SOLUTION BRIEF

Electronic Design Automation with Bare Metal as-a-Service, Powered by Pure

Scale to meet business EDA demands with flexible, on-demand technology infrastructure.

As semiconductor design pushes nodes below 10nm and the resulting transistor density increases exponentially, the design complexity and resulting compute and storage performance requirements for designing and maintaining these modern chips are also increasing substantially. Customer demand for the advanced semiconductors, in a growing set of connected devices, has created a need for much higher performance than traditional data center scale and legacy storage architectures can handle. And amid global supply chain issues and a continuing global chip shortage, organizations must leverage alternatives for electronic design automation (EDA) and other adjacent high-performance computing (HPC) workloads, connected with public cloud compute scale, to meet the necessary performance and shortened design cycles to speed overall design and manufacturing.

Challenges of Electronic Design Automation

Chipmakers have been cramming higher complexity into smaller form factors for decades, in a bid to remain competitive and keep pace with Moore's Law. But as chips grow in capability and complexity, so do the associated EDA workloads needed to bring them to life.

- **You need high performance to keep up with growth of EDA**: EDA workloads are evolving, and there are massive increases in design complexity, scale out compute requirements, and associated data volumes.

High Performance

Gain the performance you need to keep up with the growth of EDA.

Flexibility

Pay for only the capacity you need, when you need it.

Secure

Deliver highly secure, single tenant cloud-connected storage for EDA, HPC and other highly parallel workloads.

- **You want to eliminate semiconductor design bottlenecks**: Modern EDA chip design workflows demand a high-performance solution that can serve thousands of powerful servers and extremely fast networks in all dimensions of concurrency—throughput, IOPS, latency, fast deletes, and capacity—to eliminate bottlenecks that slow data access.

- **You need 100% control over your data security and sovereignty**: Most semiconductor design workloads and the subsequent data they produce are highly classified and sensitive intellectual property and in some countries even considered state secrets.

The Solution

Bare Metal as-a-Service, Powered by Pure provides simple, on-demand, interconnected storage and compute options hosted, deployed, and supported from a single vendor, under one contract with Pure Storage® embedded. Available through Pure Storage's Bare Metal as-a-Service partners, you get a single contract and support point to reduce complexity with flexible options to extend even further into public cloud-based compute options to provide nearly infinite compute scalability without comprising on storage performance.

Get More with Bare Metal-as-a-Service, Powered by Pure

Use Bare Metal as-a-Service, Powered by Pure to provision physical, dedicated, single tenanted storage and compute servers with cloud-like ease and speed. You can manage hardware simply with a disaggregated, single tenanted storage layer and easy, on-demand network and compute procurement. The solution includes hosting, deployment, and support of all physical aspects of your IT environment.

Bare Metal-as-a-Service, Powered by Pure lowers operational costs and risk while enabling flexible, scalable as-a-service IT infrastructure. Pay only for what you use when you use it, without long-term commitments.

With Bare Metal as a Service, Powered by Pure, you gain:

- Cloud-connected storage for EDA, HPC, and other highly parallel workloads, such as software build and testing

- Support for hundreds of thousands of parallel TCP connections per storage instance to enable high levels of parallel computation

- Consistent, multi-dimensional performance to meet job demands of high concurrency and parallelism

- Performance for verification logic design workflows—comprised of hundreds of millions of files—that demand very high metadata, read, write, and delete capabilities.

- Simplified cloud adoption with using array-level features enables data to be staged and ready for cloud use at any time and in any location geographically

- Security and control, allowing customers retain full control of their data

How It Works

The solution provides administrative access to the entire processing power of locally connected servers as well as the storage, networking, or interconnection services they require to scale into public cloud compute instances. You can manage your entire IT infrastructure from a distance via an easy-to-use interactive dashboard and a full set of APIs for automation. And you gain the advantages of controlling the hardware and software, all while deploying workloads on demand.

Meeting Your Business and Technology Needs

Many organizations have a legacy of building, managing, and hosting their IT environments on their own, which does not translate to effective delivery models. This can lead to massive cost overruns in cloud environments due to the fundamental differences and challenges of porting traditional applications to run in the cloud. There are cost implications in this do-it-yourself approach, especially regarding staff time spent in workload refactoring and having to manage separate teams for on-prem and cloud workloads. With Bare Metal as-a-Service, Powered by Pure, you can reduce costs and increase efficiency by:

- Eliminating support management for the infrastructure stack

- Delivering a highly secure, single tenant cloud environment without trade-offs

- Reducing IT staff workloads through automated deployment of IT infrastructure

- Improving IT infrastructure performance and agility to react quickly to changing business needs

- Providing low latency, high performance storage, network, and compute delivered at the edge of the cloud

Bare Metal as-a-Service, Powered by Pure enables you to scale to meet business EDA demands by delivering flexible technology infrastructure on demand. You can align your technology costs directly with usage, all while allowing your development teams to focus on product delivery and bringing new products to market. You can become more efficient with a cloud operating model without the tradeoffs of the public cloud.

Making the Switch

Bare Metal as-a-Service, Powered by Pure enables you to shift to a flexible and scalable as-a-service IT infrastructure in five key ways. It:

- Provides a single tenant, highly secure, cost effective, and fully interconnected bare metal infrastructure in one platform, and all at the speed of software

- Empowers you to reimage your cloud journey, from past (legacy on-premises applications), to present (high volume data driven applications), and future (cloud native and next-gen applications) technology challenges

- Delivers high-performance, best in class, and cost-optimized cloud edge storage for hybrid cloud

- Allows native virtualization capabilities with high performance file, object, and block storage for any environment (bare metal, virtualized, or containerized)

- Enables cloud-native container storage and orchestration on high-performance, cost optimized, bare metal infrastructure plus cloud scale compute which can directly access storage volumes in a highly secure environment

Additional Resources

- Explore Bare Metal a-a-Service, Powered by Pure.