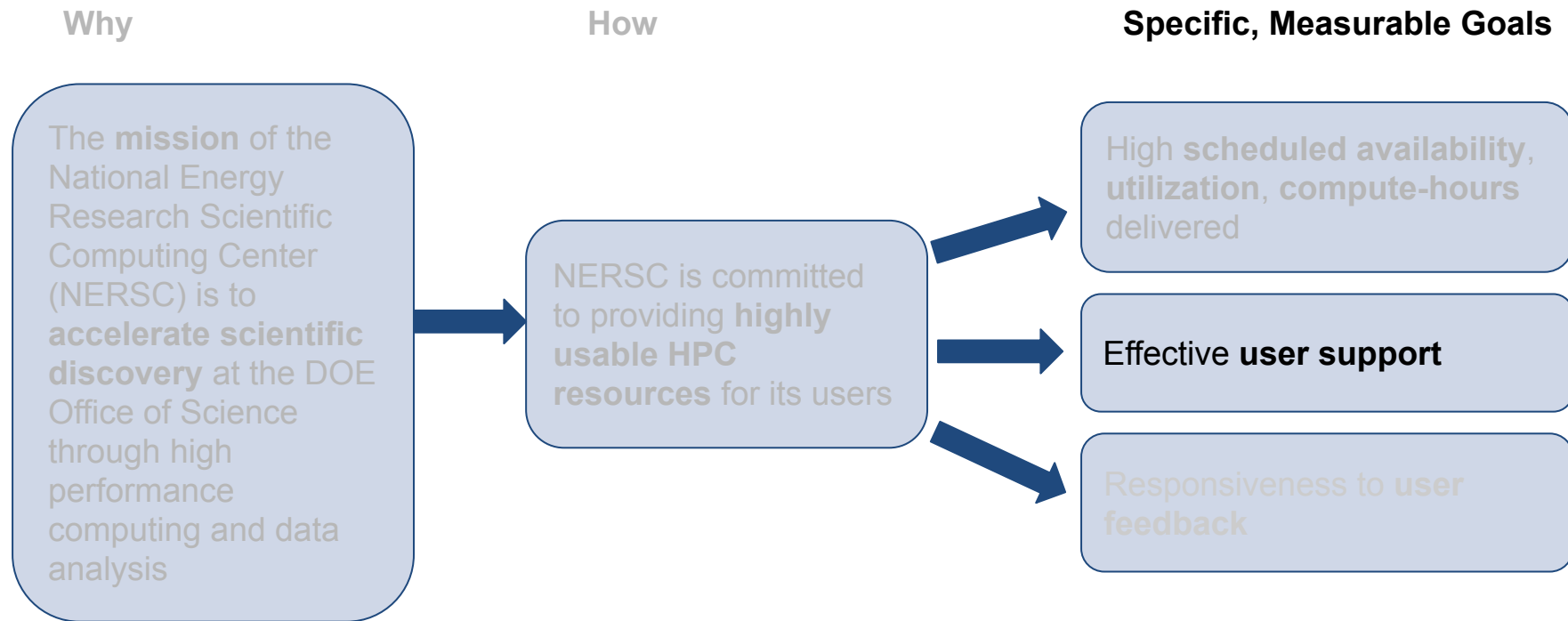
NERSC requires using Multi-Factor Authentication (MFA) to increase your account security. [Read instructions here.](#)

NERSC Account Support: Open a ticket at: <https://help.nersc.gov/> or email accounts@nersc.gov

NERSC Consultants: Open a ticket at: <https://help.nersc.gov/>



Effective User Support

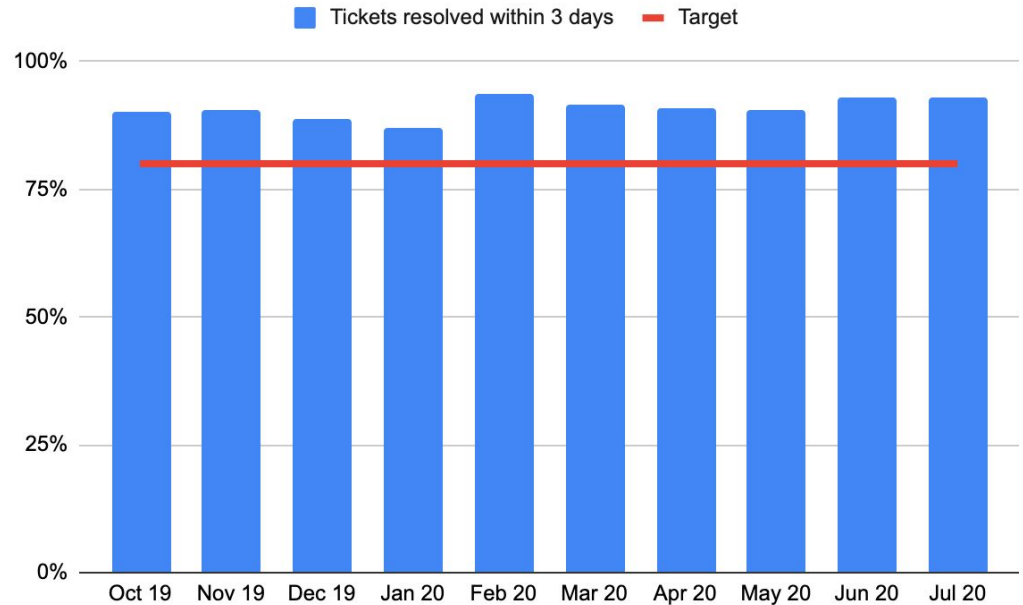


Effective User Support

Key metric: Ticket resolution

Target: 80% of tickets addressed within 3 business days

FY to date: **92.4%**



Effective User Support - Training

Goal: Enable users:

- To use the available resources more effectively
- To help themselves

NERSC holds, hosts and promotes a wide range of training events
30 events this FY so far



Effective User Support - Documentation

Now based on mkddocs

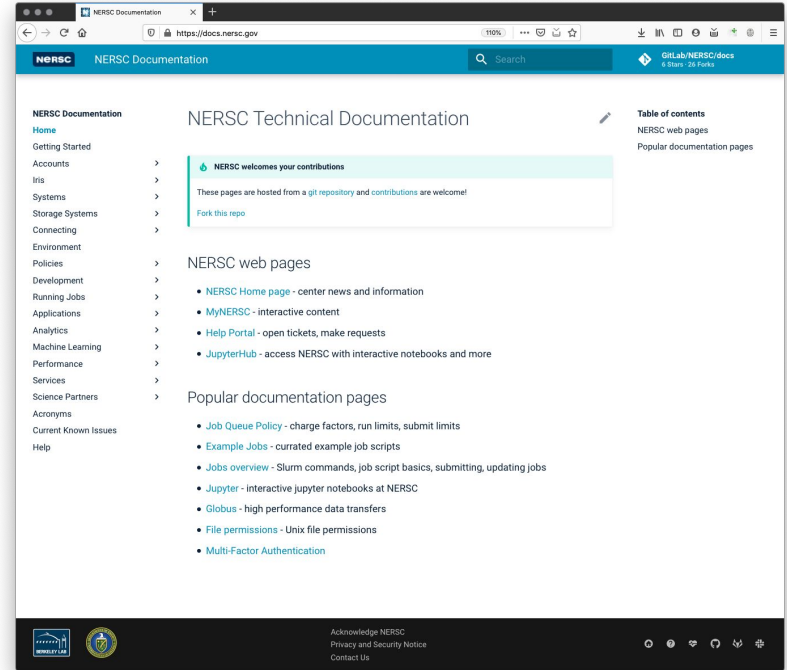
(<https://www.mkdocs.org/>) and
Markdown

Version managed at

<https://gitlab.com/NERSC/nersc.gitlab.io>

Got an improvement? You can file an
issue or a merge request at

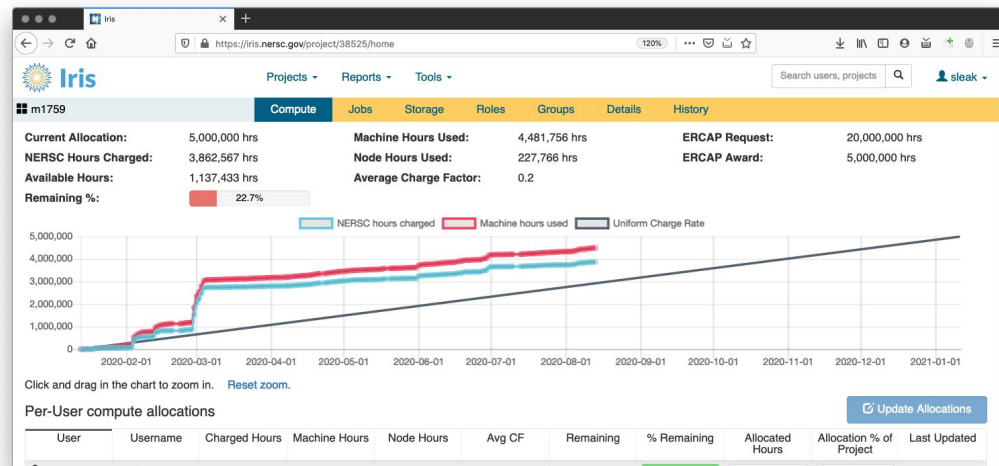
<https://gitlab.com/NERSC/nersc.gitlab.io>



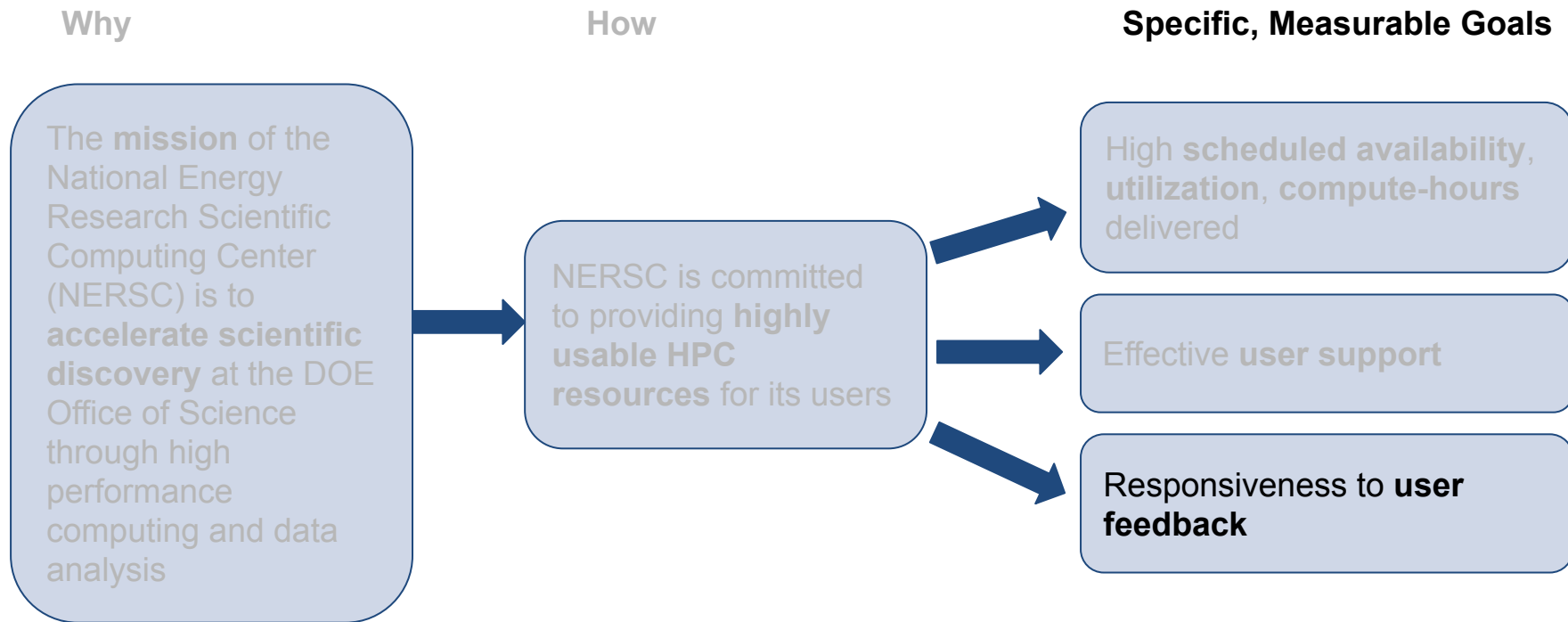
Effective User Support - Account Management

<https://iris.nersc.gov>

Replaced NIM on Dec 1, 2019



Effective User Support



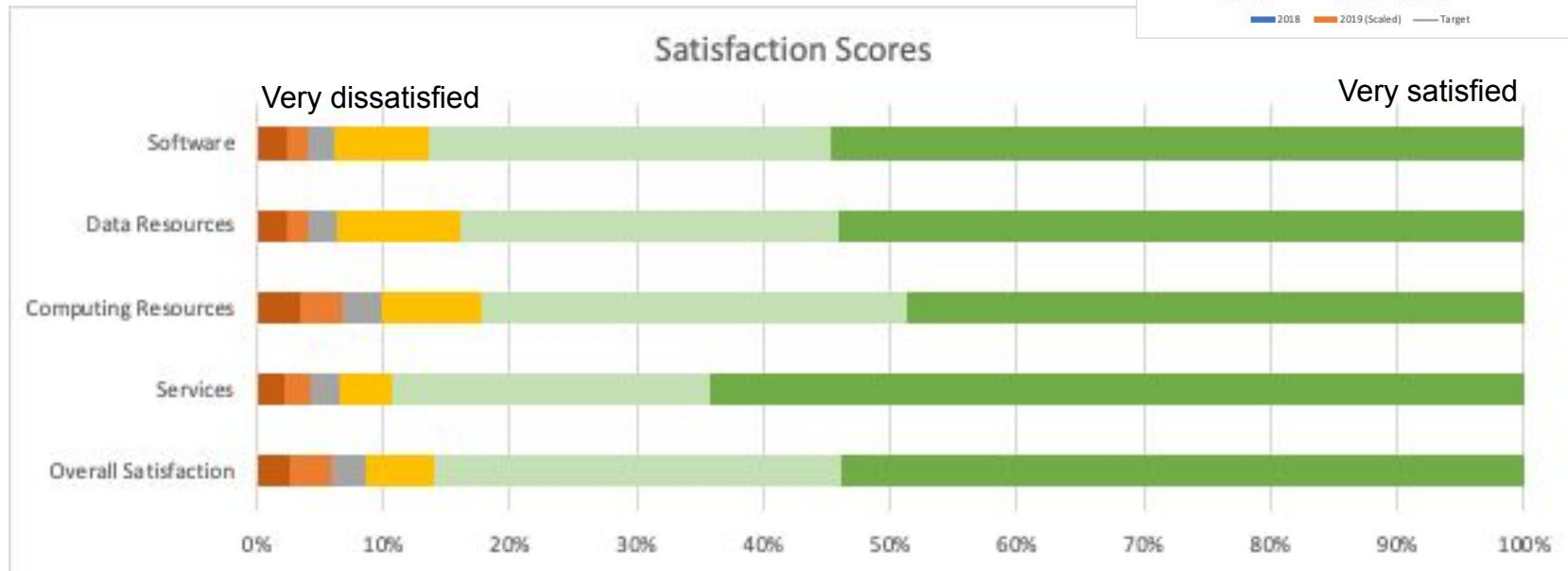
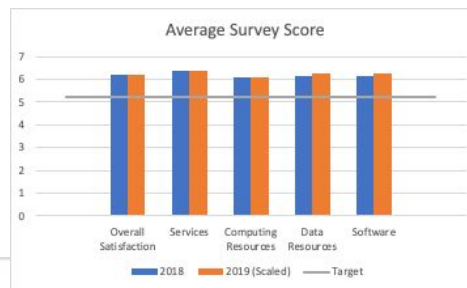
User Feedback

Annual Survey

- Outsourced to NBRI
- Participation targets (**coverage**)
 - 10% of users (**12.1%**)
 - 50% of compute hours (**51.5%**)



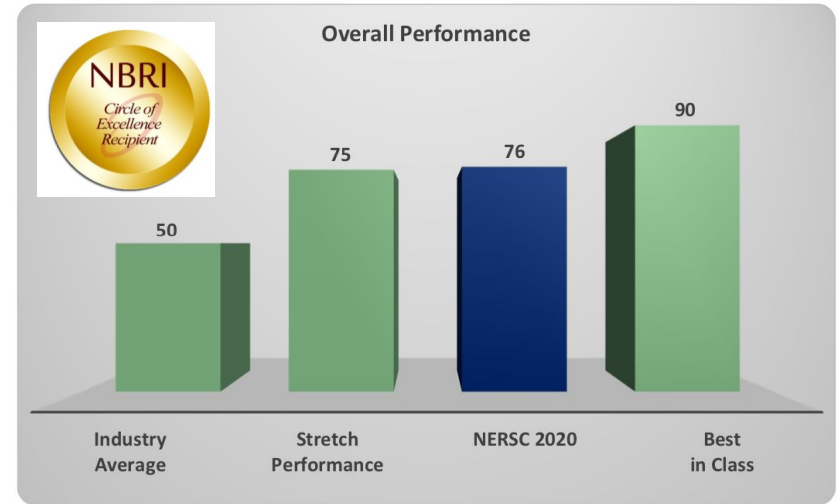
High overall satisfaction



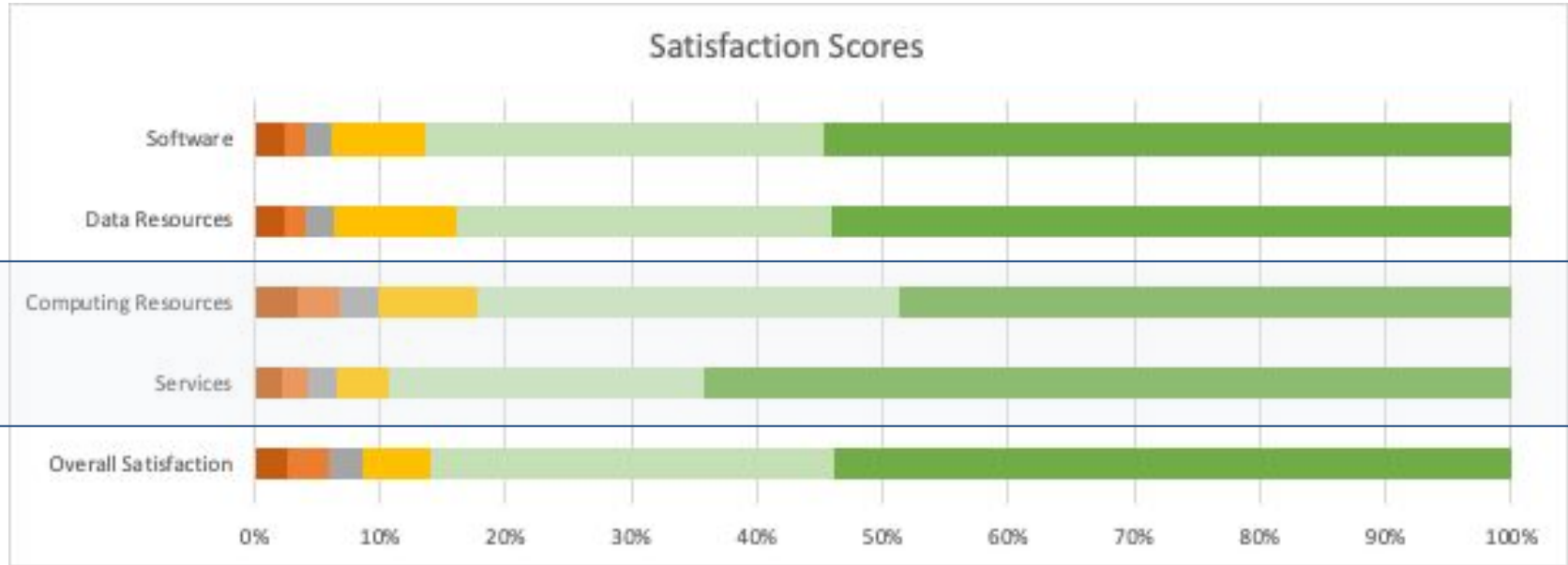
Industry benchmark results

NBRI benchmarked our consulting & user satisfaction results against our peers (based on our NAICS code)

Amongst our peers our average satisfaction rating was **76th percentile**



Root cause analysis



High Impact Themes

What does NERSC do well?	How can NERSC serve you better?
Customer support	Queue times
Consultant response time	Computational time
Computational services	Time limits

Perlmutter coming soon!

Other Noteworthy themes

Documentation - scored as both a strength and a weakness

- Interpretation: Good documentation is **important**
- Please participate! <https://gitlab.com/NERSC/nersc.gitlab.io>

Storage - no longer a widespread pain point

- CFS deployment has alleviated that

Survey Conclusions

Overall survey results indicate positive view of NERSC by its users

Actions:

- Continue to provide high-quality services for users
- Innovate to improve services & make best use of existing resources
- Advocate for more resources

Operational Metrics

Why

The **mission** of the National Energy Research Scientific Computing Center (NERSC) is to **accelerate scientific discovery** at the DOE Office of Science through high performance computing and data analysis

How

NERSC is committed to providing **highly usable HPC resources** for its users

Specific, Measurable Goals

High **scheduled availability, utilization, compute-hours** delivered

Effective **user support**

Responsiveness to **user feedback**

Q&A?

