



CHAPTER 1

Introduction

Data is the lifeblood of every organization today. Yet, before that data can become an asset, it must first be efficiently protected and managed. Cloud Providers delivering a comprehensive data protection strategy can help end customers avert hardware, logical and physical failures. With explosive data growth rates and mounting infrastructure costs, protecting data assets can be complex and difficult for enterprises to navigate, opening great opportunity for those Cloud Providers that are ready.

According to the ESG 2015 Spending intentions survey⁺⁺, “improving data backup and recovery” and “managing data growth” are two of the top three priorities for IT organizations within enterprises. Also, according to the survey, more than 66% of the survey respondents believe that there will be significant amount of increase in spending with Cloud Computing Services.

IDC agrees that offering Backup-as-a-Service (BaaS) to enterprises is a significant market opportunity for Cloud Providers. In fact, IDC estimates that the aggregate market for backup and recovery as a service to be \$673.2 million in 2015, growing to \$1.02 billion in 2018. This demonstrates high growth opportunities for Cloud Providers that can quickly deliver comprehensive data protection solutions and services with the rapid time-to-value enterprise customers demand. Refer to [Examining Commvault’s FY16 Key Initiatives](#).

This document encapsulates proven architecture, design guidelines, and recommendations for enabling Cloud Service Providers (CSPs) to launch BaaS solutions powered by Commvault Simpana software. Simpana software is the industry-leading solution for backup and recovery delivering a single platform for integrated data and information management. The solution delivers a truly holistic approach to protecting, managing and accessing data.

With BaaS, Service Providers can enhance their total addressable market with a proven architecture that increases productivity, reduce hardware and software costs, and mitigate risks. Ultimately, it will also reduce time-to-market and time-to-revenue while fueling revenue growth with a distinctive solution that offers a competitive, differentiated edge to capitalize on these dramatic Service Provider growth opportunities.

Business & Technology Use Cases

Cisco’s BaaS reference architecture enables Cloud Service Providers (CSPs) to offer backup and recovery services to workloads outside of the CSP’s management domain that are either customer premises environments or collocated environments. In addition, CSPs can offer data protection and data survivability services on workloads within the provider’s Virtual Private Cloud (VPC) environment and management domain. The Backup & Recovery solutions described in this document are designed to provide a new set of related capabilities allowing CCA-MCP providers to enhance their addressable market, financial performance, and differentiation versus offering commoditized cloud solutions.

Use Case Overview

This document for Backup as a Service (BaaS) powered by Commvault covers the following three use cases:

- **In-Cloud BaaS**—The In-Cloud BaaS offerings enable customers to leverage workloads within CSP's VPC environment and management domain. The Service Providers will enable customers to have backup capabilities for their IaaS work loads with various policy offerings. With this use case, the CSP shall have the ability to provide:
 1. Backup and recovery services of the workloads within the primary VPC in the customer environment.
 2. Replication of backup data to CSP's remote VPC to protect against site failures. Commvault software is deployed at each CCA CSP site and supports replication, providing local backup/restore and site survivability.
- **Remote BaaS**—The Remote BaaS offerings enable customers to perform backups at their data centers and replicate the backup data to CSP clouds remotely. The CSPs own or manage the remote site for providing recovery services to the customer. With this use case, the CSP shall have the ability to provide Backup and Recovery service for production virtual servers from a customer data center to the CSP VPC along with local (i.e. customer data center) backup/recovery capabilities. The CSP deploys the Commvault solution components at the customer site. Backups occur from the production servers to the Commvault servers at the customer site and gets replicated to Cisco CCA-MCP based CSP remote site.
- **Remote BaaS without Local Data Retention**—The Remote BaaS offerings without local retention enable customers to perform backups to Service Providers clouds located remotely. The CSPs own or manage the remote site for providing recovery services to the customer. With this use case, the CSP shall have the ability to provide Backup and Recovery service for production virtual servers from a customer data center to a CSP VPC. This service does not require local storage capacity at the enterprise data centers to host the backup data. The backup data gets directly copied over to the CCA-MCP based CSP's remote data center by leveraging Commvault software.

Cisco Solution Powered by Commvault Overview & Benefits

This section describes a high level overview of the benefits of using a Cisco Solution Powered by Commvault.

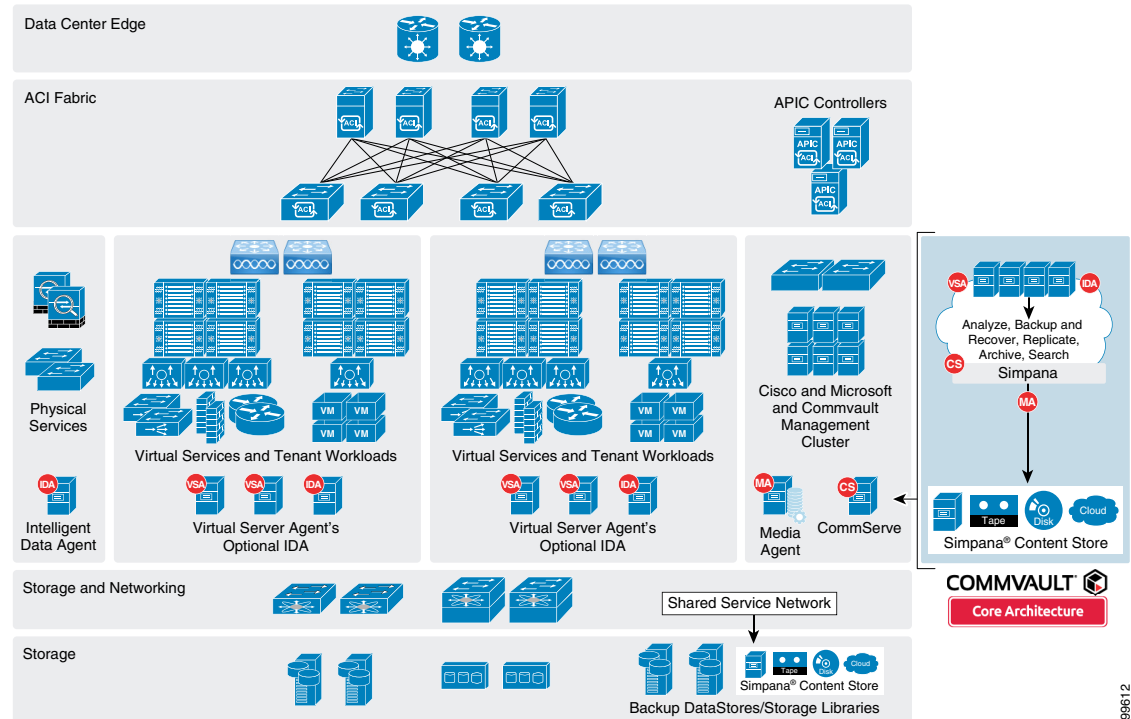
Cisco Cloud Architecture for Microsoft Cloud platform Overview

The CCA-MCP infrastructure is the foundation on which a variety of cloud services are offered. The base infrastructure consists of a set of data center devices that are setup and connected and configured prior to adding tenant services.

Service Providers build data centers using physical components to implement compute, storage and data center networking to create a pool of resources that are then used to offer services to tenants. Tenant services are offered using these physical resources, and provisioned and managed using automation software to enable consumption of these services. When tenants are on boarded, cloud containers are created from the pool of resources, to provide a slice of resources that include compute, storage and networking. This container is securely isolated from other tenants that are consuming similar services, thereby providing isolation for multi-tenant services.

The cloud services that are enabled in the CCA-MCP Solution are the Infrastructure as a service and Platform/Software as a service. Each of these services are described in a service configuration guide, and require the data center physical infrastructure to be built and the resource pools created and ready to onboard these services.

Figure 1-1 Cisco Cloud Architecture for the Microsoft Platform



The architecture of this solution is built using a layered approach enabling a modular design. This enables one to deploy a scalable solution with expansion capability being added in modular units.

1. Data Center Network
2. Compute for Tenant workloads
3. Storage and SAN
4. Service Tiers and differentiated services
5. Cloud Management

Commvault Simpana Overview

Commvault Simpana software is built from the ground up on a single platform and unifying code base for integrated data and information management. All functions share the same DNA and back-end technologies to deliver the unparalleled advantages and benefits of a truly holistic approach to protecting, managing, and accessing data.

Simpana software offers investment protection with a core software platform that is flexible, modular, and ready to conquer new challenges as they emerge. Simpana software does the jobs of many point-level products, only better, more cost effectively, and much more simply.

It all starts with the single platform to power highly efficient cloud infrastructures. The Simpana platform contains individually licensable module to Analyze, Replicate, Protect, Archive, and Search your data. And because these modules share a common set of back-end services and advanced capabilities, they effortlessly talk to one another through the platform to solve a myriad of problems related to the storage and access of customer's data and information.

With Commvault Simpana software, CSPs can deliver “cloud scale” shared services to end customers with multi-tenancy capabilities—all from a single platform. With built-in automation and customized reporting, CSPs and customers can spend less time on routine administration, and more time delivering value to the business. Commvault cloud-ready software enables CSPs to accelerate their time to market, expand revenue opportunities and boost profitability of cloud and managed services.