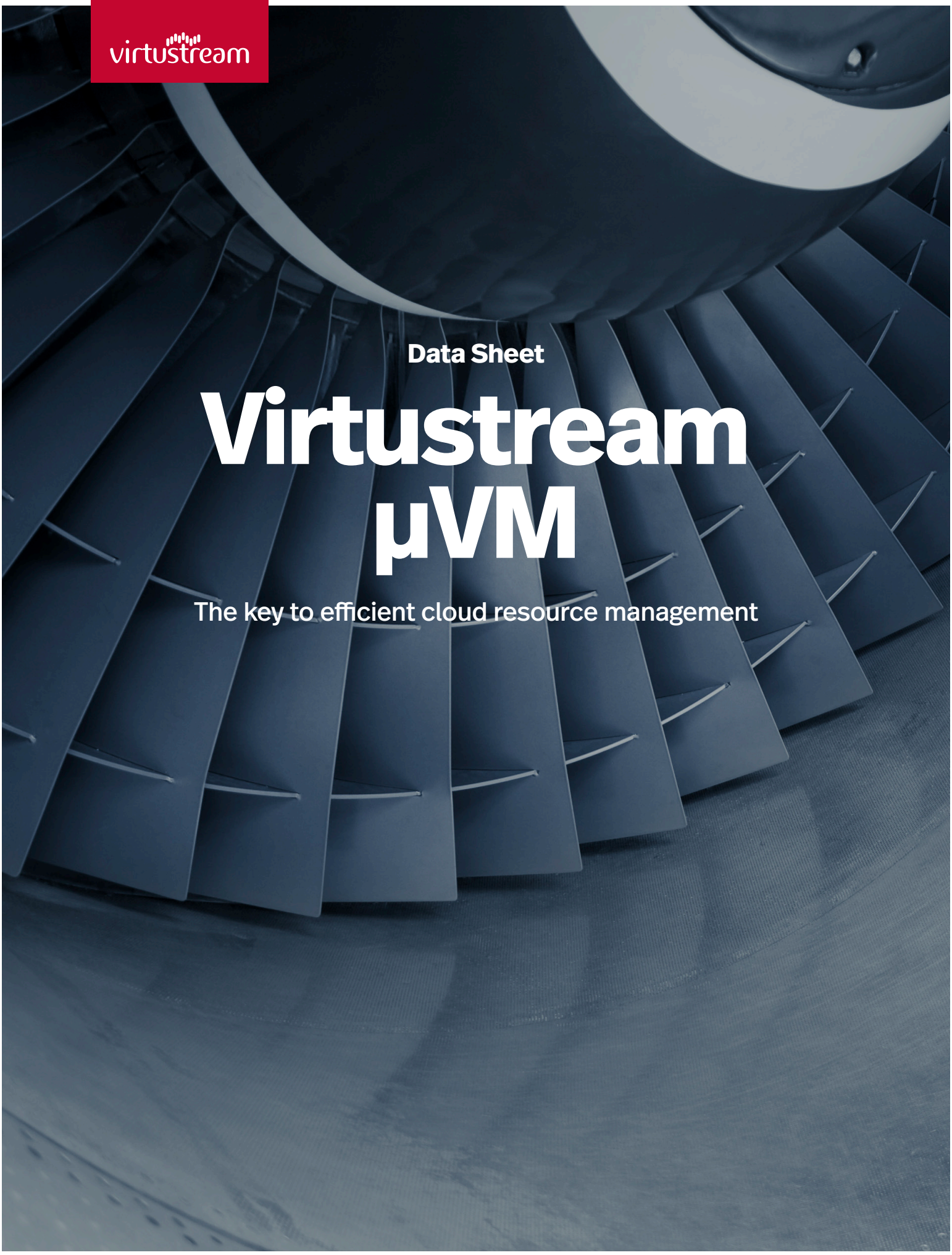
virtustream



Data Sheet

Virtustream µVM

The key to efficient cloud resource management

Virtustream µVM resource management is the company's patented cloud resource management technology. A µVM is a standardized, fine-grained bundle of computing resources that allows for the fair and accurate provisioning and measurement of resources in clouds powered by Virtustream's xStream management platform.

Fully compatible with traditional virtualization, µVM resource management's consumption-based approach yields significant advantages compared to the allocation-based method of other clouds, including unified measurement and billing across clouds, improved performance, more efficient resource utilization and true consumption billing with chargeback and showback features.

Management for cloud migration

Consider cloud as a utility similar to electricity. Like the kilowatt hour (kWh) consumption metric that your home's electric bill is based on, the µVM more closely measures your actual consumption of compute, memory, network and storage resources.

Yet, the µVM is more than simply a unit of measure; it also serves as a fundamental design and management principle for migrating to clouds. Migrating existing applications and IT to a cloud brings great benefits and with the µVM approach existing applications can be moved to the cloud without being rewritten and without losing any performance. Just as your power company uses kWh requirements at different times and locations to guide the deployment of new power plants, transformers and generators, Virtustream clouds and the xStream software use the µVM to drive resource placement, sizing, scaling and overall cloud operations across to ensure delivery as required by actual usage.

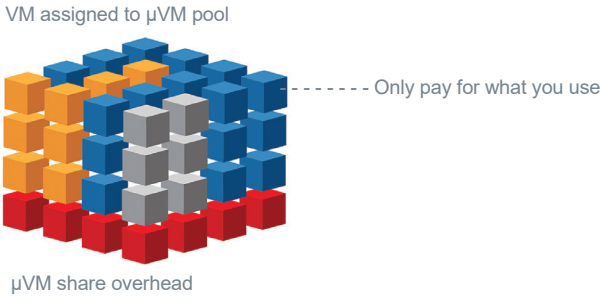
True Cloud Resource Management

Specific values of resources are based on Virtustream's own statistical research and analysis based on tens of thousands of data points across many thousands of machines for over ten years of usage. As a result, the µVM is a platform independent unit of measure that applies regardless of hypervisor or processor.

The xStream platform calculates and collects µVM consumption data on a per-workload basis by instrumenting the underlying virtual and physical machines. xStream then makes this data available to the user via the xStream management portal.

xStream also uses µVM data to dynamically tailor resource allocation to meet workload requirements. Each application is assessed for its resource needs and the optimal set of µVMs is combined to ensure that performance SLAs are met for each resource.

Beyond the cost savings mentioned previously, as a result of the insights available by applying µVM design and management principles, xStream users benefit from a better-architected cloud computing environment that delivers predictable performance and is easier to manage and scale, running on top of existing virtualization software and hypervisors.



Virtustream µVM advantages

- Unified measurement and billing for all resources
- Simplified application and infrastructure planning
- Improved performance with smart resource pooling
- Reduced cost based on true consumption

The µVM unit of measure

- 200MHz of CPU
- 768MB of memory
- 40 storage input/output operations per second (IOPs)
- 2 Mbps of networking bandwidth

µVM-based consumption method

In the Virtustream Enterprise Cloud (which uses xStream software), customers are charged based on a true µVM-based consumption method in which they pay only for the aggregate number of µVMs that they actually use, in 5-minute increments. Each resource is measured separately, so that customers with a diverse portfolio of workloads that use large amounts of a single resource (i.e. compute-intensive applications) are effectively only charged for their use of that resource; the unused µVM resources are consumed by other workloads. In effect hundreds of applications can be run on the same resources and the total µVMs consumed are measured – rather than hundreds of 'maximum-size' virtual machines for each application. In practice the use of µVM can reduce the use of virtualized resources used by 10-40%+.

The industry's leading enterprise cloud

Both as a fundamental unit of measure for cloud resources, and a core cloud architectural and management principle, the µVM is used throughout Virtustream's clouds and the xStream management platform software as a tool for metering workloads, managing resources and optimizing performance.

In moving to xStream, with its µVM-based consumption pricing, customers typically experience significant cost savings, while experiencing increased consistency, performance and manageability.

Contact

For more information on Virtustream's MicroVM, please contact us at info@virtustream.com or visit us at www.virtustream.com.

About Virtustream

Virtustream, a Dell Technologies Business, is the enterprise-class cloud service and software provider trusted by enterprises worldwide to migrate and run their mission-critical applications in the cloud. For enterprises, service providers and government agencies, Virtustream's xStream® Management Platform and Infrastructure-as-a-Service (IaaS) meets the security, compliance, performance, efficiency and consumption-based billing requirements of complex production applications in the cloud – whether private, public or hybrid.

