

## Introduction

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This technical white paper provides a detailed technical solution description for Disaster Recovery as a Service (DRaaS) partial failover implementation.

The Cisco® DRaaS reference architecture is designed to provide a new set of cloud-based disaster-recovery capabilities, allowing Cisco-powered Cloud Providers to enhance their addressable market, financial performance, and differentiation compared to Commodity Service Providers.

Today, Service Providers (SPs) offering DRaaS do not typically provide support for partial failovers; instead, they require customers to make a binary decision to maintain operations at the primary site or failover the entire environment to the SP data center. This limitation frequently eliminates Cloud-based DRaaS offerings from consideration as a disaster recovery solution for many enterprises. Enterprises seek partial failover capabilities to reduce the outage and impact associated with executing their disaster recovery plan to address "contained" disasters such as corruption of a particular application due to virus or user errors.

This white paper describes a technical solution for SPs to support partial failover requirements using OTV and LISP technology in multi-tenant environments using Virtual Multiservices Data Center Virtual Services Architecture (VMDC VSA).

## Market Value

Due to enterprise demand, many Cloud Service Providers are keen to provide partial failover capabilities to their end customers. This would allow some applications to stay running at the customer site during the disaster declaration and only failed applications would need to be recovered at the cloud recovery site. However, such a partial failover scenario can require complex engineering and result in unforeseen operational complexities. This paper provides a tested architecture to support partial failover in a multi-tenant environment and focuses on topologies that introduce the least operational complexity.

## VMDC Virtual Services Architecture

The Cisco DRaaS reference architecture for cloud providers is built as an overlay on the Cisco VMDC reference architecture for Infrastructure as a Service (IaaS) and incorporates partner-based software solutions, providing continuous data protection (CDP) and host-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 VMDC VSA introduces virtualized Layer 4-7 services and new tenancy constructs to achieve much higher tenancy scale and reduced service orchestration complexity while eliminating cross-tenant dependencies for L4-L7 service allocation. Virtualized services include virtual routers, firewalls, load balancers, network analysis and WAN optimization virtual appliances. The DRaaS System partial failover scenario is accomplished by utilizing VMDC VSA architecture.