



## Preface

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## Overview

This guide explains how to implement and configure the Compact Pod architecture as defined in the [Cisco Virtualized Multi-Tenant Data Center, Version 2.1, Design Guide](#). It also presents the results of the extensive tests and findings of the validation procedures.

## Goal of This Document

This document describes a reference architecture for a virtualized multi-tenant data center (VMDC) that brings together core products and technologies from Cisco, NetApp, EMC, and VMware to deliver a comprehensive platform for an end-to-end cloud solution. It focuses on the Enterprise scale point.

This Cisco-driven, end-to-end architecture defines how to provision flexible, dynamic pools of virtualized resources that can be shared efficiently and securely among different tenants and provisioned quickly leveraging a service portal and orchestration solution. The achieved process automation reduces resource provisioning and improves time-to-market (TTM) for IaaS-based services.

The Cisco VMDC 2.0 design focused on medium to large deployments with a range of up to 32 tenants and up to 4,000 VM instances. Cisco VMDC 2.1 enhances this design with support for multicast and jumbo frames, improvements in SLA assurance with QoS, and enhancements for Layer 4 through 7 services. The sub-aggregation layer VDC was eliminated to preserve the limited VDC count for future technology integration, such as OTV and FCoE. Also the way in which the DSN attaches to the network was modified to leverage Layer 3 peering to allow services appliances to be traded in without reconfiguration.

## Audience

This guide is written for network administrators, IT personnel, and consultants who are responsible for configuring the software settings across the network, compute, and storage devices required to realize the solution. They are responsible for implementing those features selected by the architects.

The purpose of the guide explains how to build out the core solution and how to provision the configurations that enable specific features across the solution components.

# How This Guide Is Organized

This guide is organized as follows:

- [Chapter 1, “Overview”](#)
- [Chapter 2, “Implementation Overview”](#)
- [Appendix A, “Bill of Materials As Validated”](#)

## Related Documentation

The Cisco VMDC design recommends that general Cisco data center design best practices be followed as the foundation for IaaS deployments. The following Cisco Validated Design (CVD) companion documents provide guidance on such a foundation:

### **Data Center Design—IP Network Infrastructure**

[http://www.cisco.com/en/US/docs/solutions/Enterprise/Data\\_Center/DC\\_3\\_0/DC-3\\_0\\_IPInfra.html](http://www.cisco.com/en/US/docs/solutions/Enterprise/Data_Center/DC_3_0/DC-3_0_IPInfra.html)

### **Data Center Service Patterns**

[http://www.cisco.com/en/US/docs/solutions/Enterprise/Data\\_Center/DC\\_3\\_0/dc\\_serv\\_pat.html](http://www.cisco.com/en/US/docs/solutions/Enterprise/Data_Center/DC_3_0/dc_serv_pat.html)

### **Security and Virtualization in the Data Center**

[http://www.cisco.com/en/US/docs/solutions/Enterprise/Data\\_Center/DC\\_3\\_0/dc\\_sec\\_design.html](http://www.cisco.com/en/US/docs/solutions/Enterprise/Data_Center/DC_3_0/dc_sec_design.html)

### **Designing Secure Multi-Tenancy into Virtualized Data Centers**

[http://www.cisco.com/en/US/solutions/ns340/ns414/ns742/ns743/ns1050/landing\\_dcVDDC.html](http://www.cisco.com/en/US/solutions/ns340/ns414/ns742/ns743/ns1050/landing_dcVDDC.html)

### **Enhanced Secure Multi-Tenancy Design Guide**

[http://www.cisco.com/en/US/docs/solutions/Enterprise/Data\\_Center/Virtualization/secureldg\\_V2.html](http://www.cisco.com/en/US/docs/solutions/Enterprise/Data_Center/Virtualization/secureldg_V2.html)

The following VMDC solution document provide additional details on the solution:

### **Cisco VMDC 2.0 Compact Pod Design Guide**

[http://www.cisco.com/en/US/docs/solutions/Enterprise/Data\\_Center/VMDC/vmdcDdg11.pdf](http://www.cisco.com/en/US/docs/solutions/Enterprise/Data_Center/VMDC/vmdcDdg11.pdf)

### **Cisco VMDC 2.0 Compact Pod Implementation Guide**

[http://www.cisco.com/en/US/docs/solutions/Enterprise/Data\\_Center/VMDC/vmdcDdg11.pdf](http://www.cisco.com/en/US/docs/solutions/Enterprise/Data_Center/VMDC/vmdcDdg11.pdf)

### **Cisco VMDC 1.1 Design and Deployment Guide**

[http://www.cisco.com/en/US/docs/solutions/Enterprise/Data\\_Center/VMDC/vmdcDdg11.pdf](http://www.cisco.com/en/US/docs/solutions/Enterprise/Data_Center/VMDC/vmdcDdg11.pdf)

### **Cisco VMDC Solution Overview**

[http://www.cisco.com/en/US/solutions/collateral/ns340/ns517/ns224/solution\\_overview\\_c22-602978.html](http://www.cisco.com/en/US/solutions/collateral/ns340/ns517/ns224/solution_overview_c22-602978.html)

### **Cisco VMDC Solution White Paper**

[http://www.cisco.com/en/US/solutions/collateral/ns340/ns517/ns224/ns836/white\\_paper\\_c11-604559.html](http://www.cisco.com/en/US/solutions/collateral/ns340/ns517/ns224/ns836/white_paper_c11-604559.html)

**Vblock Infrastructure Solutions**

<http://www.acadia.com/solutions/vblock/index.htm>

## About Cisco Validated Designs

The Cisco Validated Design Program consists of systems and solutions designed, tested, and documented to facilitate faster, more reliable, and more predictable customer deployments. For more information visit [www.cisco.com/go/validateddesigns](http://www.cisco.com/go/validateddesigns).

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