vCloud Architecture Toolkit Overview

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Agenda

Overview

vCloud Architecture Toolkit Documentation

• Introduction
• Service Definitions (Public/Private VMware vCloud)
• Architecting a VMware vCloud
• Operating a VMware vCloud
• Consuming a VMware vCloud
• Example Implementations (Public/Private VMware vCloud)
• Hybrid VMware vCloud Use Case

Sales Enablement for Licensing, Services, and Solutions
Tool for Cloud Engagement Delivery

Next Steps
Overview
Overview

History and motivation for vCloud Architecture Toolkit

• Customer and Partner Demand
  ▪ Complexity of architecture ➔ more than just a set of templates
    - Multiple technologies and integration points
    - Governance and operational considerations
  ▪ Product documentation not focused on use cases or design considerations
  ▪ Used in developing architectural solutions
  ▪ Field requests to shorten delivery

• Support for sales and delivery
  ▪ Provides depth and breadth for sales discussions
  ▪ Provides customers with tested examples for private, public, and hybrid architectures
  ▪ Helps address ‘what if?’ situations

“vCAT is a design guide to aid the creation of solution building blocks.”

– Ben Lin, Cloud Architect
vCloud Architecture Toolkit (vCAT 2.0)

“The vCloud Architecture Toolkit (vCAT) provides the tools and best practices to build, operate and consume an industry-leading cloud computing infrastructure solution”

COMPONENTS:
- DOCUMENT MAP
- vCAT INTRODUCTION
- ARCHITECTING a VMware vCloud
- SERVICE DEFINITIONS
- IMPLEMENTATION EXAMPLES
- HYBRID VMware vCloud

TARGET AUDIENCE:
Those involved in vCloud Solution planning, design, and implementation

EXPERTISE:
The cloud experts at VMware have created a clear and implementable system that customers can follow to solve a problem and achieve a specific outcome
Public Cloud Benefits from vCAT

“One client bootstrapped the architecture of their Public Cloud design based on our published materials. Without vCAT, they never would have been successful in building their Public Cloud offering. They are now a ‘vCloud Powered’ VSPP.”

“For importance to the vCloud Data Center and vCloud-Powered programs, vCAT is absolutely essential as it serves as the foundation for the design and architecture of VSPP Cloud environments. Without vCAT, it would be nearly impossible to offer technical validation of Service Providers wishing to partner with us on these programs.”

– Jason Karnes, Cloud Architect

VMworld Labs Use vCAT

“Max concurrent VMs was about 7000 with vApps in the 12-14 VM range. Some vApps had in excess of 30GB of RAM and 500GB of allocated storage (linked clones) with about 120GB used. We provisioned and destroyed 1 VM every 1.2 seconds during the show or around 4000 per hour.”

– Curtis Pope, Cloud Architect
VMware Private vCloud Deployment

“During the recent successful rollout of the VMware internal Cloud, best practices were leveraged from experts across all parts of the organization.

This included architectural considerations and design patterns from material contained in the vCloud Architecture Toolkit (vCAT). Lessons learned during the internal IaaS rollout were then provided as input back to the vCAT team for future use.

By following the vCAT best practices the team was able to stand up a private cloud infrastructure within 2 weeks of hardware delivery, allowing the team to focus more time and resources on the automation of application provisioning, migrating high governance business critical applications, and cloud administration processes.”

– Nik Gibson, Sunyo Suhami, Job Simon – VMware
Head in the Clouds
- Cloud is next step beyond virtualization ala ‘pure virtual’
- Many customers already adopting cloud
  - vCloud, Lab Manager, and vSphere based

Feet on the Ground
- Solidify foundations for Cloud Computing (Physical/Virtual)
- End-user/organization drives development
- IT-as-a-Service Strategy

Transforming IT Teams
- Increase business alignment (Business Cloud partnership with ITaaS)
- Move from virtualization to cloud
- Training and Apprenticeship
vCloud Architecture Toolkit Documentation
Third release of vCAT

Based on research and field experience

Over 1000 downloads within first week, approximately 2000 partner downloads, 7000+ downloads to date

Expanded from vCAT 1.6

- Platform considerations for vCloud Director 1.5 and vSphere 5.0
- Material for providers and consumers
- Includes material for architects, implementers, and organizations
- Hybrid Cloud Use Case
- Use of Agile Methodology with team of 70+ specialists
- Approximately 200 user stories added to this release

Usage

- VMware on vCloud & VMworld Labs
  - Design considerations and design patterns aligned with vCAT 2.0
Consider current and future integration points. vCAT focused on the infrastructure components on the left, but also have considerations for items on the right.
vCAT: Document Map
Public vCloud (Service Provider)

Introduction

Public VMware vCloud Service Definition

Private VMware vCloud Service Definition

Architecture Documents

Architecting a VMware vCloud

Operating a VMware vCloud

Consuming a VMware vCloud

Public VMware vCloud Implementation Example

Hybrid VMware vCloud Use Case

Private VMware vCloud Implementation Example

Private vCloud (Enterprise)
Cloud and vCAT Definitions and Descriptions

- Provides vocabulary and taxonomy for a cloud and information about the documentation within the toolkit.
vCAT: vCloud Service Definition Documents

What a vCloud should offer

- Provides business requirements for a vCloud
- Provides an approach for creating a service definition
- Provides a sample definition used as a starting point to create a customized service definition meeting specific business objectives
Service definition for infrastructure as a Service for private VMware vCloud for the enterprise

- Contents
- Introduction
- Service Definition
  - Service Definition Approach & Service Concepts and Terminology
  - Service Lifecycle/Quality/Characteristics/Objectives
  - Business Benefits & Stakeholders
  - User Roles & User Cases
  - Service Offerings
  - Consumer Capabilities
  - Service Metering
  - vApp Catalog
  - Capacity Distribution
  - Service Level Agreement
vCAT: Public VMware vCloud Service Definition

Service definition for Infrastructure as a Service for public vCloud service providers

Draws upon material for VMware vCloud Data Center program

• Contents
  ▪ Introduction
  ▪ Service Definition
  ▪ Compliance Definition
    - Enterprise Hybrid vCloud
    - Compliance Controls
    - Compliance Visibility and Transparency
    - Compliant Architecture
  ▪ Architecture Definition
vCAT: Architecture Documents
vCAT: Architecture Documents

What to consider when building a vCloud

• Provides architect-level guides identifying which components go into a vCloud and design considerations

• Uses public or private service definition as input into what to design

• Composed of:
  ▪ Architecting a VMware vCloud
  ▪ Operating a VMware vCloud
  ▪ Consuming a VMware vCloud

• These documents work together throughout the lifecycle of a VMware vCloud computing implementation
vCAT: Architecting a VMware vCloud

Design considerations to architect and build a VMware vCloud
Guidance to architect an Infrastructure as a Service (IaaS) cloud
Contents

• Overview
• vCloud Architecture
• Management Cluster
• Resource Groups
• vCloud Resource Design
• vCloud Metering
• Orchestration and Extension
• Multi-Site Considerations
• Hybrid vCloud Considerations
• Availability Considerations
• Security
vCAT: Operating a VMware vCloud

Provide practical operations-focused considerations and guidance based on the vCloud Operations framework

• Includes organizational, process and supporting technology considerations
Contents

• Overview
• Operating a VMware vCloud
• Organizing for vCloud Operations
• vCloud Service Management
• vCloud Operations Management
• vCloud Infrastructure Management
• vCloud Director Cell Monitoring
• Compliance Considerations
• Capacity Planning
• Capacity Management
vCAT: Consuming a VMware vCloud

Focuses on organization and user points of view for both enterprises and service providers

• Serves as a reference for infrastructure architects, managers, and end users who are considering the first steps on the journey to private, public, or hybrid vCloud computing

• Organization and user considerations for building and running vApps within a VMware vCloud
  ▪ Provides approach for consuming a vCloud from consumer perspective
  ▪ Provides a methodology for choosing consumption models, developing service catalogs, and working with vApps
  ▪ Provides considerations for interactions between enterprises and service providers
vCAT: Consuming a VMware vCloud

Contents

• Overview
• vCloud Consumption Approach
• Choosing a vCloud Consumption Model
• Organization Catalogs
• Creating and Managing vApps
vCAT: Implementation Examples
vCAT: VMware vCloud Implementation Examples

Use as a reference for what a vCloud architecture design document might look like

• We provide examples for Private and Public implementations
• Both use a fictitious corporation “New Company or NewCo”
• Provides architects and engineers with a reference implementation conforming to VMware best practices
• Describes logical and physical design
• Focuses on Infrastructure as a Service
• Provides baseline that is extensible for future usage patterns
• Based on vCloud Datacenter requirements
vCAT: Private VMware vCloud Implementation Example

Example of how to build an enterprise private VMware vCloud

Contents

• Overview
• vSphere Design
• vCloud Design – Provider Constructs
• vCloud Design – Consumer Constructs
• vCloud Security
• vCloud Management
• Extending vCloud
• Metering
vCAT: Private VMware vCloud Implementation Example

Example of how to build an enterprise private VMware vCloud

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vCAT: Hybrid Use Case
Use case for building a hybrid VMware vCloud based on the private and public implementation examples

- Use case example: Customer with Web presence who needs to cloudburst front-end server farm due to incoming traffic spikes
- Bridges Private and Public vCloud
  - Outlines what customer can implement in terms of federating local private vCloud with a set of resources available in the public vCloud
  - Describes the potential of the hybrid concepts
  - Cloudburst in this documentation describes a corner/extreme use case for hybrid. It is used here to describe the potential of the hybrid concepts
    - NOTE: hybrid does not equal cloudburst
vCAT: Hybrid VMware vCloud Use Case

Two scenarios covered:

1. On-premise VMware vSphere environment. Customer wants to federate and extend local vSphere setup using public vCloud resources.


Scenarios assume vCloud-based public vCloud as a remote, online resource covering

- Subscribing to a public vCloud for capacity overflow
- Configuring secure connectivity to the public vCloud
- Triggering techniques for cloudburst into the public vCloud
- Cloning of the front-end logic
- Moving clones into the public vCloud
- Reconfiguring the infrastructure to drive end-user requests through the public vCloud resources
- Decommissioning public vCloud resources
Written more from a consumption perspective than deployment.

- Contents
- Overview
- vSphere and Public vCloud Hybrid Scenario
  - vSphere Private Resources & vCloud Public Resources
  - Configuring Secure Connectivity to the Public vCloud
  - Triggering Techniques for Cloudburst into the Public vCloud
  - Scaling of the Front-End Logic
  - Scaling Front-End into Public vCloud via VMware vCloud Connector
  - Load Balancer Configuration
  - Decommissioning Public Cloud Resources
- Private vCloud and Public vCloud Hybrid Scenario
  - Private/Public Resources
  - Configuring Security Connectivity
  - Cloudburst
  - Scaling Front-End Logic
  - Scaling Front-End into the Public vCloud via APIs
  - Load Balancer Configuration
  - Decommissioning Public vCloud Resources
Sales Enablement for Licensing, Services, and Solutions
Why should I care about vCAT content?

• Created by experts to help you become an expert
• Demonstrates real world experience, not just theoretical gluing together of products
• Creates a baseline to form a common knowledge base, or starting point, for cloud architectures
• Can be a huge force multiplier for the pre-sales teams acting as a de-facto reference point for many questions that arise
Complexity in design rewarded by simplicity in consumption

• Lead-in to service opportunities
  ▪ Can be given to a customer to demonstrate a solution that has been proven and demonstrated in the examples and use case

• Use vCAT to assist in both strategic and tactical discussions
  ▪ Design considerations help lead discussions
  ▪ Review of vCAT by customers drives solutions based vCloud engagements

• vCAT demonstrates integration of vCloud components
  ▪ vCloud Director, vSphere, vShield, and Chargeback
  ▪ vCloud Connector, Orchestrator, and other VMware technologies
  ▪ Hardware and software vendors that provide additional integration points for vCloud solutions that are tied to vCAT should provide feedback on the type of content and where it is located
Sales Enablement: Licensing, Solutions, and Services

Licensing
• Considerations related to licensing and features

Solutions & Services
• Health Analyzer Pre-Sales Mode
• vSphere Health Check
• vCloud Jumpstart (Proof of Concept)
• vCloud Accelerator (Pilot / Pre-Production)
  ▪ Standard – Low governance workload considerations
  ▪ Advanced – Business critical or requiring wide-scale production considerations
• vCloud Plan and Design (Production)
• vCloud Readiness Assessment (In Development – Capability Mapping)
• Total solutions that cover strategic and tactical considerations, and potentially third-party integration
Tool for Cloud Engagement Delivery
Enablement tool for vCloud architects and consultants

- Baseline for architecture discussions with customer
  - Design considerations & patterns
  - Covers architecture, operations, and consumption of a vCloud
  - Supports multiple use case criteria
  - Supports vCloud related engagements

- Private & Public Implementation Examples

- Hybrid Cloud Use Case
Next Steps
“The vCloud Architecture Toolkit (vCAT) provides the tools and best practices to build, operate and consume an industry-leading cloud computing infrastructure solution”
Next Steps for vCAT 3.0

Items Under Review For Subsequent Releases

• Integration considerations with other VMware technologies
• vApp lifecycle management (creation, deployment, management, decommissioning, and mobility)
• Expanding on security
• Expanding on disaster recovery (SRM & Backup/Restore)
• Cloud bursting considerations
• Expanding Hybrid Cloud design considerations
• Software toolkit to complement vCAT
  ▪ Example: vCloud Infrastructure Sizing Tool
• Workflow examples, manual and scripted
• Source for images used
• Localization friendly
• Link to VMware Solutions Exchange (VSX) for Partner Addendums
Next Steps For You

Download Location

- [http://www.vmware.com/go/vcat](http://www.vmware.com/go/vcat)

Sales

- Use vCAT to assist in your strategic and tactical discussions
- vCAT for customers to drive engagements

Delivery

- Tool for consultants and architects
- Design considerations and design patterns to design, deploy, operate, and consume
Questions