Microsoft

Building a more sustainable future, together

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Microsoft is committed to harnessing the power of technology to help everyone, everywhere build a more sustainable future.

Datacenters of the future save energy, water, and waste

Liquid immersion cooling, grid-interactive UPS batteries, clean fuels for power backup

Reuse and repurpose servers and hardware through Microsoft Circular Centers

Diverting 90% of solid waste and at least 75% of construction and demolition waste

100% of all datacenter packaging will be **reusable, recyclable, or compostable**

Our Project Natick team is **tested an underwater datacenter in Scotland**

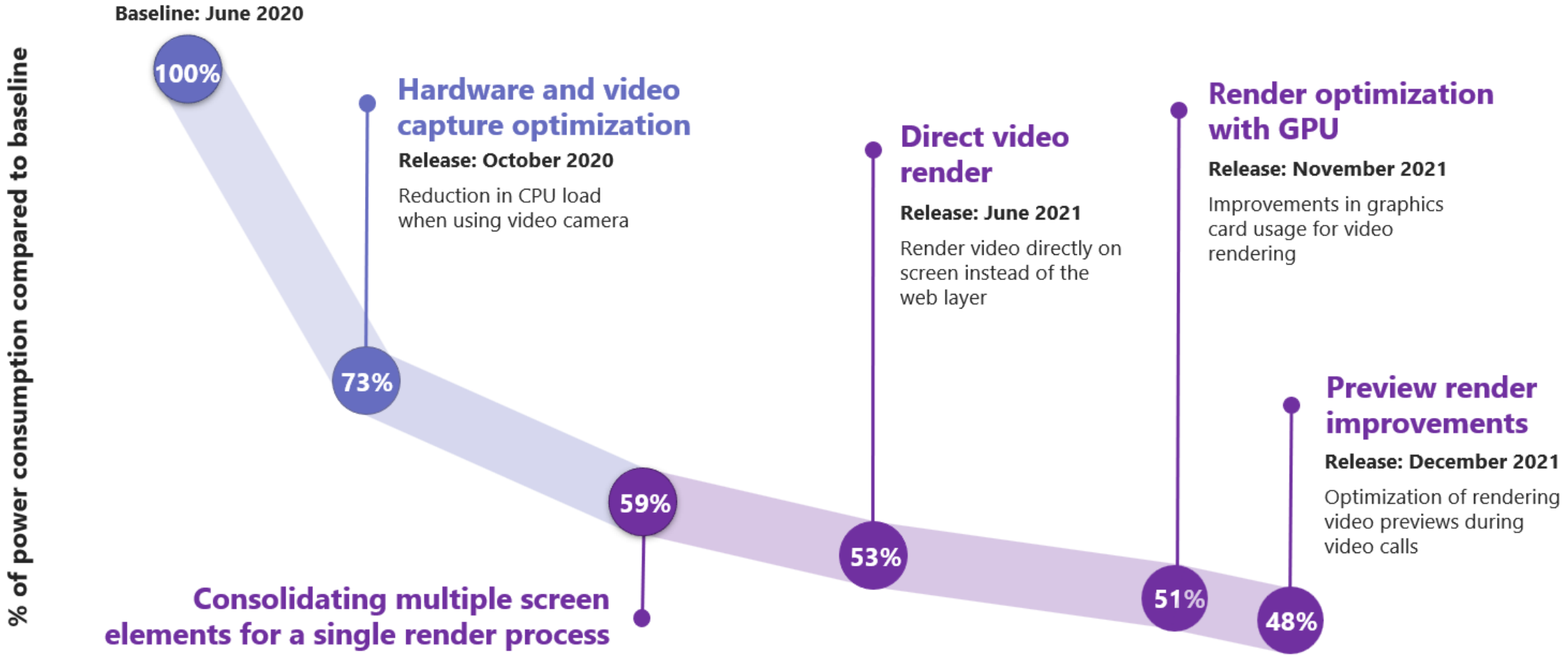
The project uses cold seawater to cool servers **without tapping freshwater resources, and with greater cooling efficiency than air**

Underwater servers failed at one-eighth the rate of a land-based control group, **reducing server waste**

Performance improvements

Ongoing reductions in Microsoft Teams power requirements

Video and screen-sharing scenarios can pose challenges for hardware processing and power consumption. Ongoing optimizations in Teams have **reduced power consumption by half since 2020** enabling improved experiences.



Measurement Conditions:
Video call without screen sharing, 10 participants, Windows PC

Surface Drive Retention

rSSD

Microsoft Ocean Plastic Mouse

The Ocean Plastic Mouse is a small step forward in Microsoft's sustainability journey. The shell of this eco-friendly mouse is made with 20% recycled ocean plastic, a breakthrough in materials technology that begins with the removal of plastic waste from oceans and waterways.

Microsoft Azure Machine Learning Studio

Microsoft > datacachetest > Experiments > Default > busy_boot_hhv1j00c

busy_boot_hhv1j00c

Microsoft

New

datacachetest

Author

Notebooks

Automated ML

Designer

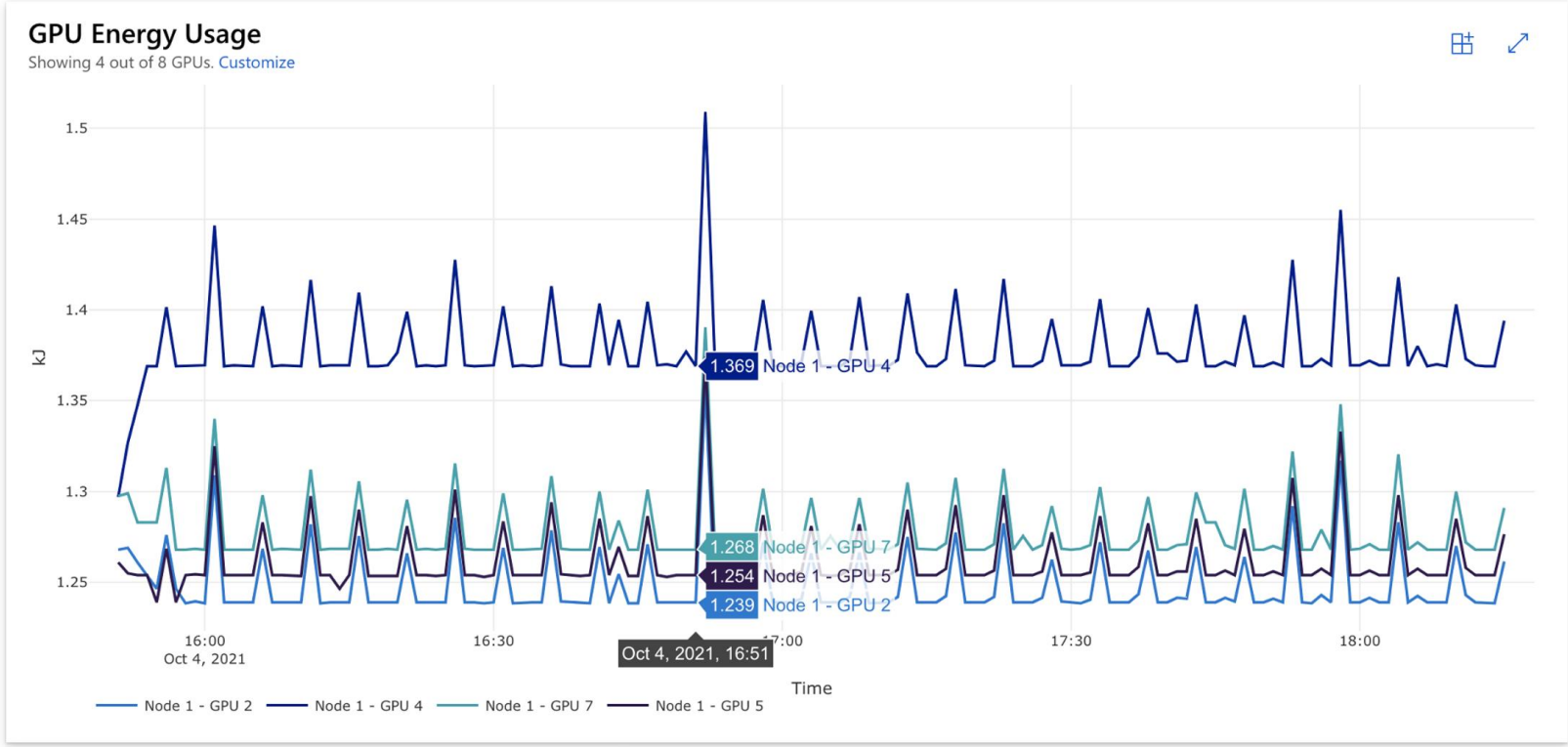
Refresh | Connect to compute | Resubmit | Cancel | Delete | Time range: Entire run

Details | Metrics | Images | Child runs | Outputs + logs | Snapshot | Explanations (preview) | Fairness (preview) | Monitoring (preview)

Average CPU Utilization	Average GPU Utilization	Average GPU Memory Usage	Total GPU Energy Usage
2.5%	12.1%	0.20 GB	4994.92 kJ

Charting a path towards Sustainable AI

Resource metrics



1300 XP

The Principles of Sustainable Software Engineering

33 min • Module • 12 Units

★★★★★ 4.8 (8,349)

Beginner | Developer | Administrator | Solution Architect | Student | DevOps Engineer | Data Scientist | Data Engineer | Database Administrator | AI Edge Engineer | AI Engineer | Technology Manager | Azure | .NET | Microsoft Power Platform

Sustainable Software Engineering is an emerging discipline at the intersection of climate science, software, hardware, electricity markets, and data center design. The Principles of Sustainable Software Engineering are a core set of competencies needed to define, build, and run sustainable software applications.

Learning objectives

In this module, you will:

- Identify the eight principles of Sustainable Software Engineering
- Understand the two philosophies of Sustainable Software Engineering

Start > ⊕ Save

Microsoft

Thank you