Cisco Reference Architecture: Backup as a Service (BaaS) for Cloud Providers

Powered by Cisco UCS and Commvault Simpana

At-A-Glance

Overview

The Cisco® Backup as a Service (BaaS) reference architecture enables Cloud Providers to expand their offerings to include innovative and Cisco Validated Design (CVD) certified BaaS offering powered by Cisco's UCS platform and Commvault® Simpana® software.

The BaaS reference architecture:

- Enables Cisco Powered Cloud Providers to expand their portfolio of offerings to include industry-leading Simpana software, a single platform for integrated data and information management to capitalize on dramatic growth opportunities.
- Helps Cloud Providers accelerate time-to-market and revenue with a proven architecture to gain an edge in a highly competitive industry.
- Provides opportunities for Cloud Providers to increase productivity, reduce hardware and software costs, and mitigate risks while increasing their profitability by combining industry-leading and proven Cisco Data Center and Commvault solutions.

The CVD for BaaS encapsulates proven architecture, design guidance and recommendations for enabling Cisco data center technology based Cloud Providers to launch BaaS solution powered by Cisco's UCS platform and Commvault Simpana. The Cisco BaaS reference architecture for Cloud Providers is built as an overlay for the Cisco Cloud Architecture (CCA), commonly referred to as the Virtualized Multiservice Data Center (VMDC) reference architecture, for Infrastructure as a Service (IaaS) with Commvault Simpana Software.

The Cisco BaaS reference architecture offers a design template to provide backup and recovery services for end customer data center physical and virtual servers to a service provider's Virtual Private Cloud (VPC) leveraging security, multi-tenancy, and self-service portal capabilities. BaaS is designed to be deployed as a Cisco Powered Cloud Provider-managed service for a Provider's mid-market and enterprise customers. The Cisco BaaS reference architecture, which is supplemented by a CVD Design and Implementation guide, offers a fully integrated design with broad functional and at-scale testing for in-depth validation of key features and functions, performance, scalability, and operations.

The Cisco CVD for BaaS encapsulates three use cases:

1. In-Cloud BaaS enables existing IaaS customers to leverage workloads within Service Provider's VPC environment for backup and recovery.
2. Remote BaaS offerings enable customers to perform backups at their data centers and replicate the backup data to Cloud Providers located remotely.
3. Remote BaaS without local data retention enable enterprises to perform backups to Cloud Providers located remotely.

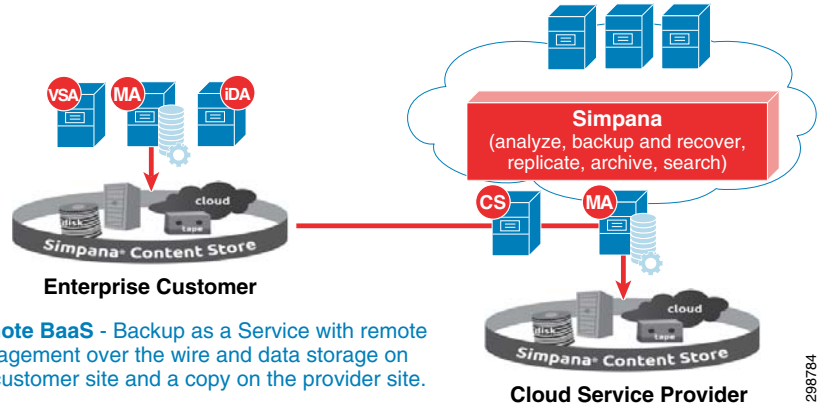
For use cases 2 and 3, Cloud Providers have the ability to provide backup and recovery for production on virtual servers from a customer data center to Service Provider VPC.

The Cisco BaaS reference architecture allows Cloud Providers to offer new monetization opportunities with backup and recovery services for workloads outside the Cloud 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 services for workloads within its VPC environment and management domain.

Figure 1 summarizes the overall Cisco BaaS reference architecture approach.

The Cisco BaaS Validated Design enables Service Providers to launch Backup as a Service (BaaS) offering with a proven reference architecture to reduce implementation time thereby reducing time to market and time to revenue.

Figure 1 Cisco Validated Design Backup Service using Cisco's Unified Computing System Platform and Commvault Simpana



Remote BaaS - Backup as a Service with remote management over the wire and data storage on the customer site and a copy on the provider site.

Business Reasons for Using BaaS

With Backup as a Service, Cloud Providers can provide comprehensive backup and recovery services to end customers. Backup and recovery is not a core deliverable for most organizations, however, efficient data recovery is a critical function. 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 there will be significant increased spending with Cloud Computing Services. IDC estimates that the aggregate market for Backup-as-a-Service is targeted to grow to $1.02 Billion by 2018 at CAGR of 21.44%. A fast growing number of customers are choosing BaaS rather than deploying in-house backup infrastructures. Using a Cloud Provider BaaS provides essential benefits for an end-customers business:

- Minimal CAPEX costs, if any, compared to in-house backup infrastructure implementation
- SLAs driven offerings
- Enhanced data security and availability
- Automated policy driven backup based on frequency agreements
- Reduced Implementation costs, with lower risks, for enterprise and mid-market customers
- Optimal use of existing IT resources on core business & mission critical IT functions, as opposed to backup and recovery tasks
- Reduced OPEX costs with a "pay as you grow" capability
- Single pane of glass management and workflow enabled automation for multi-site and multi-tenant administrative and operational efficiencies
- A platform that enables Service Providers to stack service offerings within a single platform
- Robust and mature hypervisor, OS, Cloud and Application integration capabilities to handle true enterprise class requirements

In summary, BaaS provides a considerable business advantage, offers convenient key benefits compared to in-house backup & recovery deployment, operations, and management for end customers.

Why Use Cisco BaaS Reference Architecture

The Cisco BaaS reference architecture solution for Cloud Providers is a design template for BaaS solution deployment. It embraces a proven CVD, leveraging Cisco partner products, to provide BaaS offerings on top of Cisco's CCA (VMDC) reference architecture.

BaaS provides an opportunity for Cloud Providers to reduce their backup infrastructure complexity, and costs, while gaining the use of multitenant virtual private, or public, cloud capabilities as a service. Service providers can monetize on enterprise private workloads as well, by providing backup services to application data, VMs, and servers, and provide value-added backup services on in-cloud workloads.

BaaS reference architecture allows Cloud Providers to offer service to their customers who continue to have on-premise workloads that require data protection services. BaaS enables transparent migration to hybrid architectures and operating models. These capabilities, coupled with the secure multi tenancy features of Cisco CCA, allow cloud providers to offer low-cost BaaS on a multi-tenant platform. It also provides a proven data backup and recovery solution from Day One.

BaaS powered by Cisco's UCS and Commvault Simpana presents a new revenue and profit boosting opportunity for Cloud Providers using existing cloud and network infrastructure assets by reducing time to market while increasing revenue with an innovative and proven solution. BaaS enables targeting new customers, enhances loyalty with existing customers, provides enriched end-to-end use cases and operation efficiencies that enable Cloud Providers to differentiate their service offerings through pioneering uses of current and future IT infrastructure investments.

Cisco BaaS Architecture Key Features

- Powered by:
  - Cisco's Unified Computing System (UCS)—a groundbreaking platform that converges compute, storage, networking, security and applications into integrated infrastructure
  - Commvault Simpana—industry leading Data Protection and Information Management Platform
- Comprehensive Use Cases—Deploy proven In-Cloud BaaS, Remote BaaS, and Remote BaaS use cases without local retention based on end-customer needs
- Reduced Storage Costs and Storage-Agnostic Implementation—Optimize storage and leverage existing/low cost disk capacity
- Multitenant Implementation—Allow secure individual user access
- Self Service Portal Capabilities—End user self-service and prioritize operations
- Application-Aware Replication—Create SLA by data type
- Bandwidth Optimization—Replication on only changed data
- No Impact on Production Workload—Immediate snapshot, agent-less
- Multi-hypervisor support
- Highly Secure Implementation—Data encrypted in-flight and at-rest
- Automation and Workflows and REST API Capabilities—Reduce personnel costs

Learn More

- BaaS Architecture
- Cisco Virtualized Multiservice Data Center
- Commvault Simpana