Disaster Recovery as a Service (DRaaS) for Cloud Providers: Cisco Reference Architecture

Overview

Cisco provides the Cisco® Disaster Recovery as a Service (DRaaS) reference architecture, which has a new set of cloud-based disaster recovery capabilities that allow Cisco Powered cloud providers to enhance their addressable market and financial performance and differentiate from other commodity service providers.

The Cisco DRaaS reference architecture for cloud providers is built as an overlay for the Cisco Virtualized Multiservice Data Center (VMDC) reference architecture for Infrastructure as a Service (IaaS). DRaaS incorporates partner-based software solutions, providing continuous data protection (CDP) and software-based replication capabilities for storage-independent disaster recovery and business continuity. The solution architecture encompasses advanced capabilities such as encryption for integrated data security and data optimization to reduce WAN costs.

The Cisco DRaaS reference architecture offers a design template to provide disaster recovery services for enterprise customer data center physical and virtual servers to a service provider's Virtual Private Cloud (VPC). DRaaS is designed to be deployed as a Cisco Powered cloud provider-managed service for a provider's midmarket and distributed enterprise customers. The Cisco DRaaS reference architecture, which is supplemented by a Cisco Validated Design (CVD) and an implementation guide, offers a fully integrated design with broad functional and at-scale testing for in-depth validation of features and functions, performance, scalability, and operations.

The Cisco DRaaS reference architecture allows cloud providers to offer new monetized disaster recovery services for workloads outside the service provider's management domain that are either on the customer's premises or in co-located environments. The cloud provider can also offer data protection and data survivability services for workloads within its VPC environment and management domain.

The Cisco DRaaS approach allows service providers to offer cloud-based disaster recovery services with rapid and highly automated recovery to meet recovery-point objective (RPO) and recovery-time objective (RTO) service level agreements with short time frames.

Figure 1   What is Disaster Recovery as a Service?
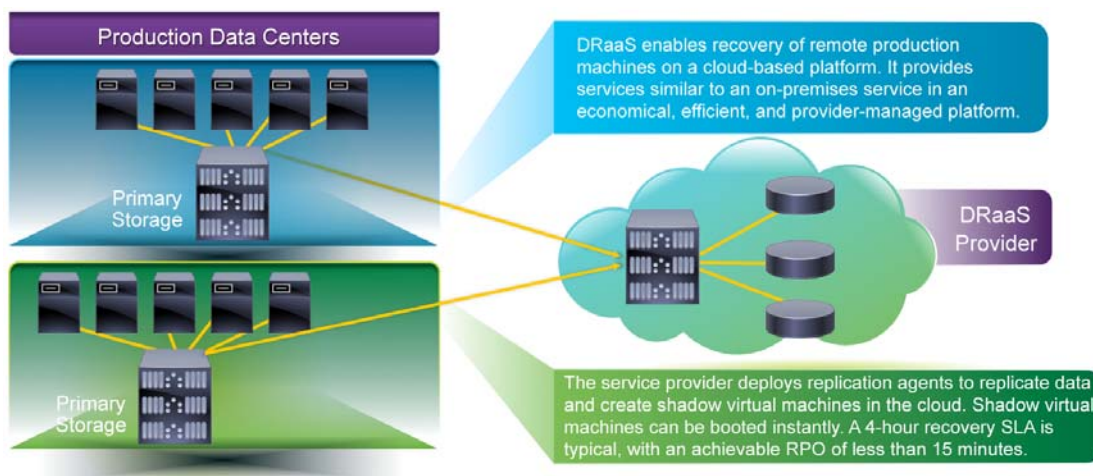
Business Reasons for Using DRaaS

Disaster recovery is a niche technology that requires a significantly large scale for organizations to gain specialized experience. The building of disaster recovery infrastructure requires some amount of specialization with IT skill sets and resources that are difficult for individual enterprises to develop and maintain on their own without that scale. Current enterprise tools for quick RPO and RTO times tend to be too expensive for widespread deployment. Heightened regulatory pressure increases the need for disaster-recovery and business continuity plans. In addition, the demands of globalization require that many organizations expand beyond the traditional primary and secondary models of disaster recovery and business continuity operations to provide in-country recovery capabilities for dozens of countries.

Enterprise Implementation of DRaaS

DRaaS presents an opportunity to make better use of the enterprises' existing underutilized disaster recovery environment. Enterprises can save on the CAPEX and OPEX of their IT infrastructure by taking advantage of new cloud-based DRaaS services. Adopting DRaaS allows enterprises to maintain the enterprise's business-critical infrastructure and applications and to help ensure their survivability after a catastrophic event. Enterprises can focus on validation of application disaster recovery without distraction by rack, stack, and recovery activities for their infrastructure and IT services. With additional monitoring and service assurance capabilities, service provider-managed DRaaS provides end customers with "pay-as-you-grow" capabilities.

Typical Cloud Provider Benefits from DRaaS

The Cisco DRaaS reference architecture allows cloud providers to offer an attractive revenue-generating service to their enterprise customers who continue to have on- premises workloads that require disaster recovery plans. The architecture provides a complete solution for replicating and protecting on-premises environments at a low cost per protected server and gives the provider a robust tool set for runbook automation and replication monitoring. These capabilities, coupled with the secure multiservice features of Cisco VMDC, allow cloud providers to offer low-cost disaster recovery on a multi-tenant platform with SLAs that require short recovery times.

Additionally, Cisco DRaaS Architecture provides the reference design for Cisco Powered Cloud and Managed Service Provider (CMSP) DRaaS service certification.

Why Use Cisco DRaaS Reference Architecture

The Cisco DRaaS reference architecture solution for cloud providers is a design template for disaster recovery workloads for advanced IaaS use cases. It includes a CVD that uses Cisco partner products to provide CDP on top of the Cisco VMDC 2.3 or Virtual Services Architecture 1.0 reference architectures. The DRaaS architecture provides the service provider with a pre-validated design template for offering disaster recovery services to enterprises. The solution architecture enables recovery of physical and virtual servers from the enterprise data center to service provider virtual private clouds.

DRaaS presents a new revenue opportunity for cloud providers using their existing cloud and network infrastructure assets. DRaaS increases end-customer retention, providing enhanced end-to-end use cases and operation efficiencies that enable service providers to differentiate their services offerings through innovative use of their current and future infrastructure investments.

DRaaS provides an opportunity for enterprises to reduce disaster recovery complexity and costs while gaining the use of multitenant virtual private cloud or public cloud capabilities as a service. DRaaS enables transparent migration to hybrid architectures and operating models. It also provides a proven disaster recovery solution from Day One, without using capital expenditures (CapEx) and without distracting IT from business initiatives.

Cisco DRaaS Architecture Key Features

- Storage-agnostic Disaster Recovery implementation
- Coverage for both virtual and physical servers
- Low RTO/RPO delivery enabled
- Multitenant implementation
- Application-aware replication
- Bandwidth optimization
- No impact on production workload
- Highly secure implementation
- Multi-hypervisor support
- Disaster Recovery process automation
- Customer self-service portal
- Partial failover use case-enabled implementation

Figure 2   Cisco DRaaS 2.0 System Key Features
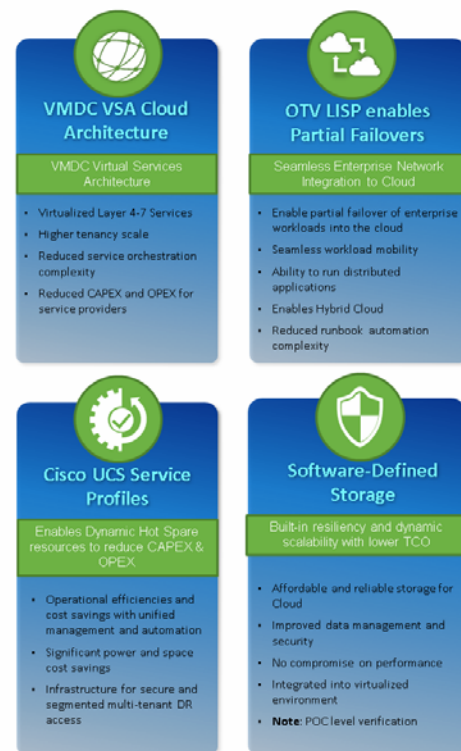
For More Information

- To learn more about the DRaaS architecture, visit: www.cisco.com/go/draas
- To learn more about Cisco VMDC, visit: http://www.cisco.com/go/vmdc
- For more information on Cisco Powered cloud solutions, visit: http://www.cisco.com/go/cmsp