

FUJITSU Software

ServerView Resource Orchestrator

Cloud Edition V3.4.0

A decorative horizontal band with a red-to-dark-red gradient, featuring abstract white and light red swirling lines and lens flare effects.

[VMware]

VMware NSX Usage Guide

Windows/Linux

J2X1-8088-02ENZ0(03)
October 2020

Preface

Purpose of This Document

This manual explains how to use VMware NSX along with FUJITSU Software ServerView Resource Orchestrator Cloud Edition (hereinafter Resource Orchestrator).

Intended Readers

This manual is written for people who will install, operate, and maintain systems using Resource Orchestrator. This manual is intended to supplement the manuals of Resource Orchestrator. Therefore, readers are assumed to have read the manuals of Resource Orchestrator in advance, and to have basic knowledge of Resource Orchestrator.

Structure of This Document

This manual is composed as follows:

Chapter 1 Overview

Provides an overview of configuration when using VMware NSX along with Resource Orchestrator.

Chapter 2 Design

Explains design when using VMware NSX along with Resource Orchestrator.

Chapter 3 Setup

Explains setup when using VMware NSX along with Resource Orchestrator.

Chapter 4 Operation and Maintenance

Explains operation and maintenance when using VMware NSX along with Resource Orchestrator.

Web Site URLs

URLs provided as reference sources within the main text are correct as of October 2020.

Document Conventions

The notation in this manual conforms to the following conventions.

- When there is different information for the different versions of Resource Orchestrator, it is indicated as follows.

[All Editions]	Sections relevant for all editions
[Cloud Edition]	Sections related to Cloud Edition
[Virtual Edition]	Sections related to Virtual Edition

- When using Resource Orchestrator and the functions necessary differ due to the necessary basic software (OS), it is indicated as follows:

[Windows Manager]

Sections related to Windows manager

[Linux Manager]

Sections related to Linux manager

[Windows]

Sections related to Windows

[Linux]

Sections related to Linux

[Red Hat Enterprise Linux]

Sections related to Red Hat Enterprise Linux

[Solaris]

Sections related to Solaris

[VMware]

Sections related to VMware

[Horizon View]

Sections related to VMware Horizon View

[Hyper-V]

Sections related to Hyper-V

[Xen]

Sections related to RHEL5-Xen

[KVM]

Sections related to RHEL-KVM

[Solaris Zones]

Sections related to Solaris Zones (Solaris 10) and Solaris Zones (Solaris 11)

[Solaris Zones (Solaris 10)]

Sections related to Solaris Zones with Solaris 10 VM hosts

[Solaris Zones (Solaris 11)]

Sections related to Solaris Zones with Solaris 11 VM hosts

[OVM for x86]

Sections related to Oracle VM Server for x86 2.2 and Oracle VM Server for x86 3.x

[OVM for x86 2.2]

Sections related to Oracle VM Server for x86 2.2

[OVM for x86 3.x]

Sections related to Oracle VM Server for x86 3.2 and Oracle VM Server for x86 3.3

[OVM for SPARC]

Sections related to Oracle VM Server for SPARC

[Citrix Xen]

Sections related to Citrix XenServer

[Physical Servers]

Sections related to physical servers

[Trend Micro OfficeScan]

Sections related to Trend Micro OfficeScan

[Symantec]

Sections related to Symantec Endpoint Protection

[McAfee]

Sections related to McAfee ePolicy Orchestrator

- Unless specified otherwise, the blade servers mentioned in this manual refer to PRIMERGY BX servers.
- Oracle Solaris may also be indicated as Solaris, Solaris Operating System, or Solaris OS.

- Oracle Solaris Zones may also be indicated as Solaris Containers or Solaris Container.
- Oracle VM Server for x86 may also be indicated as Oracle VM.
- In Resource Orchestrator, the following servers are referred to as SPARC Enterprise.
 - SPARC Enterprise M3000/M4000/M5000/M8000/M9000
 - SPARC Enterprise T5120/T5140/T5220/T5240/T5440
- In Resource Orchestrator, the following servers are referred to as SPARC M12.
 - SPARC M12-1/M12-2/M12-2S
- In Resource Orchestrator, the following servers are referred to as SPARC M10.
 - SPARC M10-1/M10-4/M10-4S
- Fujitsu SPARC M12 is the product name used for SPARC M12 when they are sold outside Japan.
- Fujitsu M10 is the product name used for SPARC M10 when they are sold outside Japan.
- In this manual, Fujitsu SPARC M12 is referred to as SPARC M12.
- In this manual, Fujitsu M10 is referred to as SPARC M10.
- In this manual, Fujitsu SPARC M12 and Fujitsu M10 are collectively referred to as SPARC M10/M12.
- In Resource Orchestrator, the following software is referred to as GLS.
 - PRIMECLUSTER GLS 4.4 or earlier
- In Resource Orchestrator, the following software is referred to as GDS.
 - PRIMECLUSTER GDS 4.4 or earlier
- References and character strings or values requiring emphasis are indicated using double quotes (").
- GUI items are shown enclosed by brackets ([]).
- The order of selecting menus is indicated using []-[] .
- Text to be entered by the user is indicated using bold text.
- Variables are indicated using italic text and underscores.
- The ellipses ("...") in menu names, indicating settings and operation window startup, are not shown.
- The ">" used in Windows is included in usage examples. When using Linux, read ">" as meaning "#".
- When using Resource Orchestrator on Windows 8 and Windows Server 2012, please note the following.
When OS operations are explained in this manual, the examples assume OSs up to Windows 7 and Windows Server 2008. When using Resource Orchestrator on Windows 8 or Windows Server 2012, take explanations regarding the [Start] menu as indicating the [Apps] screen.
The [Apps] screen can be displayed by right-clicking on the [Start] screen and then right-clicking [All apps].
- When using Resource Orchestrator on Windows 8.1 and Windows Server 2012 R2, please note the following.
When OS operations are explained in this manual, the examples assume OSs up to Windows 7 and Windows Server 2008. When using Resource Orchestrator on Windows 8.1 or Windows Server 2012 R2, take explanations regarding the [Start] menu as indicating the [Apps] screen.
The [Apps] screen can be displayed by swiping the [Start] screen from bottom to top, or clicking the downward facing arrow on the lower-left of the [Start] screen.

Menus in the ROR console

Operations on the ROR console can be performed using either the menu bar or pop-up menus.

By convention, procedures described in this manual only refer to pop-up menus.

Regarding Installation Folder Paths

The installation folder path may be given as C:\Fujitsu\ROR in this manual.

Replace it as shown below.

[Virtual Edition]

- When using Windows 64-bit (x64)
C:\Program Files (x86)\Resource Orchestrator
- When using Windows 32-bit (x86)
C:\Program Files\Resource Orchestrator

[Cloud Edition]

C:\Program Files (x86)\Resource Orchestrator

Command Examples

The paths used in command examples may be abbreviated. When using commands, execute them using the paths in the "Name" column in the "Reference Guide (Command) VE" and the "Reference Guide (Command/XML) CE".

Abbreviations

The following abbreviations are use in this manual.

Category

Abbreviation

- Products

Windows

Windows

- Microsoft(R) Windows Server(R) 2012 Standard
- Microsoft(R) Windows Server(R) 2012 Datacenter
- Microsoft(R) Windows Server(R) 2012 R2 Essentials
- Microsoft(R) Windows Server(R) 2012 R2 Standard
- Microsoft(R) Windows Server(R) 2012 R2 Datacenter
- Microsoft(R) Windows Server(R) 2016 Standard
- Microsoft(R) Windows Server(R) 2016 Datacenter
- Microsoft(R) Windows Server(R) 2019 Standard
- Microsoft(R) Windows Server(R) 2019 Datacenter
- Windows(R) 7 Professional
- Windows(R) 7 Ultimate
- Windows(R) 8.1 Pro
- Windows(R) 8.1 Enterprise
- Windows(R) 10 Pro
- Windows(R) 10 Enterprise

Windows Server 2012

- Microsoft(R) Windows Server(R) 2012 Standard
- Microsoft(R) Windows Server(R) 2012 Datacenter
- Microsoft(R) Windows Server(R) 2012 R2 Essentials
- Microsoft(R) Windows Server(R) 2012 R2 Standard
- Microsoft(R) Windows Server(R) 2012 R2 Datacenter

Windows Server 2016

- Microsoft(R) Windows Server(R) 2016 Standard
- Microsoft(R) Windows Server(R) 2016 Datacenter

Windows Server 2019

- Microsoft(R) Windows Server(R) 2019 Standard
- Microsoft(R) Windows Server(R) 2019 Datacenter

Windows PE

- Microsoft(R) Windows(R) Preinstallation Environment

Windows 7

- Windows(R) 7 Professional
- Windows(R) 7 Ultimate

Windows 8.1

- Windows(R) 8.1 Pro
- Windows(R) 8.1 Enterprise

Windows 10

- Windows(R) 10 Pro
- Windows(R) 10 Enterprise

DOS

- Microsoft(R) MS-DOS(R) operating system, DR DOS(R)

MSFC

- Microsoft(R) Windows Server(R) 2012 Standard Failover Cluster
- Microsoft(R) Windows Server(R) 2012 Datacenter Failover Cluster

SCVMM

- Microsoft(R) System Center 2012 Virtual Machine Manager
- Microsoft(R) System Center 2012 R2 Virtual Machine Manager
- Microsoft(R) System Center 2016 Virtual Machine Manager

Linux

Linux

- Red Hat(R) Enterprise Linux(R) 6.0 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.0 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.1 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.1 (for Intel64)

- Red Hat(R) Enterprise Linux(R) 6.2 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.2 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.3 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.3 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.4 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.4 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.5 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.5 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.6 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.6 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.7 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.7 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.8 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.8 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.9 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.9 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.10 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.10 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 7.0 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 7.1 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 7.2 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 7.4 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 7.5 (for Intel64)
- SUSE(R) Linux Enterprise Server 10 Service Pack 2 for x86
- SUSE(R) Linux Enterprise Server 10 Service Pack 2 for AMD64 & Intel64
- SUSE(R) Linux Enterprise Server 10 Service Pack 3 for x86
- SUSE(R) Linux Enterprise Server 10 Service Pack 3 for AMD64 & Intel64
- SUSE(R) Linux Enterprise Server 11 for x86
- SUSE(R) Linux Enterprise Server 11 for AMD64 & Intel64
- SUSE(R) Linux Enterprise Server 11 Service Pack 1 for x86
- SUSE(R) Linux Enterprise Server 11 Service Pack 1 for AMD64 & Intel64
- Oracle Enterprise Linux Release 6.7 for x86 (32-bit)
- Oracle Enterprise Linux Release 6.7 for x86_64 (64-bit)
- Oracle Enterprise Linux Release 7.2 for x86 (32-bit)
- Oracle Enterprise Linux Release 7.2 for x86_64 (64-bit)

Red Hat Enterprise Linux

- Red Hat(R) Enterprise Linux(R) 6.0 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.0 (for Intel64)

- Red Hat(R) Enterprise Linux(R) 6.1 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.1 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.2 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.2 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.3 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.3 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.4 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.4 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.5 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.5 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.6 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.6 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.7 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.7 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.8 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.8 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.9 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.9 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.10 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.10 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 7.0 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 7.1 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 7.2 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 7.4 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 7.5 (for Intel64)

Red Hat Enterprise Linux 6

- Red Hat(R) Enterprise Linux(R) 6.0 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.0 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.1 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.1 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.2 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.2 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.3 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.3 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.4 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.4 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.5 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.5 (for Intel64)

- Red Hat(R) Enterprise Linux(R) 6.6 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.6 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.7 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.7 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.8 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.8 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.9 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.9 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 6.10 (for x86)
- Red Hat(R) Enterprise Linux(R) 6.10 (for Intel64)

Red Hat Enterprise Linux 7

- Red Hat(R) Enterprise Linux(R) 7.0 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 7.1 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 7.2 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 7.4 (for Intel64)
- Red Hat(R) Enterprise Linux(R) 7.5 (for Intel64)

SUSE Linux Enterprise Server

- SUSE(R) Linux Enterprise Server 10 Service Pack 2 for x86
- SUSE(R) Linux Enterprise Server 10 Service Pack 2 for AMD64 & Intel64
- SUSE(R) Linux Enterprise Server 10 Service Pack 3 for x86
- SUSE(R) Linux Enterprise Server 10 Service Pack 3 for AMD64 & Intel64
- SUSE(R) Linux Enterprise Server 11 for x86
- SUSE(R) Linux Enterprise Server 11 for AMD64 & Intel64
- SUSE(R) Linux Enterprise Server 11 Service Pack 1 for x86
- SUSE(R) Linux Enterprise Server 11 Service Pack 1 for AMD64 & Intel64

Oracle Enterprise Linux

- Oracle Enterprise Linux Release 6.7 for x86 (32-bit)
- Oracle Enterprise Linux Release 6.7 for x86_64 (64-bit)
- Oracle Enterprise Linux Release 7.2 for x86 (32-bit)
- Oracle Enterprise Linux Release 7.2 for x86_64 (64-bit)

KVM

RHEL-KVM

- Red Hat(R) Enterprise Linux(R) 6.1 (for x86) Virtual Machine Function
- Red Hat(R) Enterprise Linux(R) 6.1 (for Intel64) Virtual Machine Function
- Red Hat(R) Enterprise Linux(R) 6.2 (for x86) Virtual Machine Function
- Red Hat(R) Enterprise Linux(R) 6.2 (for Intel64) Virtual Machine Function
- Red Hat(R) Enterprise Linux(R) 6.3 (for x86) Virtual Machine Function

- Red Hat(R) Enterprise Linux(R) 6.3 (for Intel64) Virtual Machine Function
- Red Hat(R) Enterprise Linux(R) 6.4 (for x86) Virtual Machine Function
- Red Hat(R) Enterprise Linux(R) 6.4 (for Intel64) Virtual Machine Function
- Red Hat(R) Enterprise Linux(R) 6.5 (for x86) Virtual Machine Function
- Red Hat(R) Enterprise Linux(R) 6.5 (for Intel64) Virtual Machine Function
- Red Hat(R) Enterprise Linux(R) 6.6 (for x86) Virtual Machine Function
- Red Hat(R) Enterprise Linux(R) 6.6 (for Intel64) Virtual Machine Function
- Red Hat(R) Enterprise Linux(R) 6.7 (for x86) Virtual Machine Function
- Red Hat(R) Enterprise Linux(R) 6.7 (for Intel64) Virtual Machine Function
- Red Hat(R) Enterprise Linux(R) 6.8 (for x86) Virtual Machine Function
- Red Hat(R) Enterprise Linux(R) 6.8 (for Intel64) Virtual Machine Function

Xen

Xen

- Citrix XenServer(R) 5.5
- Citrix Essentials(TM) for XenServer 5.5, Enterprise Edition
- Citrix XenServer(R) 6.0
- Citrix Essentials(TM) for XenServer 6.0, Enterprise Edition

Citrix

Citrix XenServer

- Citrix XenServer(R) 6.0
- Citrix XenServer(R) 6.0.2
- Citrix XenServer(R) 6.1.0
- Citrix XenServer(R) 6.2.0
- Citrix XenServer(R) 7.1 LTSR
- Citrix XenServer(R) 7.2
- Citrix Hypervisor(R)

XenServer 6

- Citrix XenServer(R) 6.0
- Citrix Essentials(TM) for XenServer 6.0, Enterprise Edition

Citrix XenApp

- Citrix XenApp(R)
- Citrix Virtual Apps(R)

Citrix XenDesktop

- Citrix XenDesktop(R)
- Citrix Virtual Apps and Desktops(R)

Oracle Solaris

Solaris

- Oracle Solaris 10 05/09 (Update7)
- Oracle Solaris 11 11/11
- Oracle Solaris 11.1
- Oracle Solaris 11.2
- Oracle Solaris 11.3

Oracle VM

OVM for x86 2.2

- Oracle(R) VM Server for x86 2.2

OVM for x86 3.x

OVM for x86 3.2

- Oracle VM Server for x86 v3.2.x

OVM for x86 3.3

- Oracle VM Server for x86 v3.3.x

OVM for SPARC

- Oracle(R) VM Server for SPARC

Oracle VM Manager

- Oracle(R) VM Manager

EMC

Navisphere

- EMC Navisphere Manager

Solutions Enabler

- EMC Solutions Enabler

VMware

VMware vSphere or vSphere

- VMware vSphere(R) 4
- VMware vSphere(R) 4.1
- VMware vSphere(R) 5
- VMware vSphere(R) 5.1
- VMware vSphere(R) 5.5
- VMware vSphere(R) 6
- VMware vSphere(R) 6.5
- VMware vSphere(R) 6.7

VMware ESX

- VMware(R) ESX(R)

VMware ESX 4

- VMware(R) ESX(R) 4

VMware ESXi

- VMware(R) ESXi(TM)

VMware ESXi 5.0

- VMware(R) ESXi(TM) 5.0

VMware ESXi 5.1

- VMware(R) ESXi(TM) 5.1

VMware ESXi 5.5

- VMware(R) ESXi(TM) 5.5

VMware ESXi 6.0

- VMware(R) ESXi(TM) 6.0

VMware ESXi 6.5

- VMware(R) ESXi(TM) 6.5

VMware ESXi 6.7

- VMware(R) ESXi(TM) 6.7

VMware Infrastructure Client

- VMware(R) Infrastructure Client

VMware Tools

- VMware(R) Tools

VMware vSphere 4.0 or vSphere 4.0

- VMware vSphere(R) 4.0

VMware vSphere 4.1 or vSphere 4.1

- VMware vSphere(R) 4.1

VMware vSphere 5 or vSphere 5

- VMware vSphere(R) 5

VMware vSphere 5.1 or vSphere 5.1

- VMware vSphere(R) 5.1

VMware vSphere 5.5 or vSphere 5.5

- VMware vSphere(R) 5.5

VMware vSphere 6.0 or vSphere 6.0

- VMware vSphere(R) 6.0

VMware vSphere 6.5 or vSphere 6.5

- VMware vSphere(R) 6.5

VMware vSphere 6.7 or vSphere 6.7

- VMware vSphere(R) 6.7

VMware vSphere Client or vSphere Client

- VMware vSphere(R) Client

VMware vCenter Server or vCenter Server

- VMware(R) vCenter(TM) Server

VMware vCenter Server Appliance or vCenter Server Appliance

- VMware(R) vCenter(TM) Server Appliance(TM)

VMware vClient

- VMware(R) vClient(TM)

VMware FT

- VMware(R) Fault Tolerance

VMware DRS

- VMware(R) Distributed Resource Scheduler

VMware DPM

- VMware(R) Distributed Power Management

VMware Storage VMotion

- VMware(R) Storage VMotion

VMware vDS

- VMware(R) vNetwork Distributed Switch

VMware Horizon View

- VMware Horizon View 5.2.x
- VMware Horizon View 5.3.x
- VMware Horizon 6.0 (with View)

VMware VSAN or VSAN

- VMware(R) Virtual SAN(TM)

VMware vSphere Web Client or vSphere Web Client

- VMware vSphere(R) Web Client

VMware NSX

- VMware NSX(R)
- VMware NSX(R) for vSphere(R)
- VMware NSX(R) for vSphere(R) 6.3

VMware NSX Controller or NSX Controller

- VMware NSX(R) Controller(TM)

VMware NSX Edge or NSX Edge

- VMware NSX(R) Edge(TM)

VMware NSX Manager or NSX Manager

- VMware NSX(R) Manager(TM)

Excel

Excel

- Microsoft(R) Office Excel(R) 2007

- Microsoft(R) Office Excel(R) 2010
- Microsoft(R) Office Excel(R) 2013

Excel 2007

- Microsoft(R) Office Excel(R) 2007

Excel 2010

- Microsoft(R) Office Excel(R) 2010

Excel 2013

- Microsoft(R) Office Excel(R) 2013

Browsers

Internet Explorer

- Internet Explorer(R) 11

Firefox

- Firefox(R)

Antivirus Software

OfficeScan

- Trend Micro OfficeScan

McAfee ePolicy Orchestrator

- McAfee(R) ePolicy Orchestrator(R)

McAfee ePO

- McAfee(R) ePolicy Orchestrator(R)

McAfee Agent

- McAfee(R) Agent

McAfee Endpoint Security

- McAfee(R) Endpoint Security

Symantec Endpoint Protection

- Symantec(TM) Endpoint Protection

Symantec Endpoint Protection Manager

- Symantec(TM) Endpoint Protection Manager

BMC

BladeLogic

- BMC BladeLogic Server Automation

ETERNUS

ESC

- ETERNUS SF Storage Cruiser

ServerView

ServerView Agent

- ServerView SNMP Agents for MS Windows (32-bit and 64-bit)
- ServerView Agents Linux
- ServerView Agents VMware for VMware ESX Server

VIOM

- ServerView Virtual-IO Manager

ISM

- ServerView Infrastructure Manager
- Infrastructure Manager

SVOM

- ServerView Operations Manager

SVFAB

- ServerView Fabric Manager

RCVE

- ServerView Resource Coordinator VE

ROR

- FUJITSU Software ServerView Resource Orchestrator

ROR VE

- FUJITSU Software ServerView Resource Orchestrator Virtual Edition

ROR CE

- FUJITSU Software ServerView Resource Orchestrator Cloud Edition

Resource Coordinator

- Systemwalker Resource Coordinator
- Systemwalker Resource Coordinator Virtual server Edition

Resource Coordinator VE

- ServerView Resource Coordinator VE
- Systemwalker Resource Coordinator Virtual server Edition

Resource Orchestrator

- FUJITSU Software ServerView Resource Orchestrator

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- The contents of this manual are subject to change without notice.

Revision History

Month/Year Issued, Edition	Manual Code
June 2017, First Edition	J2X1-8088-01ENZ0(00)
August 2017, Edition 1.1	J2X1-8088-01ENZ0(01)
September 2017, Edition 1.2	J2X1-8088-01ENZ0(02)
December 2017, Edition 1.3	J2X1-8088-01ENZ0(03)
February 2018, Edition 1.4	J2X1-8088-01ENZ0(04)
March 2018, Edition 1.5	J2X1-8088-01ENZ0(05)
October 2018, Second Edition	J2X1-8088-02ENZ0(00)
December 2018, Edition 2.1	J2X1-8088-02ENZ0(01)
December 2018, Edition 2.2	J2X1-8088-02ENZ0(02)
October 2020, Edition 2.3	J2X1-8088-02ENZ0(03)

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Contents

Chapter 1 Overview.....	1
1.1 System Configuration.....	1
1.1.1 Software Configuration.....	1
1.2 System Environment.....	1
1.2.1 Software Environment.....	1
1.2.2 Hardware Environment.....	1
1.3 Restrictions.....	2
1.4 Advisory Notes.....	2
Chapter 2 Design.....	3
2.1 Designing the Network Environment.....	3
2.2 L-Platform Configuration Design.....	4
Chapter 3 Setup.....	7
3.1 Flow of Setup.....	7
3.2 Setup for System Administrators.....	8
3.3 Setup for Infrastructure Administrators.....	9
3.3.1 Creating and Configuring VMware NSX Resources.....	9
3.3.2 Obtaining VMware NSX Resource Information.....	9
3.3.3 Configuring Resources.....	10
3.3.4 Configuring Definition Files.....	10
3.3.5 Configuring Global Templates.....	11
3.4 Setup for Tenant Administrators.....	11
Chapter 4 Operation and Maintenance.....	13
4.1 Flow of Operation and Maintenance.....	13
4.2 Operation and Maintenance by Infrastructure Administrators.....	14
4.3 Operation and Maintenance by Tenant Administrators.....	15
4.4 Operation and Maintenance by Tenant Users.....	15

Chapter 1 Overview

This chapter provides an overview of configuration when using VMware NSX along with Resource Orchestrator.

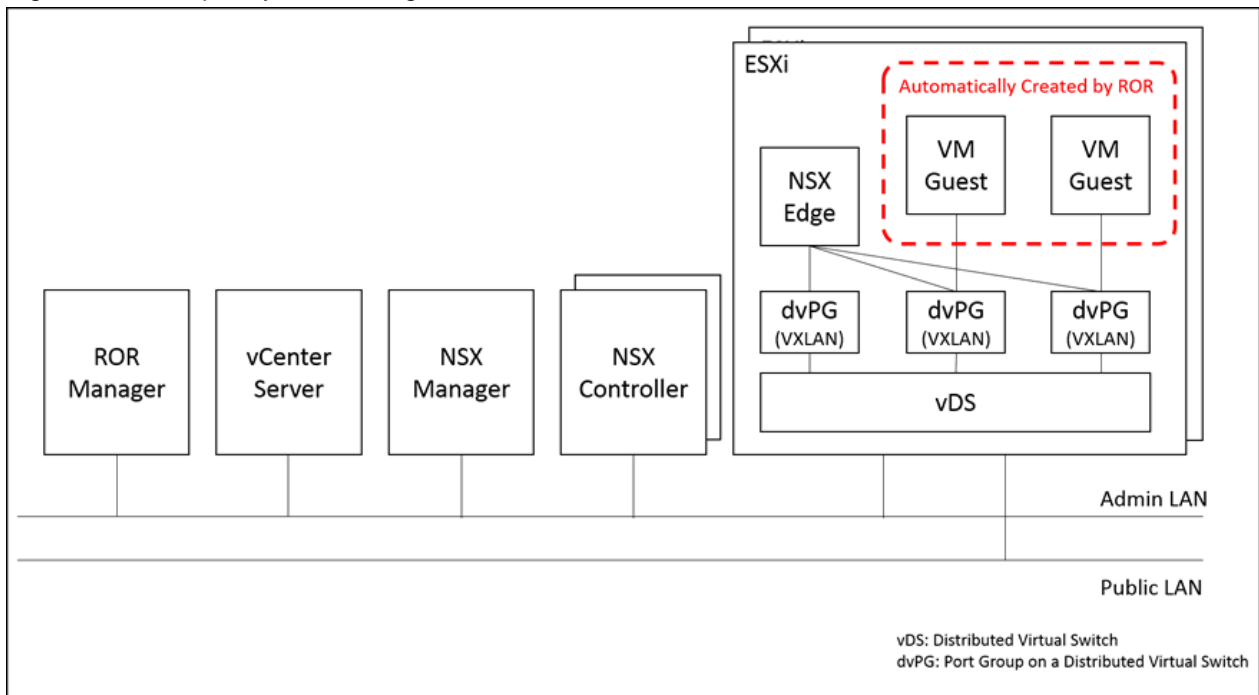
1.1 System Configuration

This section explains configuration when using VMware NSX along with Resource Orchestrator.

1.1.1 Software Configuration

A basic example system configuration when using VMware NSX along with Resource Orchestrator is given below.

Figure 1.1 Example System Configuration



1.2 System Environment

This section explains the system environment when using VMware NSX along with Resource Orchestrator.

1.2.1 Software Environment

Refer to "6.1 Software Environment" in the "Overview" and the following table.

Table 1.1 Required Software

Required Software	Version	Remarks
VMware NSX for vSphere	6.3	Necessary to use VMware NSX. As it is an appliance, it must be placed on a different server than the manager.

1.2.2 Hardware Environment

Refer to "6.2 Hardware Environment" in the "Overview".

1.3 Restrictions

The restriction regarding use of VMware NSX along with Resource Orchestrator is as follows:

- ROR can only manage up to 4,094 VMware NSX networks (VMware NSX logical switches).

A VMware NSX network which can be managed by ROR consists of virtual machines which are created automatically by ROR and a public LAN which connects those virtual machines.

1.4 Advisory Notes

The advisory notes regarding use of VMware NSX along with Resource Orchestrator are as follows:

- It is not possible to operate VMware NSX resources using Resource Orchestrator.

Operate VMware NSX resources using vSphere Web Client, etc.

- In systems where the Resource Orchestrator manager, vCenter Server, or other resources are configured as virtual machines on VMware ESXi, to prevent the VMware NSX Distributed Firewall from blocking communication to and from these resources, register them in the VMware NSX Exclusion List.

- As using VMware NSX along with Resource Orchestrator requires a configuration in which distributed virtual switches (VMware vDS) are used, it is not possible to use the Automatic Network Configuration function of ROR.

Therefore, it is necessary to prepare VMware NSX networks (VMware NSX logical switches, etc.) in advance.

- When you have registered servers with Resource Orchestrator and the following VMware NSX resources are displayed as VM guests, do not attempt to perform power operations targeting these VM guests, migrate them between servers, or link them with L-Servers.

- NSX Manager
- NSX Controller
- NSX Edge

- When using VMware NSX along with Resource Orchestrator, VMware NSX network IDs, not VLAN IDs specified in Resource Orchestrator, are treated as the VLAN IDs of network resources.

In places where "VLAN ID" and "VLAN_ID" are displayed in the ROR console or in the execution results of commands of Resource Orchestrator, interpret them as indicating "VMware NSX Network IDs".

- It is not possible to view the settings of firewalls and other functions of VMware NSX using Resource Orchestrator.

To ensure proper operation, it is necessary for infrastructure administrators to notify tenant administrators and tenant users of the settings configured for the resources of VMware NSX.

- When creating an L-Platform template, do not enable automatic selection of segments. Ensure that the system configuration will have the intended design by specifying segments manually in the template.

- When modifying the configuration of an L-Platform makes it necessary to change the settings of a VMware NSX resource, an infrastructure administrator must change of settings of VMware NSX.

During the following reconfiguration operations, it is necessary for an infrastructure administrator to change the settings of VMware NSX.

- Addition or deletion of a segment
- Modification of a firewall or load balancing settings

For details, refer to "[Chapter 4 Operation and Maintenance](#)"

Chapter 2 Design

This chapter explains design when using VMware NSX along with Resource Orchestrator.

2.1 Designing the Network Environment

This section explains design of the network environment when using VMware NSX along with Resource Orchestrator.

Also refer to "Chapter 9 Defining and Configuring the Network Environment" in the "Design Guide CE".

When using VMware NSX, allocate VXLAN networks to the virtual system.

When using VMware NSX, it is necessary to keep the following in mind:

- The range of VXLAN IDs to use on the public LAN

Define the range of VXLAN IDs to use on VMware NSX.

Note that ROR can only manage up to 4094 VMware NSX networks (VMware NSX logical switches).

- The IDs which indicate VMware NSX networks (VMware NSX logical switches) in Resource Orchestrator

In order to link VMware NSX networks (VMware logical switches) to network resources in Resource Orchestrator, assign each VMware NSX network a number ranging from 1 to 4094.

In Resource Orchestrator, the numbers assigned to VMware NSX numbers are treated as "VMware NSX Network IDs".

Table 2.1 Example VMware NSX Network IDs

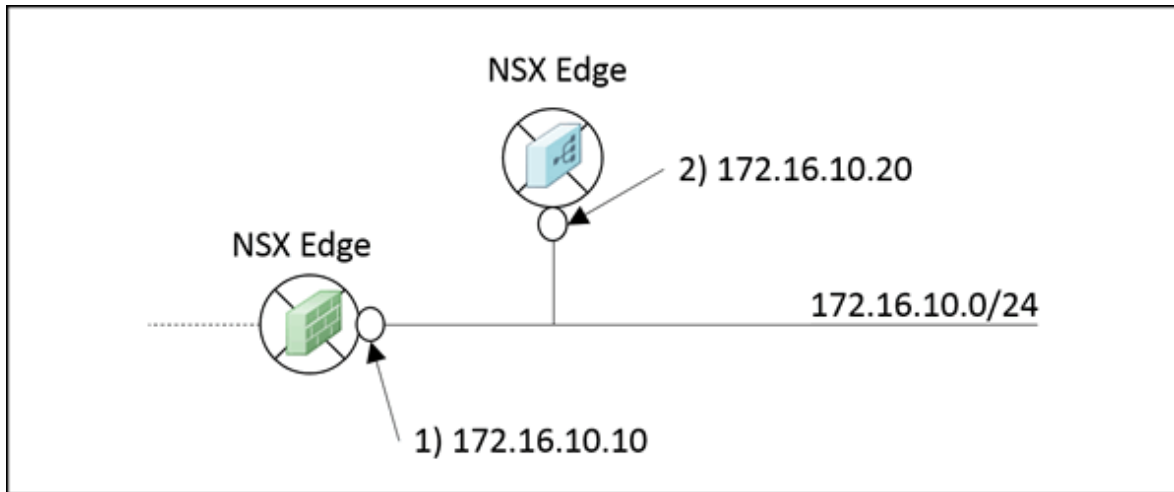
VMware NSX Network (VMware NSX Logical Switch)	"VMware NSX Network ID" in Resource Orchestrator
TenantA_web_network	10
TenantA_ap_network	11
TenantA_db_network	12
TenantB_web_network	20
...	...

- The IP address range of the public LAN

When connecting VMware NSX networks (VMware NSX logical switches) to NSX Edges, it is necessary to exclude the IP addresses of the NSX Edges, such as the IP address of the NSX Edge interface and the virtual IP address of the NSX Edge load balancing function, from the IP address range of the public LAN.

For example, in the VMware NSX network configuration shown below, it is necessary to exclude IP addresses 1) and 2).

Figure 2.1 Example of the IP Address Range of a Public LAN



- VMware NSX security settings

Using VMware NSX security settings such as micro-segmentation, it is possible to minutely control communication to and from L-Platforms and segments.

In order to effectively implement VMware NSX security settings in L-Platforms etc., it is necessary to properly design firewalls, load balancing settings, security groups, etc.

For example, design of the following is necessary:

- Security settings for inter-L-Platform and inter-segment communication
- Security settings for communication within segments
- Settings for the range of IP addresses over which network traffic is distributed by the load balancing function

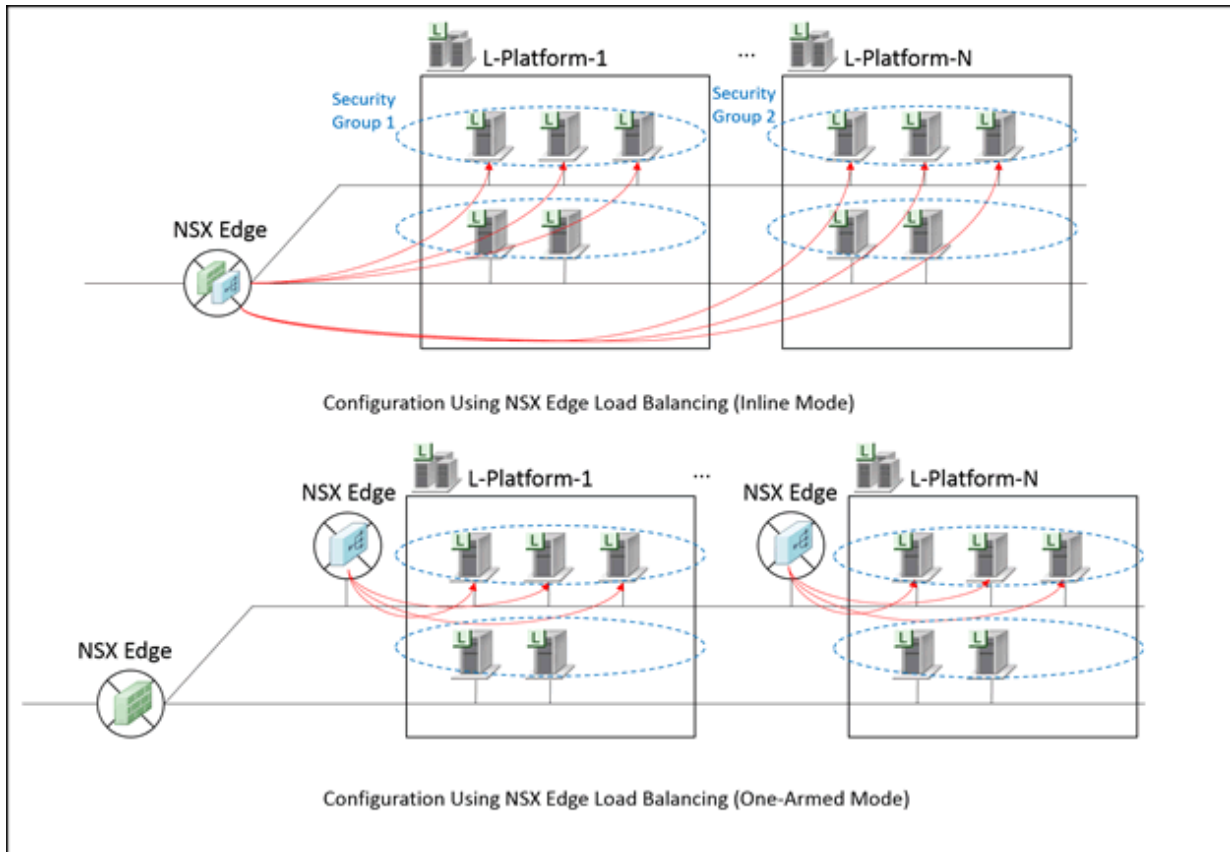
For details, refer to the documentation (design guide, etc.) of VMware NSX.

2.2 L-Platform Configuration Design

This section explains design of L-Platform configuration when using VMware NSX along with Resource Orchestrator.

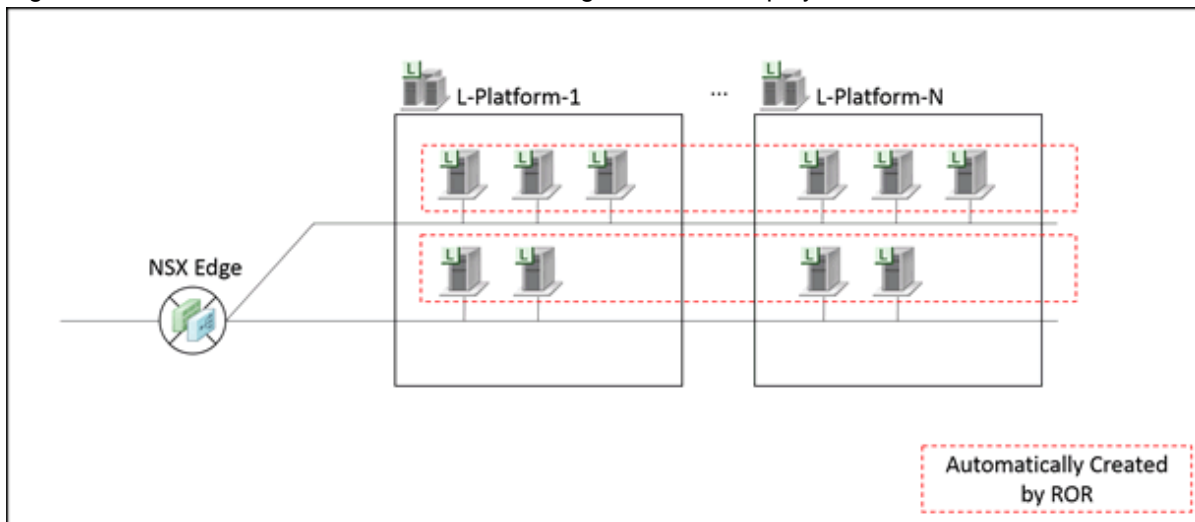
An example configuration of L-Platforms when using VMware NSX is given below.

Figure 2.2 L-Platform Configuration



During deployment of L-Platforms in Resource Orchestrator, L-Servers are automatically created in the segments specified in the L-Platform template. Other settings, such as those for NSX Edge or VMware NSX networks (VMware NSX logical switches), firewalls, load balancing settings, security groups, etc., must be configured in advance.





Figure 2.3 Automatic Creation of L-Servers during L-Platform Deployment



While it is possible to use the functions of VMware NSX, such as firewall or load balancing functions, in an L-Platform, it is not possible to manage these functions using Resource Orchestrator.

For this reason, when creating an L-Platform template, it is necessary to omit any firewalls and load balancers from the configuration, as shown below.

Figure 2.4 L-Platform Template Configuration

TS		L-Platform ID	Net-team	Template name: TS
AdminLAN	DMZ	AdminLAN		192.0.2.0/24
				
● RHEL_KV...	● RHEL_KV...	● RHEL_KV...		
Business		AUTO1		198.51.100.0/24
				
● RHEL_KV...				

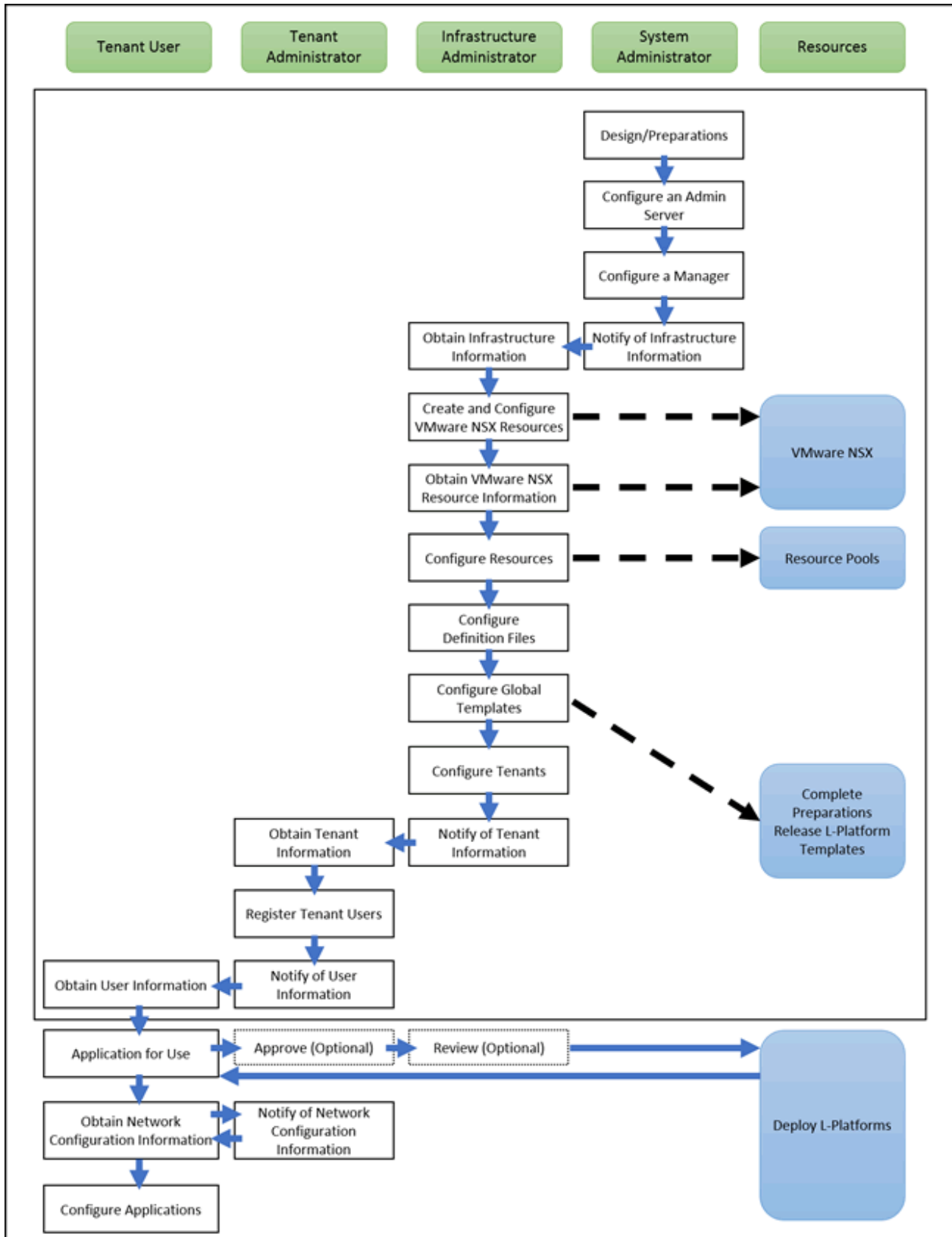
Chapter 3 Setup

This chapter explains setup when using VMware NSX along with Resource Orchestrator.

3.1 Flow of Setup

The overall flow of setup when using VMware NSX along with Resource Orchestrator is as shown below.

Figure 3.1 Flow of Setup for VMware NSX



3.2 Setup for System Administrators

This section explains setup for system administrators.

For setup for system administrators, refer to "1.1 Flow of Setup for System Administrators" in the "Setup Guide CE".

Note

In systems where the Resource Orchestrator manager, vCenter Server, or other resources are configured as virtual machines on VMware ESXi, to prevent the VMware NSX Distributed Firewall from blocking communication to and from these resources, register them in the VMware NSX Exclusion List.

3.3 Setup for Infrastructure Administrators

This section explains setup for infrastructure administrators.

For setup for infrastructure administrators, refer to "1.2 Flow of Setup for Infrastructure Administrators" in the "Setup Guide CE".

When using VMware NSX, in addition to the above operations, the following operations are necessary.

Operation Overview	Tabs Used on the ROR Console
Create and Configure VMware NSX Resources	-
Obtain VMware NSX Resource Information	-
Configure Resources	[Resources]
Configure Definition Files	-
Configure Global Templates	[Template]

Note

As tenant administrators and tenant users have no way of viewing the preconfigured firewall and load balancing settings of VMware NSX resources, it is necessary for infrastructure administrators to notify tenant administrators and tenant users of this information before commencing operation.

3.3.1 Creating and Configuring VMware NSX Resources

Create and configure the VMware NSX resources.

1. Create logical switches

Create logical switches using vSphere Web Client.

2. Create NSX Edges

Using vSphere Web Client, create NSX Edges and connect them to logical switches.

3. Configure the settings of the firewall and load balancing functions

Use vSphere Web Client to configure the settings of the NSX Edge firewall, NSX Edge load balancing, and Distributed Firewall functions.

3.3.2 Obtaining VMware NSX Resource Information

Obtain the information of VMware NSX to use in the Resource Orchestrator manager.

- Port group names on distributed virtual switches (VMware vDS)

Use the following procedure to obtain port group names on distributed virtual switches (VMware vDS) which correspond to VMware NSX logical switches.

1. Log in to vSphere Web Client

2. Go to [Home]-[Networking & Security]-[Logical Switches]

3. Record the virtual wire IDs, the segment IDs, and the names of the logical switches

4. Return to the [Home] screen, and then go to [Home]-[Networking]
5. Using the information recorded in step 3, refer to the format for port group names shown below and the list of port groups on distributed virtual switches, and record the names of the port groups which correspond to logical switches

Format for Port Group Names

```
vxw-distributed_virtual_switch_ID-virtual_wire_ID-sid-segment_ID-Name
```

- Subnet information

Use the following procedure to obtain the subnet information of a VMware NSX logical switch.

1. Log in to vSphere Web Client
2. Go to [Home]-[Networking & Security]-[Logical Switches]
3. Double-click the target logical switch
4. Selecting [NSX Edge] displays the NSX Edges connected to that logical switch. Select the target NSX Edge
5. Select [Manage]-[Settings]-[Interfaces]
6. Record the IP address and the prefix length of the vNIC for which the target logical switch is specified as the connection destination

3.3.3 Configuring Resources

This section explains network resources whose creation requires caution when using VMware NSX.

For other network resources, refer to "1.2 Flow of Setup for Infrastructure Administrators" in the "Setup Guide CE".

Create network resources corresponding to VMware NSX logical switches.

It is necessary to take care when configuring the following parameters during the creation of network resources.

Table 3.1 Configuration Parameters for the Creation of Network Resources

Item	Description
Type	Select "Public LAN".
Detail configuration	Check the "Use configured virtual switches" checkbox.
VLAN ID	Enter the VMware NSX network ID you assigned as part of the operations in " 2.1 Designing the Network Environment ". The VLAN ID is used in " 3.3.4 Configuring Definition Files ".
Subnet settings	Enter based on the subnet information collected in " 3.3.2 Obtaining VMware NSX Resource Information ".

 **Note**

When using VMware NSX along with Resource Orchestrator, enter the network ID of the VMware NSX network corresponding to the network resource in the VLAN ID column, not the VLAN ID of that network in Resource Orchestrator.

3.3.4 Configuring Definition Files

A system configuration in which distributed virtual switches are used is necessary when using VMware NSX.

For this reason, this section explains the definition files required to use distributed virtual switches (VMware vDS).

Refer to this section and "E.1.4 Network Preparations" in the "Design Guide CE".

Distributed Virtual Network Definition File

Describes the correspondence of network resources and VMware NSX logical switches.

Storage Location of the Distributed Virtual Network Definition File

[Windows Manager]

```
Installation_folder\SVROR\Manager\etc\customise_data
```

Name of the Distributed Virtual Network Definition File

```
vnetwork_vmware.rcxprop
```

Format of the Distributed Virtual Network Definition File

Describe the distributed virtual network definition file in individual lines in the following format.

```
"Port_group_name_on_distributed_virtual_switch"=VMware_NSX_network_ID
```

Enter based on the port group names obtained in "[3.3.2 Obtaining VMware NSX Resource Information](#)" and the VMware NSX network IDs specified in the VLAN ID column during creation of network resources in "[3.3.3 Configuring Resources](#)".

Distributed Virtual Switch Usage Configuration File

This file is necessary during deployment of virtual machines in systems which use distributed virtual switches.

Create the following folder and place an empty file in it.

Storage Location of the Distributed Virtual Switch Usage Configuration File

[Windows Manager]

```
Installation_folder\SVROR\Manager\etc\vm
```

Name of the Distributed Virtual Switch Usage Configuration File

```
vds_vc
```

3.3.5 Configuring Global Templates

Create the L-Platform templates which can be used in all tenants.



As Resource Orchestrator cannot manage VMware NSX resources, it is necessary to pay attention to the following when creating L-Platform templates:

- Do not add firewalls or load balancers as resources in L-Platform templates, even if the VMware NSX firewall or load balancing functions will be used in the system configuration.

For details, refer to "[2.2 L-Platform Configuration Design](#)".

- Do not enable "Automatic selection" for segments in L-Platform templates. Ensure that the system configuration will have the intended design by allocating segments manually.
-

3.4 Setup for Tenant Administrators

This section explains setup for tenant administrators.

For setup for tenant administrators, refer to "1.3 Flow of Setup for Tenant Administrators" in the "Setup Guide CE".

 Note

- Tenant administrators are notified by infrastructure administrators of the preconfigured firewall and load balancing settings of VMware NSX resources. It is necessary for tenant administrators to notify tenant users of this information before commencing operation.
- As firewall settings, etc. are already configured for VMware NSX resources, these resources should not be used in configurations others than those intended by the system administrators. For this reason, tenant administrators should only use L-Platform templates that were created by infrastructure administrators.

Chapter 4 Operation and Maintenance

This chapter explains operation and maintenance when using VMware NSX along with Resource Orchestrator.

4.1 Flow of Operation and Maintenance

The overall flow of operation and maintenance when using VMware NSX along with Resource Orchestrator is as shown below.

Figure 4.1 Flow of Application for L-Platform Usage

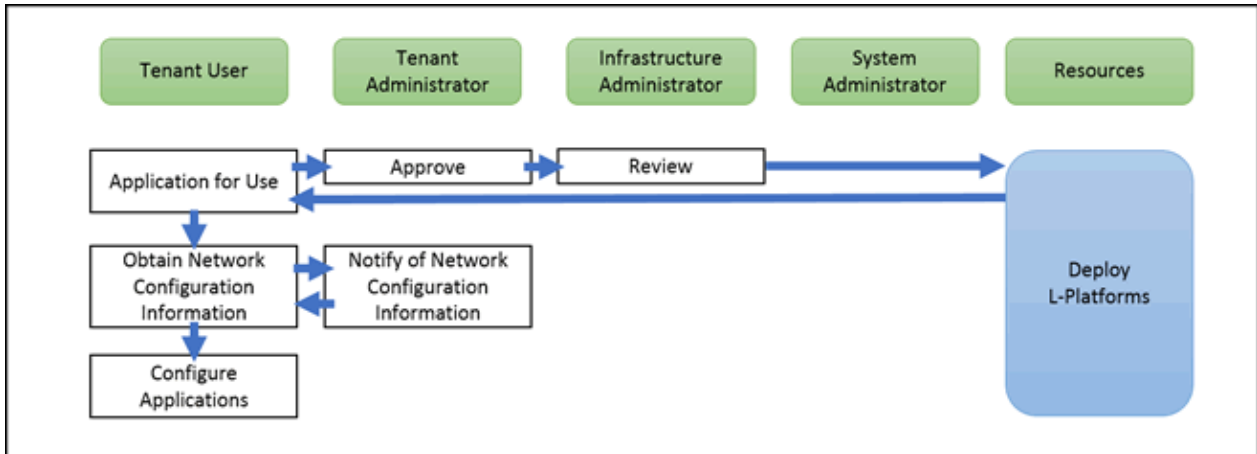


Figure 4.2 Flow of Application for L-Platform Reconfiguration

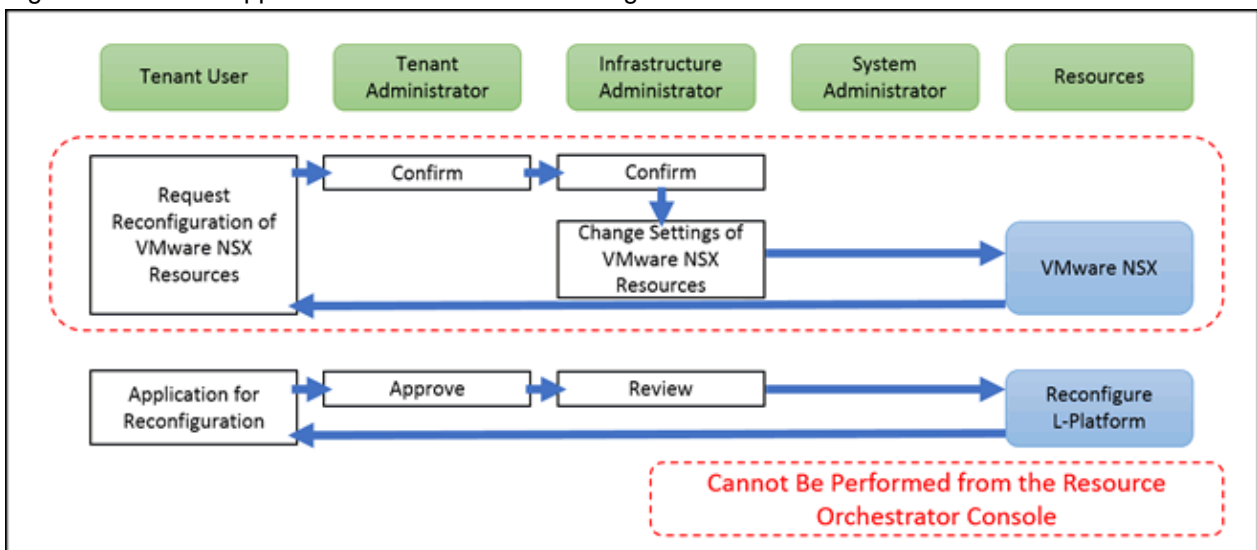
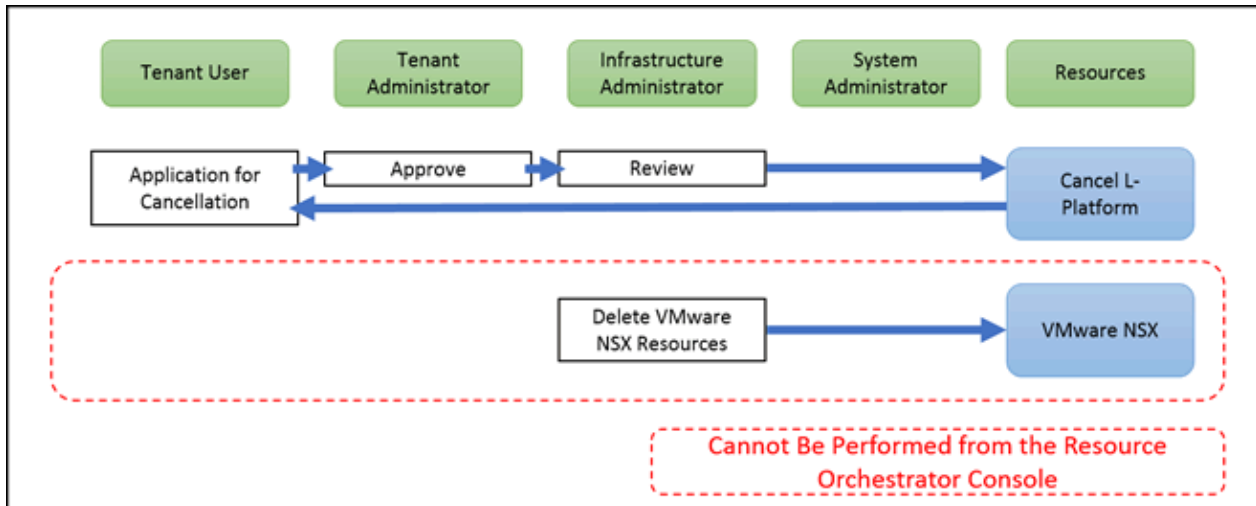


Figure 4.3 Flow of Application for L-Platform Cancellation



4.2 Operation and Maintenance by Infrastructure Administrators

This section explains operation and maintenance by infrastructure administrators.

For operation and maintenance by infrastructure administrators, refer to "1.1 Operation, Maintenance, and Monitoring by Infrastructure Administrators" in the "Operation Guide CE".

When using VMware NSX along with Resource Orchestrator, it is also necessary to perform the following operations.

As it is not possible for tenant administrators or tenant users to submit requests to reconfigure VMware NSX resources using the Resource Orchestrator console, infrastructure administrators should prepare a different method for the submission of these requests.

L-Platform Reconfiguration

- Infrastructure administrators receive requests for reconfiguration of VMware NSX resources, confirm the contents of the requests, and then perform the requested configuration changes.

When reconfiguring VMware NSX resources, it is also necessary to confirm whether the changes will cause any problems in the security settings.

- If reconfiguring VMware NSX resources requires the addition of a segment, then it is necessary to add that segment in Resource Orchestrator as well.
- Review the contents of applications for L-Platform reconfiguration and, if there are no problems, approve them.
- If reconfiguration makes a VMware NSX resource unnecessary, delete that resource in Resource Orchestrator and VMware NSX, as necessary.

L-Platform Cancellation

- Even if an L-Platform is canceled, the VMware NSX resources used in that L-Platform will not be deleted automatically.

Manually delete these resources in Resource Orchestrator and VMware NSX, as necessary.

VMware NSX Resource Maintenance

- Perform maintenance referring to the documentation of VMware NSX.

4.3 Operation and Maintenance by Tenant Administrators

This section explains operation and maintenance by tenant administrators.

For operation and maintenance by tenant administrators, refer to the "User's Guide for Tenant Administrators CE".

When using VMware NSX along with Resource Orchestrator, it is also necessary to perform the following operations.

L-Platform Reconfiguration

- When it is necessary to add or delete a segment in an L-Platform, or change the firewall or load balancing settings, it is also necessary to request changing of the settings of VMware NSX resources by the infrastructure administrator in advance.

As it is not possible to submit this request using the Resource Orchestrator console, contact the infrastructure administrator using another method.

- After receiving confirmation from the infrastructure administrator that the settings have been changed, reconfigure the L-Platform using Resource Orchestrator.

4.4 Operation and Maintenance by Tenant Users

This section explains operation and maintenance by tenant users.

For operation and maintenance by tenant users, refer to the "User's Guide for Tenant Users CE".

When using VMware NSX along with Resource Orchestrator, it is also necessary to perform the following operations.

L-Platform Usage

- When using the load balancing function, it may be necessary to change the default gateway for a deployed VM guest. Receive confirmation from the tenant administrator and the infrastructure administrator, and then change the default gateway as necessary.

For example, in the following situation, it is necessary to change the default gateway.

- When configuring a default gateway different than the one specified for the network resource

The default gateway for a virtual machine deployed using Resource Orchestrator is automatically configured as the default gateway specified for the network resource to which the virtual machine is deployed. As a result, when using a load balancer, it is necessary to change the default gateway settings of virtual machines to match that of the load balancer.

L-Platform Reconfiguration

- When using the load balancing function, it may be necessary to change the default gateway for a deployed VM guest. Receive confirmation from the tenant administrator and the infrastructure administrator, and then change the default gateway as necessary.

For example, in the following situation, it is necessary to change the default gateway.

- When configuring a default gateway different than the one specified for the network resource

The default gateway for a virtual machine deployed using Resource Orchestrator is automatically configured as the default gateway specified for the network resource to which the virtual machine is deployed. As a result, when using a load balancer, it is necessary to change the default gateway settings of virtual machines to match that of the load balancer.

- When it is necessary to add or delete a segment in an L-Platform, or change the firewall or load balancing settings, it is also necessary to request changing of the settings of VMware NSX resources by the infrastructure administrator in advance.

As it is not possible to submit this request using the Resource Orchestrator console, contact the infrastructure administrator using another method.

After receiving confirmation from the infrastructure administrator that the settings have been changed, reconfigure the L-Platform using Resource Orchestrator.