## Executive summary

# Deploy with confidence: VMware Cloud Foundation 5.1 on next gen Dell PowerEdge servers

The release of VMware Cloud Foundation™ (VCF) 5.1 offers new scalability, security, and enhancements that can help organizations meet essential infrastructure-as-a-service (IaaS) requirements. When backed by next gen Dell™ PowerEdge™ servers (with their own advantages in performance, security, management, and more), the VMware and Dell solution could deliver a robust, scalable, and efficient on-premises cloud infrastructure that provides the underlying infrastructure for your business to achieve your strategic business goals.

In a new comprehensive guide, which you can read at https://facts.pt/Hse6826, we explain the deployment process for VCF 5.1 on a cluster of Dell PowerEdge servers, steps that we verified by doing the work ourselves. As your organization continues to evolve in the dynamic landscape of modern IT, this guide can empower your system administrators, architects, and IT professionals with the knowledge and expertise to implement the VMware and Dell cloud solution efficiently and effectively.

In addition to verifying the straightforward deployment process of VCF 5.1 on next gen Dell PowerEdge servers, we ran an online transaction processing (OLTP) workload on 24 VMs configured with MySQL database software. The consistent new orders per minute (NOPM) metrics that we captured demonstrate the potential transactional database performance value that the VMware and Dell cloud solution can deliver.

### Add a robust, performant cloud solution to your infrastructure

Efficiently deploy VMware Cloud Foundation 5.1 to next gen Dell PowerEdge servers

### Gain powerful transactional database workload performance

Over 800K total transactions per minute from 24 MySQL VMs

# Why use a deployment guide?

A high-performing private or hybrid cloud that uses Dell PowerEdge servers could provide myriad operational benefits. For IT teams however, the process of creating the solution might seem daunting. Our deployment guide for VCF 5.1 on Dell PowerEdge servers can help.

In general, deployment guides could provide the following benefits, among others:

- Fewer errors while making the process repeatable, regardless of which IT staff are deploying the solution

- Less IT staff time due to automation and clear processes, reducing manual effort

- Better communication and collaboration within the deployment team to promote better teamwork

- Consistency across different environments, which could lead to quicker and more reliable product releases

- Optimized operations to enhance efficiency and meet client expectations

## Overview of our VCF 5.1 deployment on a Dell PowerEdge server cluster

We created our cluster with four Dell PowerEdge R750xs servers as a management domain and three Dell PowerEdge R760 servers as the virtual infrastructure workload domain. You can install VCF 5.1 either "as a new release or perform a sequential or skip-level upgrade to VMware Cloud Foundation 5.1."[1] The new installation process, which we broadly followed, has three phases:

1. Preparing the environment: Completing the Planning and Preparation Workbook was essential for keeping straight environment details that we used as reference throughout the deployment process. The Planning and Preparation Workbook "provides detailed information about the software, tools, and external services that are required to implement a Software-Defined Data Center (SDDC) with VMware Cloud Foundation, using a standard architecture model."[2]

2. Imaging all servers with ESXi: We installed the latest Dell-customized ESXi 8 version to each host and configured the OS as the Planning and Preparation Workbook specified.

3. Installing Cloud Foundation 5.1: VMware Cloud Builder handles the bulk of the VCF deployment. Using the Planning and Preparation Workbook, in conjunction with the automation of VCF, made our deployment a smooth and almost entirely automated process. (Once you have uploaded the workbook and it passes validation with no errors, you click a button to kick off the automated deployment of the management domain.)

## Key takeaway

Less experienced infrastructure administrators might find some difficulty in setting up VMware Cloud Foundation on next gen Dell PowerEdge servers due to the complex initial environment requirements, such as DNS, networking/IP pools, and preparing hosts and disks. In our experience with the Dell PowerEdge R760 server cluster however, the validation process of the Parameter Workbook helped with troubleshooting and ensuring accuracy before our deployment. Once the software successfully validated the workbook, Cloud Builder fully automated the VCF deployment on next gen Dell PowerEdge servers, including VMware components vSAN, NSX, vCenter, and SDDC Manager. This has the potential to make the deployment much easier and faster for admins at any level rather than manually completing the same processes.

1. VMware, "VMware Cloud Foundation 5.1 Release Notes," accessed January 3, 2024, https://docs.vmware.com/en/VMware-Cloud-Foundation/5.1/rn/vmware-cloud-foundation-51-release-notes/index.html.

2. VMware, "VMware Cloud Foundation 5.1 Release Notes."

**Read the report at https://facts.pt/Hse6826** ▶

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