

# NEXT-GENERATION CHIP DESIGN IN THE CLOUD

High-performance infrastructure that keeps pace with innovation



**THE GLOBAL CLOUD EDA MARKET IS EXPECTED TO GROW FROM \$5.3B TO \$14.8B AT A CAGR OF 10.7% BY 2033.<sup>1</sup>**

## THE PROBLEM

Semiconductor companies are under intense pressure to accelerate time to market and achieve first-pass tape-out success. The EDA workflow—spanning front-end logic design, back-end place and route, and final tape-out—demands fast, scalable infrastructure capable of supporting massive datasets and global teams.

Traditional on-premises environments struggle to keep up. Limited compute access, long simulation times, and fragmented data pipelines introduce costly delays. With engineers accounting for up to 70% of chip development costs, inefficiencies directly affect profitability. A failed first-pass tape-out can delay product launches by **6-18 months and cost millions in additional R&D and manufacturing**—a risk most teams can't afford.

## THE SOLUTION

Azure NetApp Files delivers the performance, scale, and simplicity required to modernize EDA environments and minimize time to silicon. With up to 826,000 IOPS and sub-2ms latency, Azure NetApp Files supports data-heavy tasks like logic simulation, AI-assisted regression testing, and timing closure without bottlenecks. Volumes scale to 500TiB, supporting compute farms of over 50,000 cores, while native integration with services like Azure VMware Solution and Azure Virtual Desktop streamlines operations. Built-in tiering, customer-managed keys, and compliance with FedRAMP High Baseline and DoD IL5 keep sensitive data remains protected—making Azure NetApp Files the trusted choice for leading silicon teams at AMD and Microsoft.



**Azure NetApp Files is the trusted storage backbone behind mission-critical EDA workloads.** It empowers faster design cycles, improved tape-out success rates, and seamless global collaboration.

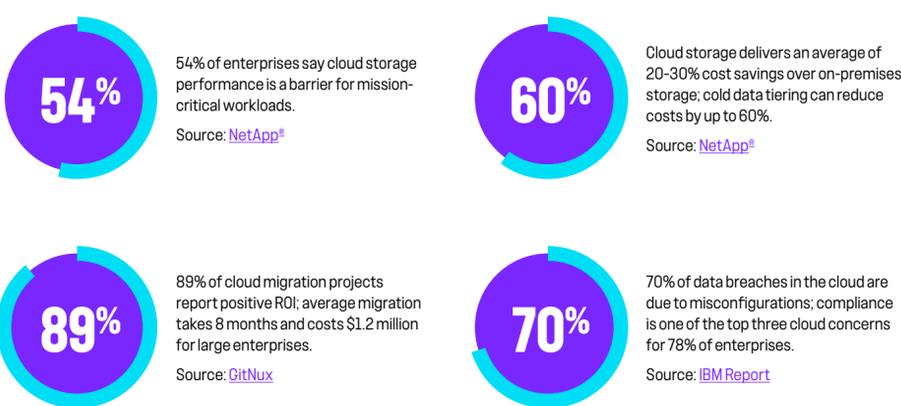
## The cloud performance edge for EDA workflows

Azure NetApp Files empowers engineering teams with a secure, scalable, and AI-ready file system to tackle the most demanding EDA workloads.

- 1** 826,000 IOPS with sub-2ms latency supports compute-heavy simulation, verification, and timing closure tasks.
- 2** 500TiB per volume enables high-throughput processing across massive datasets and global teams.
- 3** AI integration-ready via Microsoft Discovery and the Azure agentic AI tools accelerate verification and regression cycles.
- 4** Cost optimization through tiering and Reserved Instances reduces TCO without compromising performance.
- 5** Enterprise-grade protection includes encryption, snapshots, and ransomware defense for sensitive design data.
- 6** Global accessibility means engineers can access data wherever compute capacity is available.

## The move to the cloud

Powering performance at every stage of the silicon lifecycle.



## Azure NetApp Files empowers advanced EDA workflows



### Logic simulation and verification

- High-performance storage supports scalable simulation workloads
- Delivers consistent throughput for faster debug and iteration cycles
- Scales elastically to meet bursty, compute-intensive demands



### AI-assisted regression testing

- Enables AI and ML integration into large-scale regression and workflows
- Reduces validation times and improves test coverage
- Supports fast, parallel processing of complex datasets



### Place and route / timing closure

- IOPS-rich performance eliminates layout and closure bottlenecks
- Sub-2ms latency keeps compute cores fed and efficient
- Ideal for handling 12+ GiB/s data throughput needs



### Global collaboration and data sharing

- Provides seamless access to shared volumes across global teams
- Enables real-time collaboration and rapid versioning
- Supports secure, cross-zone data sharing and handoffs

## Built for what's now. Ready for what's next.

Azure NetApp Files isn't just enabling high-performance design and simulation—it's powering the future of semiconductor innovation. With deep integration into the Microsoft AI ecosystem and unmatched data throughput, Azure NetApp Files provides the storage backbone for next-generation chip design.

## Future-ready EDA innovation

<p><b>Gateway to agentic AI workflows</b></p> <p>Described as “your gateway to the most advanced AI services only available in Microsoft Azure,” Azure NetApp Files supports intelligent design automation and agent-based scientific discovery.</p>	<p><b>AI designing AI &amp; digital twins</b></p> <p>With ultralow latency and rapid cloning, Azure NetApp Files supports workloads where AI models design and test other models, laying the foundation for digital twin-based simulation at scale.</p>
<p><b>End-to-end chip development in the cloud</b></p> <p>Microsoft silicon teams rely on Azure NetApp Files for the full lifecycle—from simulation to tape-out—completely bypassing on-prem infrastructure.</p>	<p><b>Elastic, predictable performance</b></p> <p>Whether pushing 12+ GiB/s throughput or scaling out regression testing, Azure NetApp Files keeps pace with growing EDA demands and accelerates time to market.</p>

## Microsoft leverages Azure NetApp Files for next-generation silicon design

Microsoft's Azure Hardware Systems and Interconnect team powers the development of its Maia AI accelerator, Cobalt CPU, security HSM chip, and Boost DPU using Azure NetApp Files. With storage capable of supporting 50,000+ core compute clusters and delivering up to 12 GiB/s throughput at <2 ms latency, ANF enables faster simulations and reliable tape-out cycles. This infrastructure has been instrumental in releasing four chip families in under five years, unlocking new AI and cloud capabilities.



[Read the story](#)

## Additional resources

- [Benefits of using Azure NetApp Files for EDA >](#)
- [Azure NetApp Files solutions for three EDA cloud-compute scenarios >](#)
- [Transforming R&D with agentic AI >](#)

<sup>1</sup> Data Horizon Research, Cloud EDA Market.  
<sup>2</sup> Avaya Co, Azure NetApp Files: Revolutionizing silicon design for high-performance computing, Microsoft, February 28, 2025.



Contact Us

### About NetApp

NetApp is the intelligent data infrastructure company, combining unified data storage, integrated data services, and CloudOps solutions to turn a world of disruption into opportunity for every customer. NetApp creates silo-free infrastructure, harnessing observability and AI to enable the industry's best data management. As the only enterprise-grade storage service natively embedded in the world's biggest clouds, our data storage delivers seamless flexibility. In addition, our data services create a data advantage through superior cyber resilience, governance, and application agility. Our CloudOps solutions provide continuous optimization of performance and efficiency through observability and AI. No matter the data type, workload, or environment, with NetApp you can transform your data infrastructure to realize your business possibilities. [www.netapp.com](http://www.netapp.com)