

ServerView Resource Orchestrator Cloud Edition V3.1.0

A decorative graphic consisting of several overlapping, glowing blue and purple curved lines that sweep across the page from left to right.

Quick Start Guide

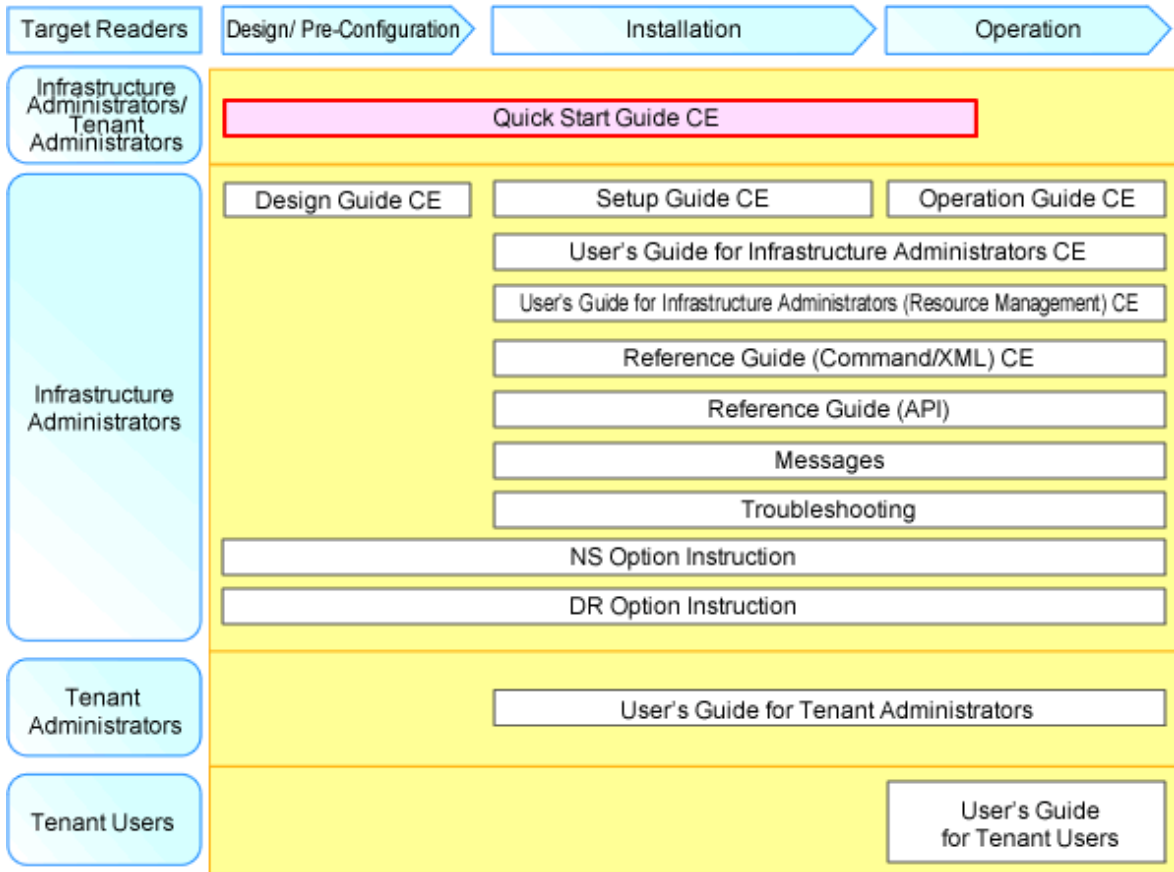
Windows/Linux

J2X1-7622-03ENZ0(00)
October 2012

Preface

QSG Document road map

The following manuals are provided with Resource Orchestrator. Refer to "[Chapter 1 Documentation Road Map](#)".



Purpose

This manual provides an outline of ServerView Resource Orchestrator (hereinafter Resource Orchestrator) and the setup flow.

Target Readers

This manual is written for people who will install and administer systems using Resource Orchestrator.

Organization

This manual is composed as follows:

[Chapter 1 Documentation Road Map](#)

Explains the document road map

[Chapter 2 Functionality Overview](#)

Explains the overview of Resource Orchestrator.

[Chapter 3 Flow of Setup and Service Provision Using Applications](#)

Explains the overall flow of setup operations when using Resource Orchestrator

Chapter 4 Flow of Setup for System Administrators

explains flow of setup for system administrators.

Chapter 5 Flow of Setup for Infrastructure Administrators

explains flow of setup for infrastructure administrators.

Chapter 6 Flow of Setup for Tenant Administrators

explains flow of setup for tenant administrators.

Notational Conventions

The notation in this manual conforms to the following conventions.

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

[Windows]	Sections related to Windows (When not using Hyper-V)
[Linux]	Sections related to Linux
[Solaris]	Sections related to Solaris or Solaris containers
[VMware]	Sections related to VMware
[Hyper-V]	Sections related to Hyper-V
[Xen]	Sections related to RHEL5-Xen
[KVM]	Sections related to RHEL-KVM
[Solaris Containers]	Sections related to Solaris containers
[Oracle VM]	Sections related to Oracle VM
[Physical Servers]	Sections related to physical servers
[VM host]	Sections related to Windows Server 2008 with VMware or Hyper-V enabled

- Unless specified otherwise, the blade servers mentioned in this manual refer to PRIMERGY BX servers.
- References and character strings or values requiring emphasis are indicated using double quotes (").
- Window names, dialog names, menu names, and tab names are shown enclosed by brackets ([]).
- Button names are shown enclosed by angle brackets (< >) or square 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 "#".
- The URLs in this manual were correct when the manual was written.

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.

Abbreviations

The following abbreviations are used in this manual:

Abbreviation	Products
Windows	Microsoft(R) Windows Server(R) 2008 Standard Microsoft(R) Windows Server(R) 2008 Enterprise Microsoft(R) Windows Server(R) 2008 R2 Standard Microsoft(R) Windows Server(R) 2008 R2 Enterprise Microsoft(R) Windows Server(R) 2008 R2 Datacenter Microsoft(R) Windows Server(R) 2003 R2, Standard Edition Microsoft(R) Windows Server(R) 2003 R2, Enterprise Edition Microsoft(R) Windows Server(R) 2003 R2, Standard x64 Edition Microsoft(R) Windows Server(R) 2003 R2, Enterprise x64 Edition Windows(R) 7 Professional Windows(R) 7 Ultimate Windows Vista(R) Business Windows Vista(R) Enterprise Windows Vista(R) Ultimate Microsoft(R) Windows(R) XP Professional operating system
Windows Server 2008	Microsoft(R) Windows Server(R) 2008 Standard Microsoft(R) Windows Server(R) 2008 Enterprise Microsoft(R) Windows Server(R) 2008 R2 Standard Microsoft(R) Windows Server(R) 2008 R2 Enterprise Microsoft(R) Windows Server(R) 2008 R2 Datacenter
Windows 2008 x86 Edition	Microsoft(R) Windows Server(R) 2008 Standard (x86) Microsoft(R) Windows Server(R) 2008 Enterprise (x86)
Windows 2008 x64 Edition	Microsoft(R) Windows Server(R) 2008 Standard (x64) Microsoft(R) Windows Server(R) 2008 Enterprise (x64)
Windows Server 2003	Microsoft(R) Windows Server(R) 2003 R2, Standard Edition Microsoft(R) Windows Server(R) 2003 R2, Enterprise Edition Microsoft(R) Windows Server(R) 2003 R2, Standard x64 Edition Microsoft(R) Windows Server(R) 2003 R2, Enterprise x64 Edition
Windows 2003 x64 Edition	Microsoft(R) Windows Server(R) 2003 R2, Standard x64 Edition Microsoft(R) Windows Server(R) 2003 R2, Enterprise x64 Edition
Windows 7	Windows(R) 7 Professional Windows(R) 7 Ultimate
Windows Vista	Windows Vista(R) Business Windows Vista(R) Enterprise Windows Vista(R) Ultimate
Windows XP	Microsoft(R) Windows(R) XP Professional operating system
Linux	Red Hat(R) Enterprise Linux(R) 5 (for x86) Red Hat(R) Enterprise Linux(R) 5 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.1 (for x86) Red Hat(R) Enterprise Linux(R) 5.1 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.2 (for x86) Red Hat(R) Enterprise Linux(R) 5.2 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.3 (for x86) Red Hat(R) Enterprise Linux(R) 5.3 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.4 (for x86) Red Hat(R) Enterprise Linux(R) 5.4 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.5 (for x86) Red Hat(R) Enterprise Linux(R) 5.5 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.6 (for x86) Red Hat(R) Enterprise Linux(R) 5.6 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.7 (for x86) Red Hat(R) Enterprise Linux(R) 5.7 (for Intel64)

Abbreviation	Products
	Red Hat(R) Enterprise Linux(R) 5.8 (for x86) Red Hat(R) Enterprise Linux(R) 5.8 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.2 (for x86) Red Hat(R) Enterprise Linux(R) 6.2 (for Intel64) SUSE(R) Linux Enterprise Server 11 for x86 SUSE(R) Linux Enterprise Server 11 for EM64T
Red Hat Enterprise Linux	Red Hat(R) Enterprise Linux(R) 5 (for x86) Red Hat(R) Enterprise Linux(R) 5 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.1 (for x86) Red Hat(R) Enterprise Linux(R) 5.1 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.2 (for x86) Red Hat(R) Enterprise Linux(R) 5.2 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.3 (for x86) Red Hat(R) Enterprise Linux(R) 5.3 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.4 (for x86) Red Hat(R) Enterprise Linux(R) 5.4 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.5 (for x86) Red Hat(R) Enterprise Linux(R) 5.5 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.6 (for x86) Red Hat(R) Enterprise Linux(R) 5.6 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.7 (for x86) Red Hat(R) Enterprise Linux(R) 5.7 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.8 (for x86) Red Hat(R) Enterprise Linux(R) 5.8 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.2 (for x86) Red Hat(R) Enterprise Linux(R) 6.2 (for Intel64)
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Red Hat Enterprise Linux 6	Red Hat(R) Enterprise Linux(R) 6.2 (for x86) Red Hat(R) Enterprise Linux(R) 6.2 (for Intel64)
RHEL5-Xen	Red Hat(R) Enterprise Linux(R) 5.4 (for x86) Linux Virtual Machine Function Red Hat(R) Enterprise Linux(R) 5.4 (for Intel64) Linux Virtual Machine Function
RHEL-KVM	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
DOS	Microsoft(R) MS-DOS(R) operating system, DR DOS(R)
SUSE Linux Enterprise Server	SUSE(R) Linux Enterprise Server 11 for x86 SUSE(R) Linux Enterprise Server 11 for EM64T

Abbreviation	Products
Oracle VM	Oracle VM Server for x86
ESC	ETERNUS SF Storage Cruiser
GLS	PRIMECLUSTER GLS
Navisphere	EMC Navisphere Manager
Solutions Enabler	EMC Solutions Enabler
MSFC	Microsoft Failover Cluster
SCVMM	System Center Virtual Machine Manager 2008 R2 System Center 2012 Virtual Machine Manager
VMware	VMware vSphere(R) 4 VMware vSphere(R) 4.1 VMware vSphere(R) 5
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 Tools	VMware(R) Tools
VMware vSphere 4.0	VMware vSphere(R) 4.0
VMware vSphere 4.1	VMware vSphere(R) 4.1
VMware vSphere 5	VMware vSphere(R) 5
VMware vSphere Client	VMware vSphere(R) Client
VMware vCenter Server	VMware(R) vCenter(TM) Server
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 vDS	VMware(R) vNetwork Distributed Switch
VMware Storage VMotion	VMware(R) Storage VMotion
VIOM	ServerView Virtual-IO Manager
ServerView Agent	ServerView SNMP Agents for MS Windows (32bit-64bit) ServerView Agents Linux ServerView Agents VMware for VMware ESX Server
RCVE	ServerView Resource Coordinator VE
ROR	ServerView Resource Orchestrator
ROR VE	ServerView Resource Orchestrator Virtual Edition
ROR CE	ServerView Resource Orchestrator Cloud Edition
Resource Coordinator	Systemwalker Resource Coordinator Systemwalker Resource Coordinator Virtual server Edition

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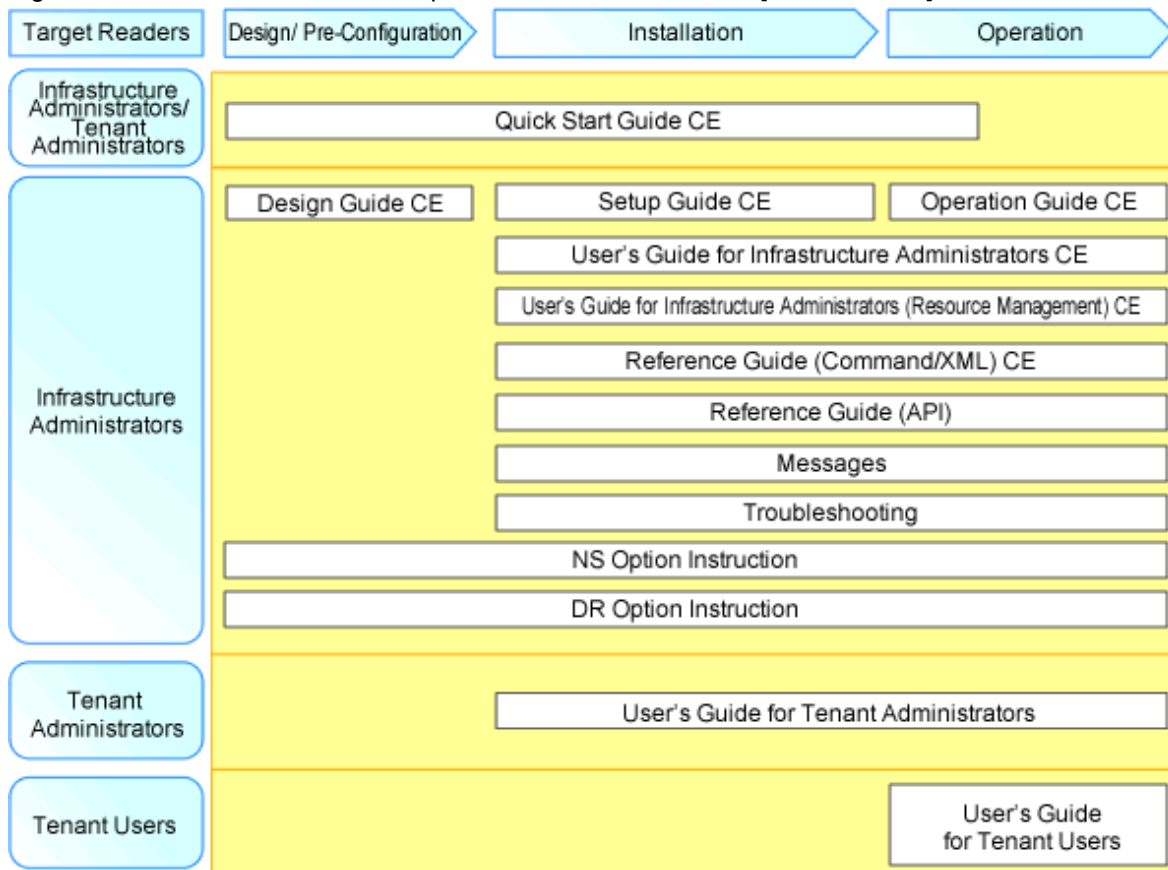
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Chapter 1 Documentation Road Map

This chapter explains Documentation Road Map.

Documentation Road Map of Cloud Edition is as follows.

Figure 1.1 Documentation Road Map of Resource Orchestrator [Cloud Edition]



The following manuals are provided with Resource Orchestrator. Please refer to them when necessary:

Table 1.1 Manual Name, Abbreviated Form, Purpose [Cloud Edition]

Manual Name	Abbreviated Form	Purpose
ServerView Resource Orchestrator Cloud Edition V3.1.0 Quick Start Guide	Quick Start Guide CE	Please read this first. Read this when you want information about the purposes and uses of basic functions, and how to flow of setup.
ServerView Resource Orchestrator Cloud Edition V3.1.0 Design Guide	Design Guide CE	read when you want to know the design necessary for the introduction of the purpose of use of a basic function, the use scene, and the product and the advance preparation.
ServerView Resource Orchestrator Cloud Edition V3.1.0 Setup Guide	Setup Guide CE	Read this when you want information about how to install and setup systems.
ServerView Resource Orchestrator Cloud Edition V3.1.0 Operation Guide	Operation Guide CE	Read this when you want information about how to operate systems that you have configured.
ServerView Resource Orchestrator Cloud Edition V3.1.0 User's Guide for Infrastructure Administrators (Resource Management)	User's Guide for Infrastructure Administrators (Resource Management) CE	Read this when you want information about how to operate the GUI (resource management) used by infrastructure administrators and dual-role administrators.

Manual Name	Abbreviated Form	Purpose
ServerView Resource Orchestrator Cloud Edition V3.1.0 User's Guide for Infrastructure Administrators	User's Guide for Infrastructure Administrators CE	Read this when you want information about how to operate the GUI (for operations other than resource management) used by infrastructure administrators and dual-role administrators.
ServerView Resource Orchestrator Cloud Edition V3.1.0 User's Guide for Tenant Administrators	User's Guide for Tenant Administrators CE	Read this when you want information about how to operate the GUI used by tenant administrators.
ServerView Resource Orchestrator Cloud Edition V3.1.0 User's Guide for Tenant Users	User's Guide for Tenant Users CE	Read this when you want information about how to operate the GUI used by tenant users.
ServerView Resource Orchestrator Cloud Edition V3.1.0 Reference Guide (Command/XML)	Reference Guide (Command/XML) CE	Read this when you want information about commands used by infrastructure administrators and dual-role administrators to manage resources, messages output by the system, and how to perform troubleshooting.
ServerView Resource Orchestrator Cloud Edition V3.1.0 Reference Guide (API)	Reference Guide (API) CE	Read this when you want information about the commands used by infrastructure administrators and dual-role administrators for operations other than resource management.
ServerView Resource Orchestrator Cloud Edition V3.1.0 Messages	Messages CE	Read this when you want detailed information about the corrective actions for displayed messages.
ServerView Resource Orchestrator Cloud Edition V3.1.0 Troubleshooting	Troubleshooting CE	Read this when you want detailed information about troubleshooting
ServerView Resource Orchestrator Cloud Edition V3.1.0 NS Option Instruction	NS Option Instruction	Read when you want information about how to setup NS Option.
ServerView Resource Orchestrator Cloud Edition V3.1.0 DR Option Instruction	DR Option Instruction	Read when you want information about how to setup DR Option.

In some cases this manual may ask you to refer to the following Virtual Edition manuals.

Please refer to them when necessary:

Table 1.2 Manual Name, Abbreviated Form, Purpose [Virtual Edition]

Manual Name	Abbreviated Form	Purpose
ServerView Resource Orchestrator Virtual Edition V3.1.0 Design Guide	Design Guide VE	Please read this first. Read this when you want information about the purposes and uses of basic functions, and how to Design Resource Orchestrator.
ServerView Resource Orchestrator Virtual Edition V3.1.0 Setup Guide	Setup Guide VE	Read this when you want information about how to install Resource Orchestrator.
ServerView Resource Orchestrator Virtual Edition V3.1.0 Operation Guide	Operation Guide VE	Read this when you want information about how to operate systems that you have configured.
ServerView Resource Orchestrator Virtual Edition V3.1.0 User's Guide	User's Guide VE	Read this when you want information about how to operate the GUI.
ServerView Resource Orchestrator Virtual Edition V3.1.0 Reference Guide (Command)	Reference Guide VE	Read this when you want information about how to use commands.

Chapter 2 Functionality Overview

This chapter provides an overview of Resource Orchestrator.

ServerView Resource Orchestrator (hereafter referred to as "this product") is a software which provides an effective ICT resource management and operation on private cloud environment.

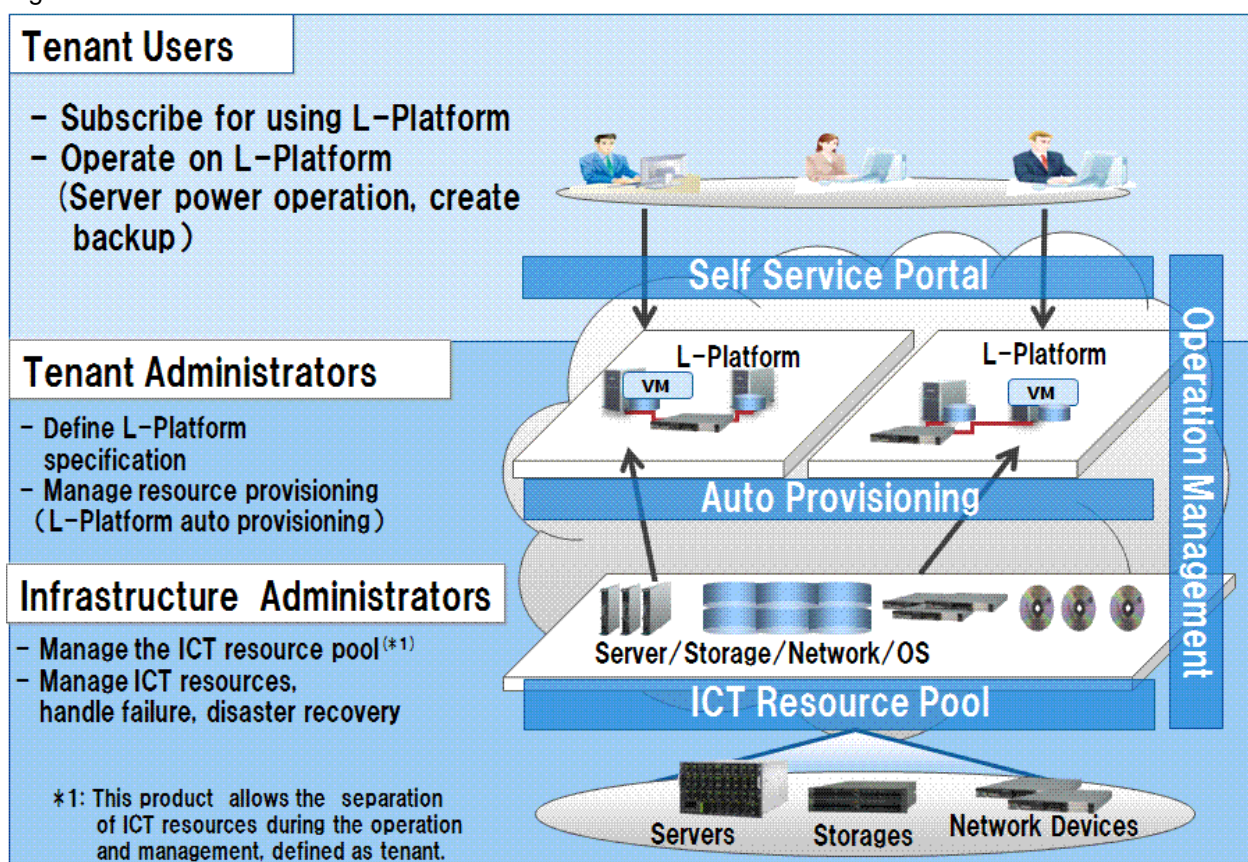
This chapter explains about this product's main features, users role, functionalities available for users, overview of the GUI display (ROR console).

2.1 The Product Main Features

This product mainly provides the following functionality.

In this product, the following functions are chiefly offered.

Figure 2.1 Product main features



- Effective ICT resource management using resource pool

Resource pool is a set of similar type resources such as physical servers, VM hosts, storages, network devices, OS images.

Effective resource management is realized by registering resources to the resource pool, allocate it from the pool when necessary, and release them back to the pool after their usage. Moreover, several resource pools can be created, depends on the customer's operation requirement (hardware type, security, asset management unit).

- System configuration and operation become easy using L-Server

L-Server is a resource defined using the logical specifications (number of CPUs, amount of memory, disk capacity, number of NICs, etc.) of the servers, and storage and network devices connected to those servers.

Allocating a resource automatically from the resource pool based on the L-Server specification makes it easier to construct and optimize server configuration.

During the operation, cloud users only need to know about L-Server specification. Users don't need to worry about the underlying infrastructure, hence management cost can be reduced, moreover, the physical and virtual server administration can be integrated.

- Multiple servers configuration becomes easy using L-Platform

L-Platform is a resource used for the consolidated operation and management of systems such as multiple-layer systems (Web/AP/DB) comprised of multiple L-Servers, storage, and network devices.

Using L-Platform makes it possible to configure and maintain multiple servers, storages or network devices easily.

Additionally, using L-Platform template makes it even easier to configure an L-Platform, at the same time, system operation becomes more simple with the consolidated specification.

- Self-service portal provides easy operation and approval process

Cloud users can apply for an L-Platform, modify the configuration and operate the system through the self-service portal (ROR console).

The approval process during the application or modification are automated.

- Resource isolation among the tenants

Tenant is a unit for the division and segregation of management and operation of resources based on organizations or operations. Resources of one tenant in L-Platform can be separated isolated from other tenant.

Resources pool which is only available for a specific tenant is called 'local pool'.

Resources pool shared among multiple tenants is called 'global pool'.

- Resource pool management with dashboard

This product provides dashboard display (ROR console) which can be used for monitoring the resource pool utilization status, displaying the performance and configuration of L-Server, anticipating the resource pool demand beforehand, and simulating VM guest reallocation.

- Usage metering capability

This product also provides the foundation for charging the tenants based on their L-Platform usage.

2.2 Resource Orchestrator User Roles and the Functions Available to Each User

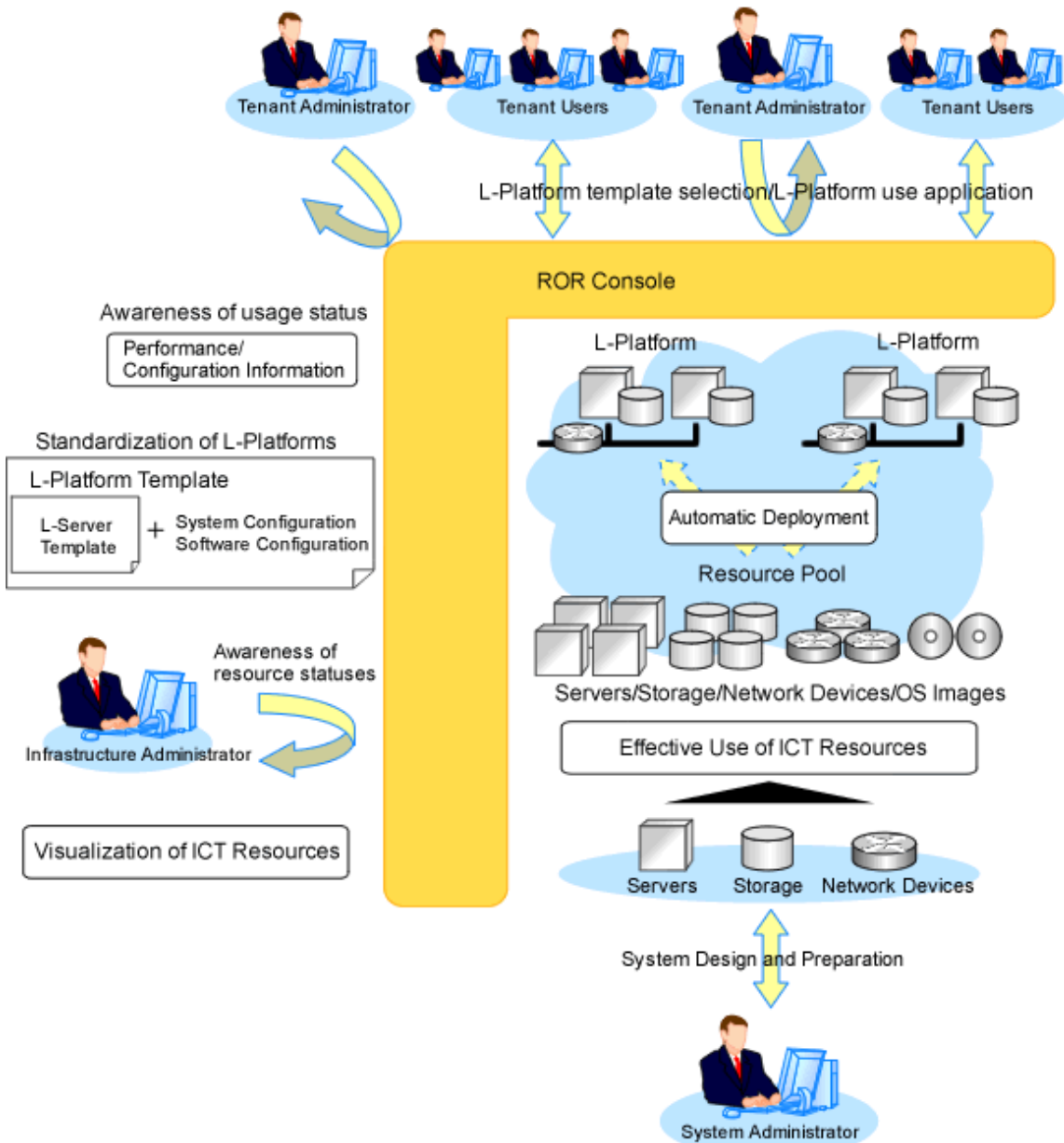
This section explains the Resource Orchestrator user roles and the functions available to each user.

Resource Orchestrator User Roles

The Resource Orchestrator user roles and the functions available to each user are as follow:

Refer to "5.1 Restricting Access Using Roles" in the "Design Guide CE".

Figure 2.2 Resource Orchestrator User Roles and the Functions Available to Each User



System Administrators

System administrators manage the operation of the entire system.

Administrator privileges for the operating system are required. Normally the roles of the infrastructure administrator and system administrator are performed concurrently.

Infrastructure Administrators

Resource Orchestrator provides a Logical Server (hereinafter L-Server) function which defines logical specifications (number of CPUs, memory capacity, disk capacity, number of NICs, etc.) for ICT resources within a private cloud (servers, storage, and networks).

Using Resource Orchestrator, infrastructure administrators collectively manage ICT resources in resource pools, while monitoring the load and performing addition, replacement, and maintenance of ICT resources when necessary.

Tenant Administrators

Tenant administrators prepare a pre-defined L-Platform environment template (L-Platform template) according to tenant user needs, and release it to tenant users.

In accordance with the application process, tenant administrators may also receive and review applications from tenant users.

Tenant administrators can check the usage status and monitor the operational statuses of tenant users.

Tenant Users

Tenant users can apply to use L-Platforms, and use L-Platforms configured according to their application.

When the authorization of the tenant administration department manager is required for an application, tenant users must request authorization from the manager in accordance with the application process.

Dual-role administrators

The administrators with both infrastructure administrator's and tenant administrator's role.

The functions available to the majority of Resource Orchestrator users

The functions available to the majority of Resource Orchestrator users are as follow:

Table 2.1 Available Functions

Main Function	Description	Target Users
Standardize L-Platforms (L-Platform templates)	Creates and publishes multiple logical configuration templates (L-Platform templates) for servers, storage, and networks.	Infrastructure Administrators or Tenant Administrators
Use L-Platforms	L-Platforms that meet one's needs can be used, as necessary.	Tenant Users
Viewing usage charges	L-Platform usage can be monitored as usage charge information. Usage charges are calculated based on the amount of L-Platform usage or charge information. The calculated usage charges can be viewed.	Infrastructure Administrators or Tenant Administrators
Safe use of ICT resources by tenants in multiple departments	ICT resources can be shared by multiple departments while maintaining security.	Tenant Administrators
Effective use of ICT resources	ICT resources can be managed as a collection of resources (resource pool). They can be used effectively, according to changes in usage.	Infrastructure Administrators
Visualization of ICT resources	The status of ICT resource usage can be easily checked from the dashboard (Pool Condition). The availability of resource pools can be monitored on the dashboard. Also, it can display L-Server and L-Platform performance data configuration information, demand forecasting for resource pools and perform simulations of VM guest reallocations.	Infrastructure Administrators or Tenant Administrators

2.3 Function list provided by ROR Console

This section explains the functions provided by ROR Console.

ROR Console has two parts: "operation windows for tenant administrators and tenant users" and "operation windows for infrastructure administrators".

- Windows intended for Tenant Administrators and tenant users

Windows intended for Tenant Administrators and tenant users are provided for L-Platform and user information operations. These windows are configured by Tenant Administrators themselves, and have been provided to reduce the Infrastructure Administrator workload.

- Windows intended for infrastructure administrators

Operation windows and dashboard windows intended for Infrastructure Administrators are also provided for L-Platform and user information operations. These windows are provided to enable Infrastructure Administrators to display and operate all L-Platform and tenant information and to access important information quickly.

The ROR Console displays are customized for the user's role, to provide appropriate functions to each user. For example, tabs that the current user cannot operate are not displayed.

The table below shows the functions provided by the ROR Console.

- Home

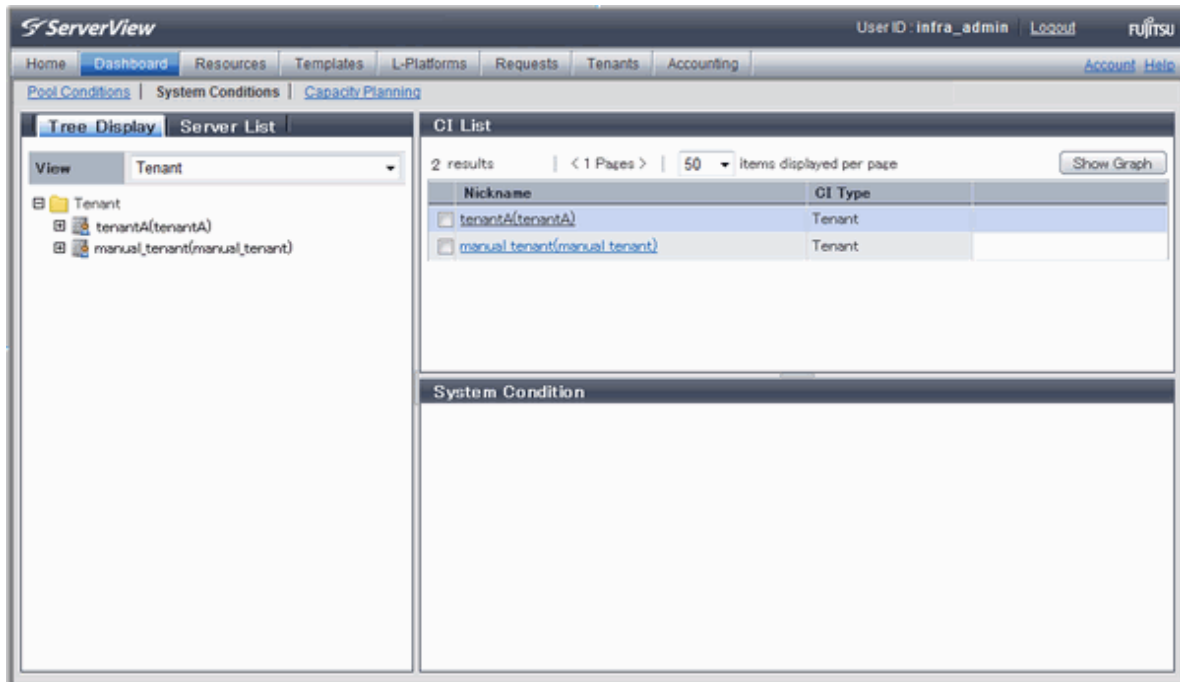
The window displayed immediately after login to the ROR Console. A function list and notifications are displayed.

Figure 2.3 Home



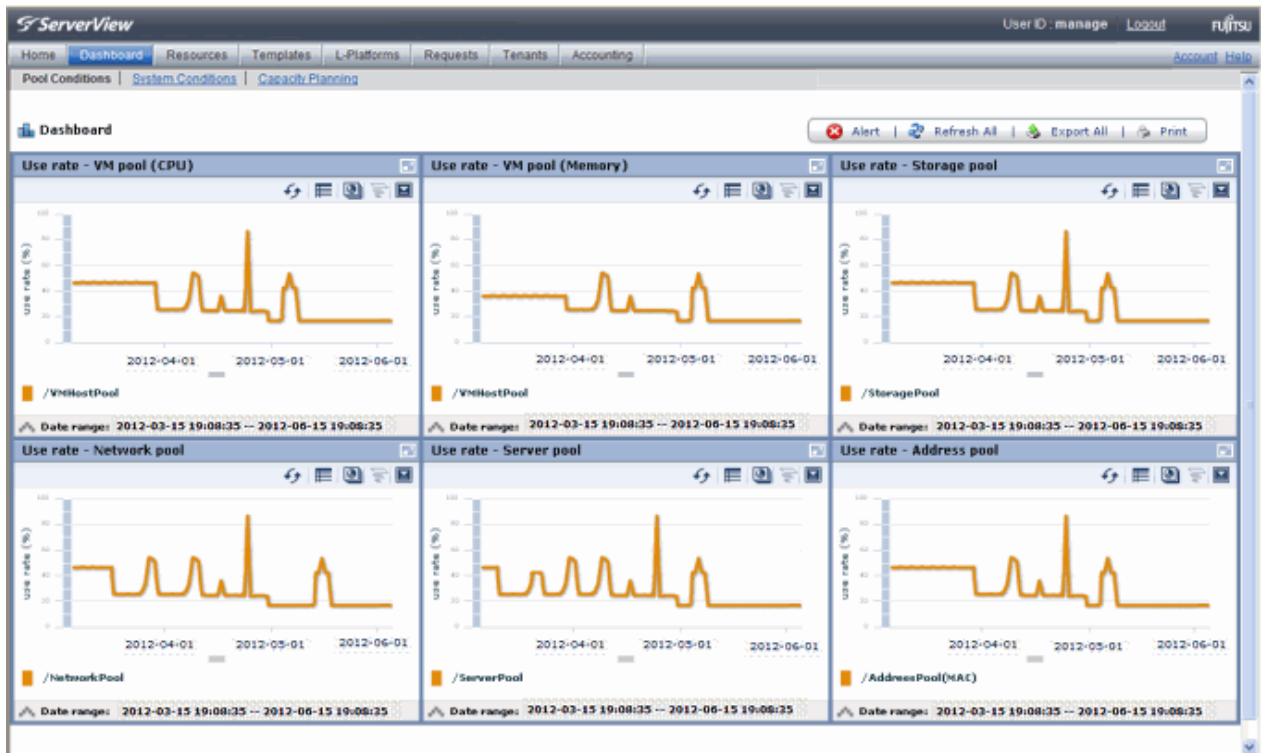
- Dashboard (Pool Condition)
- Displays the resource pool usage status.

Figure 2.4 Dashboard (Pool Condition)



- Dashboard (System Condition)
- Displays L-Server performance information and configuration information.

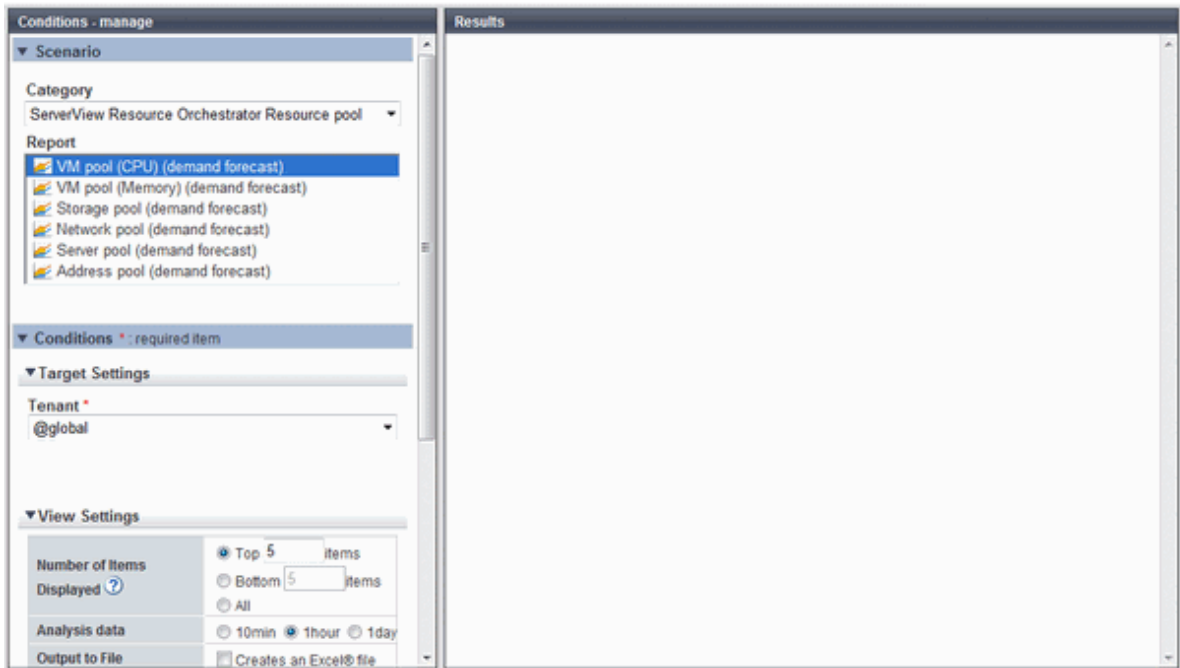
Figure 2.5 Dashboard (System Condition)



- Dashboard (Capacity Planning)

Anticipate the demand for resource pools and perform simulations of VM guest reallocations.

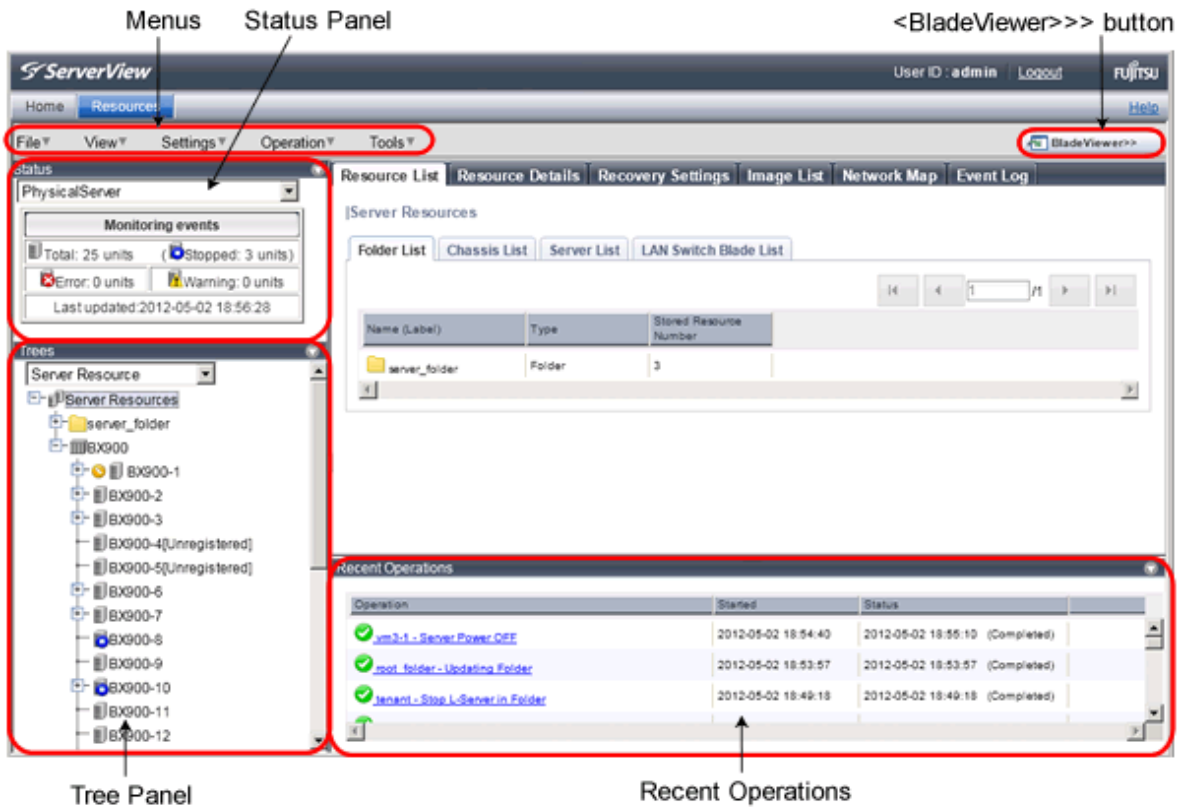
Figure 2.6 Dashboard (Capacity Planning)



- Resource

A window for managing the resource pool and the relationship of resources to L-Server.

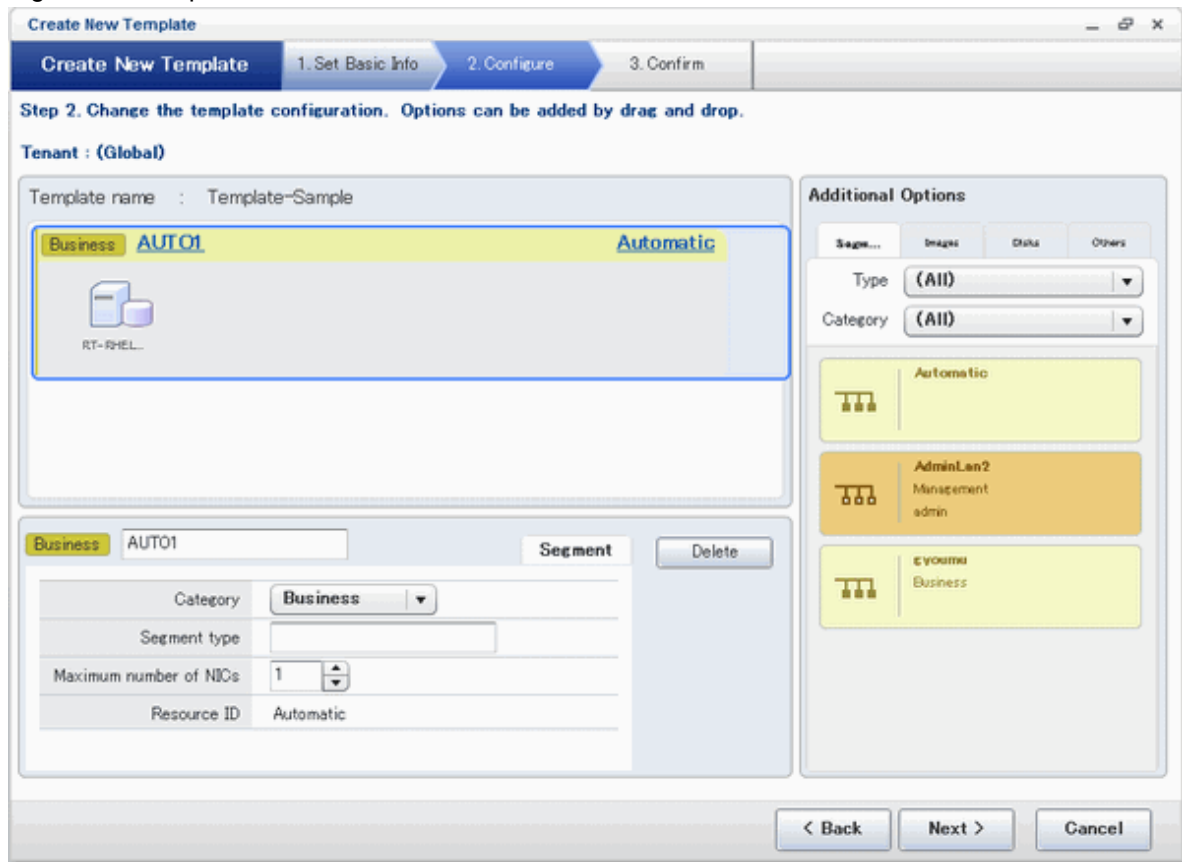
Figure 2.7 Resource



- Template

A window for managing L-Platform Templates.

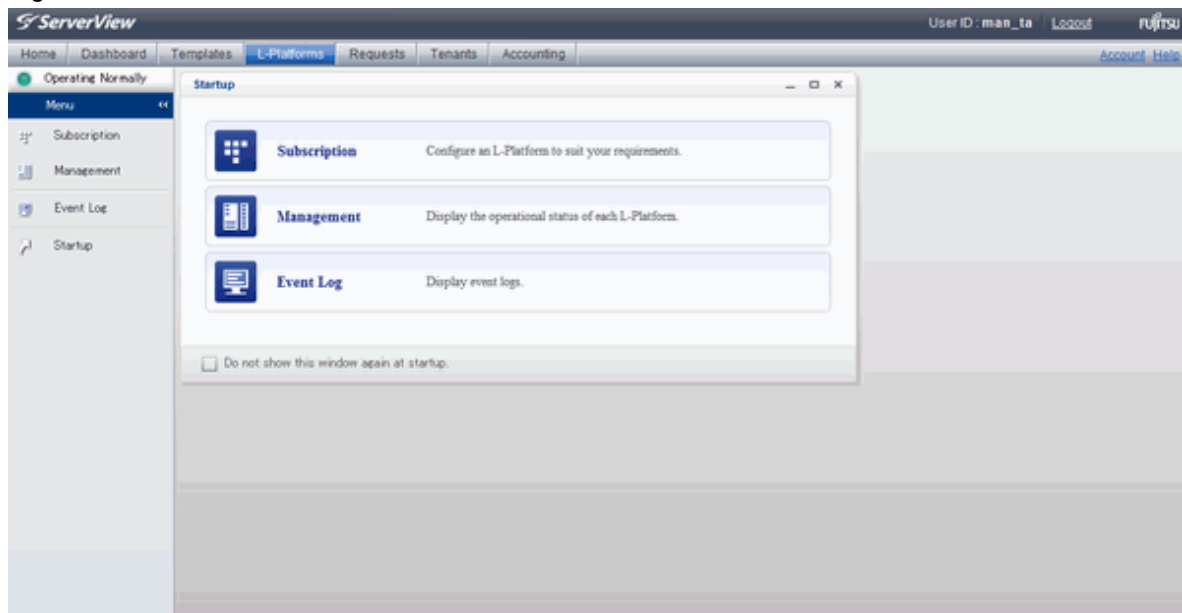
Figure 2.8 Template



- L-Platform

A window for managing L-Platform.

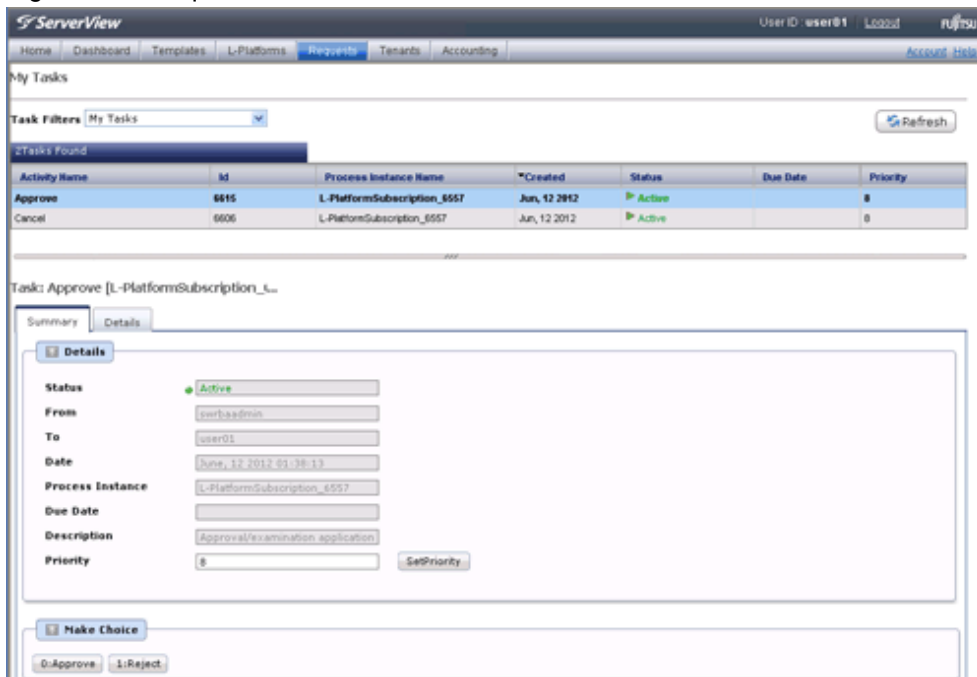
Figure 2.9 L-Platform



- Request

A window for assessing and approving L-Platform usage applications and other applications from tenant users.

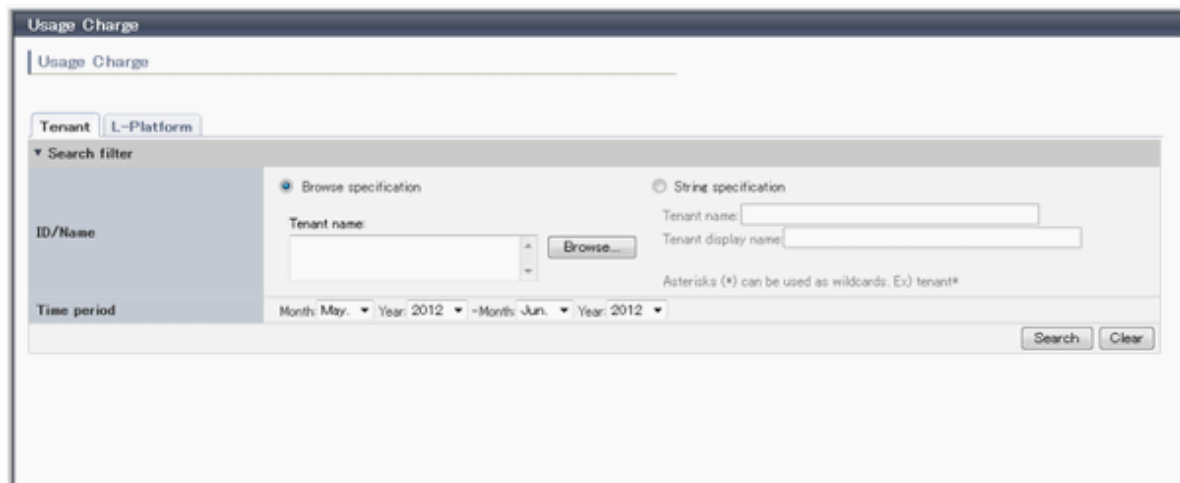
Figure 2.10 Request



- Accounting

Past information about usage charge is displayed.

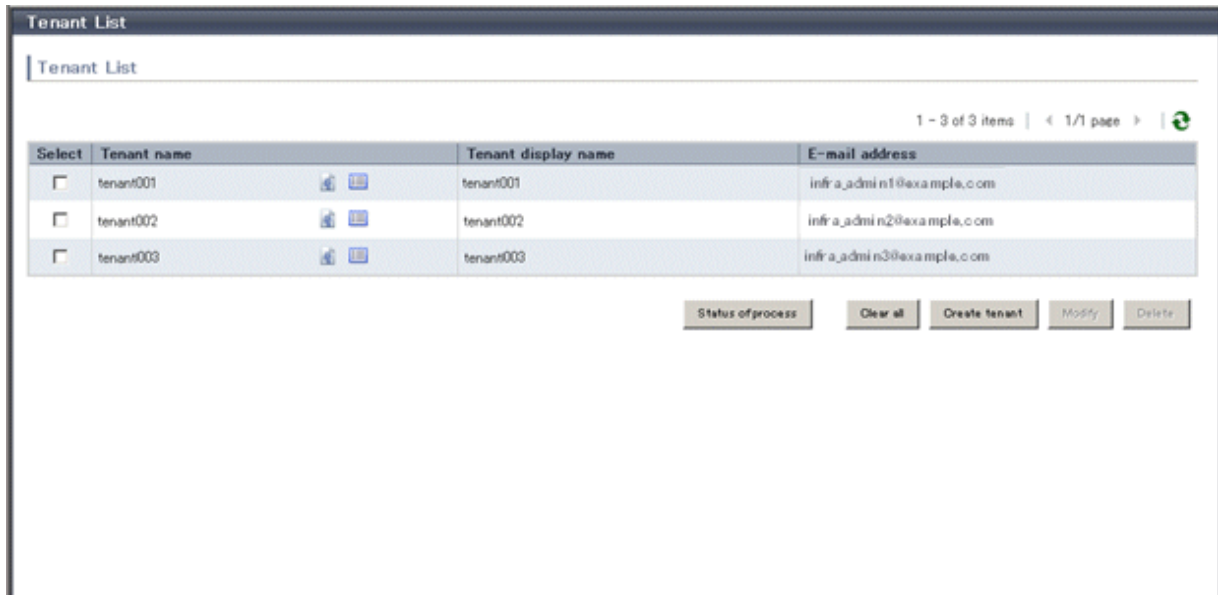
Figure 2.11 Accounting



- Tenant

A window for managing tenants and users belonging to tenants.

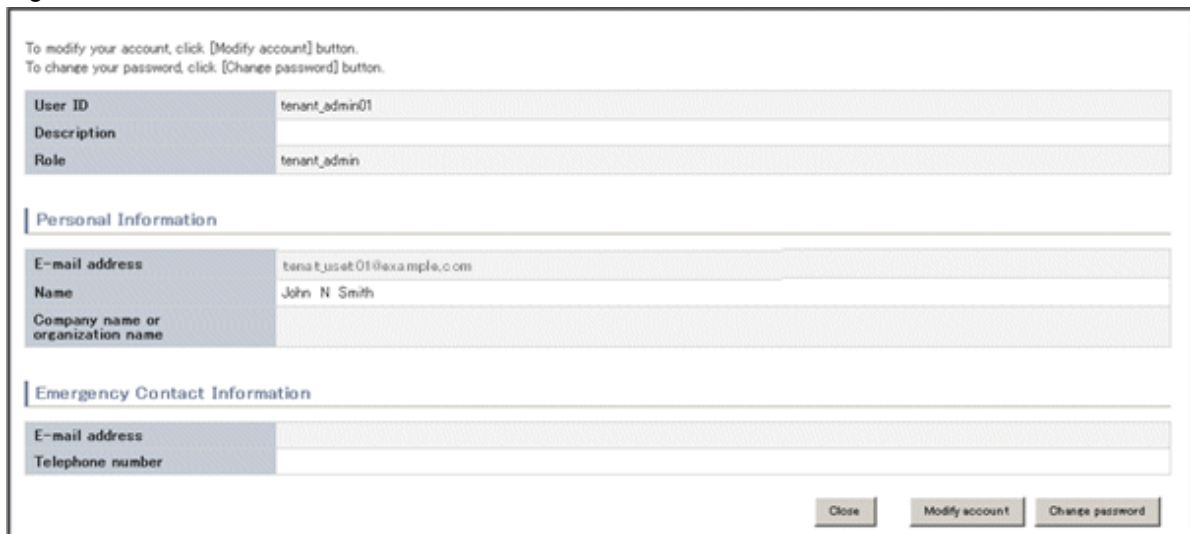
Figure 2.12 Tenant



- Account

A window for changing a logged in user's information and password.

Figure 2.13 Account



- Help

Displays this product's manual.

Figure 2.14 Help



The relation between the function that the ROR console offers and the user who can use it is as follows.

Table 2.2 Function list provided by ROR Console

Function	Infrastructure Administrator	Tenant Administrator	Tenant users
Home	Yes	Yes	Yes
Dashboard (Pool Condition)	Yes	Yes	No
Dashboard (System Condition)	Yes	Yes	Yes
Dashboard (Capacity Planning)	Yes	Yes	No
Resource	Yes	No	No
Template	Yes	Yes	No
L-Platform	Yes	Yes	Yes
Request	Yes	Yes	Yes
Accounting	Yes	Yes	No
Tenant	Yes	Yes	No

Function	infrastructure Administrator	Tenant Administrator	Tenant users
Account	Yes	Yes	Yes
Help	Yes	Yes	Yes

Yes: Displayed (However, some functions may not be displayed according to the user's access rights.)

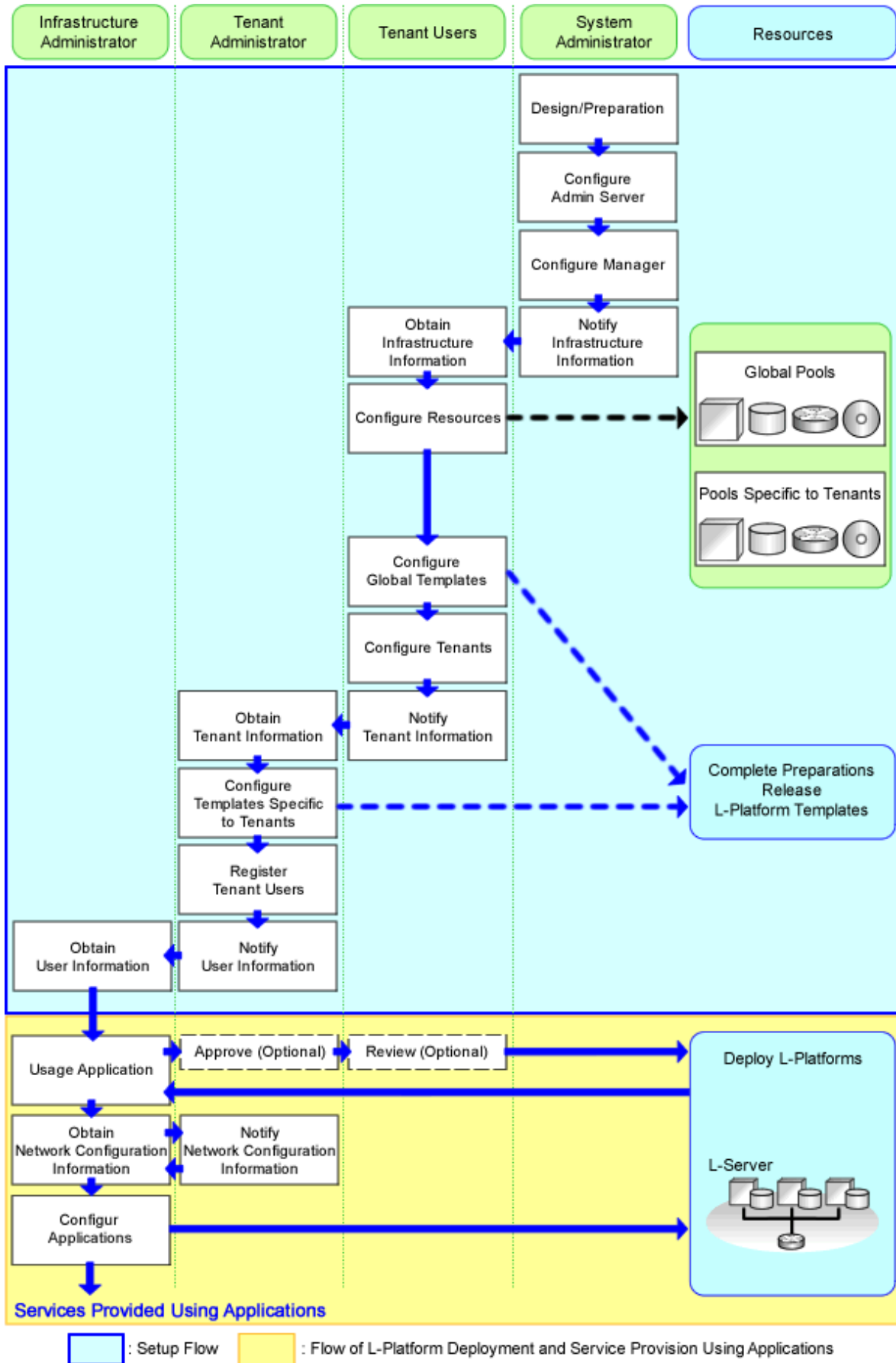
No: Not displayed

Chapter 3 Flow of Setup and Service Provision Using Applications

This chapter explains the overall flow of setup and Service Provision Using Applications.

In Resource Orchestrator, the flow of setup and services provision using applications is as shown below.

Figure 3.1 Flow of Setup and Service Provision Using Applications



The flow of overall setup operations is as follows:

Table 3.1 Flow of Overall Setup Operations

Operator	Operation Overview	Details	Reference
System Administrators	Design	<ul style="list-style-type: none"> - Designing the system configuration - Defining user accounts - Defining tenants and resource pools - Defining the server environment - Defining the network - Defining the storage environment - Deciding server virtualization software 	Refer to " Chapter 4 Flow of Setup for System Administrators ".
	Preparations	<ul style="list-style-type: none"> - Configuring the server environment - Configuring the network environment - Configuring the storage environment - Settings for server virtualization software - Installing and defining Single Sign-On - Deciding and configuring the power monitoring environment 	
	Software installation on admin servers	<ul style="list-style-type: none"> - Installing an OS - Installing required software 	
	Manager installation and configuration	<ul style="list-style-type: none"> - Installing the manager - Logging in to the ROR Console - License setup - Importing a certificate to a browser - Registering infrastructure administrators - Creating definition files 	
	Notification of infrastructure information	<ul style="list-style-type: none"> - Notifying the infrastructure information 	
Infrastructure Administrators	Obtaining infrastructure information	<ul style="list-style-type: none"> - Obtaining the infrastructure information 	Refer to " Chapter 5 Flow of Setup for Infrastructure Administrators ".
	Resource configuration	<ul style="list-style-type: none"> - Registering resources with Resource Orchestrator - Settings for the HBA address rename setup service (*1) - Installing software and registering agents on VM hosts (*2) - Registering resource pools to the global pool - Creating L-Server templates - Collecting and registering cloning images 	
	Global template configuration	Creating and Publishing L-Platform Template, and registration of the Usage Condition (*3)	
	Tenant configuration	<ul style="list-style-type: none"> - Creating tenants and tenant administrators 	
	Notification of tenant information	<ul style="list-style-type: none"> - User IDs and passwords for the tenant administrator - Information of tenants which can be used by the tenant administrator and resources allocated to tenants - Global template information - Notifying the information to configure on a firewall or a server load balancer (*3) 	
Tenant Administrators	Obtaining tenant information	<ul style="list-style-type: none"> - Obtaining available tenant and resource information - Obtaining the global template information - Obtaining the information to configure on a firewall or a server load balancer (*3) 	Refer to " Chapter 6 Flow of Setup for Tenant Administrators ".

Operator	Operation Overview	Details	Reference
	Configuration of a template specific to the tenant	- Copying and editing a template specific to the tenant - Releasing and retracting a template specific to the tenant	
	User registration	Tenant administrator/tenant user registration	
	Notification of the user information	- Notifying the user information	

*1: When using HBA address rename

*2: When using Server Virtualization Software

*3: When using Usage Condition

The flow of service provision using applications is as shown below.

Table 3.2 Flow of Service Provision Using Applications

Operator	Operation Overview	Details	Reference
Tenant Users	Obtaining the user information	- Obtaining the user information	Refer to " Chapter 7 Flow of Operations for Tenant Users ".
	L-Platform deployment	- Applying for L-Platform usage - Checking L-Platform usage application status	
	Configuration of applications	- Configuring applications	
	Service provision using applications	- Providing services using applications	

* Note: Necessary when using firewalls or server load balancers.

Chapter 4 Flow of Setup for System Administrators

This Chapter explains flow of setup for system administrators.

Flow of setup for System Administrator is as follows.

Table 4.1 Overview of Setup for System Administrators

Operation Overview		Tabs Used on the ROR Console	Reference
Design		-	Refer to " 4.1.1 Design for Resource Orchestrator Setup ".
Preparations		-	Refer to " 4.1.2 Preparations Resource Orchestrator Setup ".
Software installation on admin servers			Refer to " 4.2 Installing Software on Admin Servers ".
Manager installation and configuration	Software installation on managed servers	-	Refer to " 4.3 Manager Installation ".
	Login to the ROR Console	-	Refer to " 4.4 Login to the ROR Console ".
	License Setup	[Resource]	Refer to " 4.5 License Setup ".
	Configuration after manager installation	-	Refer to " 4.6 Configuration after Manager Installation ".
Notification of infrastructure configuration information		-	Refer to " 4.7 Notifying the Infrastructure Administrator of Infrastructure Configuration Information ".

- : There is no tab used with the ROR console.

4.1 Preparations for Setup and Design of Resource Orchestrator

This section explains Preparations for Setup and Design of Resource Orchestrator.

4.1.1 Design for Resource Orchestrator Setup

The following operations have to be performed to install this product.

- Defining System Configuration
For details, refer to "Chapter 4 System Configuration Design" of the "Design Guide CE".
- Defining User Accounts
For details, refer to "Chapter 5 Defining User Accounts" of the "Design Guide CE".
- Defining Tenants and Resource Pools
For details, refer to "Chapter 6 Defining Tenants and Resource Pools" of the "Design Guide CE".
- Defining the Server Environment
For details, refer to "8.1 Defining the Server Environment" of the "Design Guide CE".
- Defining the Network
For details, refer to "Chapter 9 Defining and Configuring the Network Environment" of the "Design Guide CE".
- Defining the Storage Environment
For details, refer to "10.1 Defining the Storage Environment" of the "Design Guide CE".
- Deciding Server Virtualization Software
For details, refer to "11.1 Deciding Server Virtualization Software" of the "Design Guide CE".

- Deciding and Configuring the Power Monitoring Environment

For details, refer to "13.1 Deciding the Power Monitoring Environment" of the "Design Guide CE".

4.1.2 Preparations Resource Orchestrator Setup

To setup this product, the System Administrators execute the following.

- Configuring the Server Environment

For details, refer to "8.2 Configuring the Server Environment" of the "Design Guide CE".

- Configuring the Network Environment

For details, refer to "Chapter 9 Defining and Configuring the Network Environment" of the "Design Guide CE".

- Configuring the Storage Environment

For details, refer to "10.2 Configuring the Storage Environment" of the "Design Guide CE".

- Settings for Server Virtualization Software

For details, refer to "11.2 Settings for Server Virtualization Software" of the "Design Guide CE".

- Installing and Defining Single Sign-On

For details, refer to "Chapter 12 Installing and Defining Single Sign-On" of the "Design Guide CE".

- Deciding and Configuring the Power Monitoring Environment

For details, refer to "13.2 Configuring the Power Monitoring Environment".

4.2 Installing Software on Admin Servers

Configure an admin server.

Perform installation of software on the admin server.

1. Install an OS
2. Install required software

4.3 Manager Installation

Install the manager. Configure the SSL communication environment settings for log in to the ROR console.

1. Install the manager

Install the manager of Resource Orchestrator.

For details, refer to "2.1 Manager Installation" in the "Setup Guide CE".

2. Configure SSL Communications on the ROR Console

Use SSL communications when accessing the ROR console from a browser.

When changing the certificate used for SSL communication from the test certificate set up by default to another certificate, refer to "Chapter 3 SSL Communication Environment Settings for the ROR Console" of the "Setup Guide CE".

4.4 Login to the ROR Console

Log in to Resource Orchestrator.

For details, refer to "Chapter 4 Login to the ROR Console" of the "Setup Guide CE".

4.5 License Setup

Set up licenses.

For details, refer to "Chapter 5 License Setup and Confirmation" of the "Setup Guide CE".

4.6 Configuration after Manager Installation

After the manager is installed, it sets it.

1. Register infrastructure administrators

The administrator role, which is the role that combines infrastructure administrator and tenant administrator roles, is assigned to the user created when installing Resource Orchestrator.

Resource Orchestrator can be configured and operated by this user or another user registered with the infrastructure administrator role, in order to prevent the operation of an L-Platform from being stopped by erroneous operations.

For details on how to register network resources, refer to "3.1 Registering User Accounts" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

2. Create Definition Files

Create the Definition Files.

Refer to "Chapter 8 Creating Definition Files" in the "Setup Guide CE".

4.7 Notifying the Infrastructure Administrator of Infrastructure Configuration Information

The system administrator notifies the infrastructure administrator of the details designed for Resource Orchestrator setup or the following infrastructure configuration information that has been configured in advance.

- Physical system configuration of hardware managed by the infrastructure administrator (servers, storage, and networks)
 - Connection information between devices (connection ports, connection types, etc.)
- Hardware information managed by the infrastructure administrator
 - Vendor name
 - Model name
- Resource information managed in Resource Orchestrator

To manage resources in Resource Orchestrator, it is necessary to register them.

For details, refer to "Registering Resources with Resource Orchestrator" in the "Setup Guide CE".

- Information such as segments or IP addresses used in an L-Platform

For details on the segments or IP addresses allocated to an L-Platform, refer to "9.1.3 Physical Network Design for the Public LAN and iSCSI LAN" in the "Design Guide CE".

- Configuration information when using a firewall or a server load balancer on an L-Platform
 - When using the firewall address conversion functions, the virtual IP address used in the function
 - When using the server load balancer, the virtual IP addresses used in the server load balancing functions

Chapter 5 Flow of Setup for Infrastructure Administrators

This Chapter explains flow of setup for Infrastructure Administrators.

Procedures differ depending on the type of L-Server which comprises an L-Platform or the server hardware being used, and the network configuration which is connected to an L-Server.

Flow of setup for Infrastructure Administrators is as follows.

Table 5.1 Overview of Setup for Infrastructure Administrators

Operation Overview	Tabs Used on the ROR Console	Reference
Obtaining infrastructure configuration information	-	Refer to " 5.1 Obtaining Infrastructure Configuration Information ".
Resource configuration	[Resource]	Refer to " 5.2 Configuring Resources ".
Global template configuration	[Template] [Usage conditions]	Refer to " 5.3 Creating and Releasing Global Templates and Registering Accounting information ". (*1)
Tenant configuration	[Tenant]	Refer to " 5.4 Configuring Tenants ".
Notification of tenant information	-	Refer to " 5.5 Notifying the Tenant Administrator of Tenant Information ".

*1: It is necessary to register accounting information when using accounting.

5.1 Obtaining Infrastructure Configuration Information

The infrastructure administrator obtains the information necessary for installing Resource Orchestrator from the system administrator.

5.2 Configuring Resources

Select the [Resource] tab of the ROR console and configure resource settings.

Procedures differ depending on the L-Server type or the server hardware being used.

5.2.1 When Creating Physical L-Servers

This section explains how to configure resources when creating physical L-Servers.

It is time when [Resource] setting when Physical L-Server is created using the blade server and Rack Mount or Tower Servers and the procedure is different.

The overview of [Resource] settings when Physical L-Server is created is as follows.

Table 5.2 Resource Settings when Creating Physical L-Servers

Settings	Details	When Using Blade Servers	When Using Rack Mount or Tower Servers
Resource Registration	Register VIOM	Yes	No
	Register storage management software	Yes	Yes
	Register chassis	Yes	No
	Register managed servers (within chassis)	Yes	No
	Register managed servers	No	Yes
	Register LAN switch blades	Yes	No
	Configure VLANs for LAN switch blades manually	Yes (*2)	No

Settings	Details	When Using Blade Servers	When Using Rack Mount or Tower Servers
	Register Network Device Resources	Yes (*1)	Yes (*1)
	Configure power monitoring devices	Yes (*1)	Yes (*1)
	Settings for the HBA address rename Setup Service	No	Yes
Resource Registration for Resource Pools	Register physical server resources to resource pools	Yes	Yes
	Register network resources to network pools	Yes	Yes
	Register network device resources to network pools	Yes (*1)	Yes (*1)
	Register virtual storage resources to storage pools	Yes	Yes
	Register disk resources to storage pools	Yes	Yes
	Register MAC addresses and WWNs to address pools	Yes	Yes
L-Server Template Creation	Create an L-Server template	Yes	Yes
Collection and Registration of Cloning Images	Create an L-Server for the Infrastructure Administrator	Yes	Yes
	Install OS's on physical L-Servers	Yes	Yes
	Install required software on physical L-Servers	Yes	Yes
	Install agents on physical L-Servers	Yes	Yes
	Install agents (dashboard function) on physical L-Servers	Yes	Yes
	Create and register cloning images	Yes	Yes

Yes: It is necessary

No: It is not necessary

*1: When using resources

*2: Necessary when not using automatic VLAN configuration for LAN switch blades.

5.2.1.1 When Using Blade Servers

The procedure when using blade server is as follows.

1. Resource Registration

Register the required resources in Resource Orchestrator.

For details, refer to "Chapter 9 Registering Resources with Resource Orchestrator" in the "Setup Guide CE".

2. Resource Registration for Resource Pools

Register resources in a resource pool.

For details, refer to "Chapter 12 Registering Resources to the Global Pool" in the "Setup Guide CE".

3. Create an L-Server Template

Create an L-Server template.

For details, refer to "Chapter 13 Creating L-Server Templates" in the "Setup Guide CE".

4. Create an L-Server for the Infrastructure Administrator

Create an L-Server for the infrastructure administrator.

For details, refer to "Chapter 14 Creating an L-Server for an Infrastructure Administrator" in the "Setup Guide CE".

5. Install software on physical L-Servers for infrastructure administrators, and register agents

Install software on the physical L-Server for infrastructure administrators created in step 4. and register agents.

a. Install OS's on physical L-Servers for infrastructure administrators

b. Install required software on physical L-Servers for infrastructure administrators

c. Install agents on physical L-Servers for infrastructure administrators

Refer to "2.2 Agent Installation" in the "Setup Guide CE".

d. Install agents (Dashboard Function) on physical L-Servers for infrastructure administrators

Refer to "2.3 Agent (Dashboard Function) Installation" in the "Setup Guide CE".

e. Register the Agent

6. Create and register cloning images

Create and register cloning images.

For details, refer to "Chapter 15 Collecting and Registering Cloning Images" in the "Setup Guide CE".

5.2.1.2 When Using Rack Mount or Tower Servers

The procedure when using Rack Mount or Tower server is as follows.

1. Resource Registration

Register the required resources in Resource Orchestrator.

For details, refer to "Chapter 9 Registering Resources with Resource Orchestrator" in the "Setup Guide CE".

Configure the HBA address rename service.

2. Resource Registration for Resource Pools

Register resources in a resource pool.

For details, refer to "Chapter 12 Registering Resources to the Global Pool" in the "Setup Guide CE".

3. Create an L-Server template

Create an L-Server template.

For details, refer to "Chapter 13 Creating L-Server Templates" in the "Setup Guide CE".

4. Create an L-Server for the Infrastructure Administrator

5. Create an L-Server for the infrastructure administrator.

6. For details, refer to "Chapter 14 Creating an L-Server for an Infrastructure Administrator" in the "Setup Guide CE".

7. Install software on physical L-Servers for infrastructure administrators, and register agents

Install software on the physical L-Server for infrastructure administrators created in step 4. and register agents.

a. Install OS's on physical L-Servers for infrastructure administrators

b. Install required software on physical L-Servers for infrastructure administrators

c. Install agents on physical L-Servers for infrastructure administrators

Refer to "2.2 Agent Installation" in the "Setup Guide CE".

d. Install agents (Dashboard Function) on physical L-Servers for infrastructure administrators

Refer to "2.3 Agent (Dashboard Function) Installation" in the "Setup Guide CE".

e. Register the Agent

8. Create and register cloning images

Create and register cloning images.

For details, refer to "Chapter 15 Collecting and Registering Cloning Images" in the "Setup Guide CE".

5.2.2 When Creating a Virtual L-Server

This section explains how to configure resources when creating virtual L-Servers.

The settings for resources when creating a virtual L-Server differ depending on the server virtualization software that is used.

5.2.2.1 Resource Registration

Register the required resources in Resource Orchestrator.

Resource registration when creating a virtual L-Server is as follows.

For details, refer to "Registering Resources with Resource Orchestrator" in the "Setup Guide CE".

Table 5.3 Resource Registration when Creating Virtual L-Servers

Settings	Details	When Using Blade Servers	When Using Rack Mount or Tower Servers
Resource Registration	Register VIOM	Yes (*1)	No
	Register VM management software	Yes (*2)	Yes (*2)
	Register Server Management Software	No	Yes (*3)
	Register storage management software	Yes (*4)	Yes (*4)
	Register chassis	Yes	No
	Register managed servers (within chassis)	Yes	No
	Register managed servers	No	Yes
	Register LAN switch blades	Yes	No
	Configure VLANs for LAN switch blades manually	Yes (*5)	No
	Configure power monitoring devices	Yes (*1)	Yes (*1)
	HBA address rename Settings	No	Yes (*1)
	Settings for the HBA address rename Setup Service	No	Yes (*1)
Register Disk Resources	Yes (*3, *6)	Yes (*3, *6)	

Yes: Required

No: Not required

*1: Necessary when using.

*2: Not necessary when using RHEL5-Xen, KVM or Solaris Containers.

*3: Necessary when using Solaris Containers.

*4: It is necessary to register storage management software when using RHEL5-Xen.

*5: Necessary when not using automatic VLAN configuration for LAN switch blades.

*6: Necessary when using RHEL-KVM.

5.2.2.2 Installing Software and Registering Agents on VM Hosts

Install software on VM hosts and register agents in Resource Orchestrator.

1. Install OSs on VM Hosts
2. Install Required Software on VM Hosts
3. Install Agents and Agents (Dashboard Function) on VM Hosts
Refer to "Agent Installation" in the "Setup Guide CE".
4. Register the Agent

5.2.3 Registering Resources to the Global Pool

Register resources to the global pool.

The overview of registration of resources to the global pool when creating a virtual L-Server is as follows.

For details, refer to "Registering Resources to the Global Pool" in the "Setup Guide".

Table 5.4 Resource Registration in Global Pools when Creating Virtual L-Servers

Settings	VMware	Hyper-V	Oracle VM	RHEL5-Xen	KVM	Solaris Containers
Register VM host resources to VM pools	Yes	Yes	Yes	Yes	Yes	Yes
Pre-configure network resources	No	No	Yes	Yes	Yes	Yes
Register network resources to network pools	Yes	Yes	Yes	Yes	Yes	Yes
Register virtual storage resources to storage pools	Yes	Yes	Yes	Yes	No	No
Register disk resources to storage pools	No	No	No	No	Yes	Yes
Register MAC addresses to address pools	No	No	No	Yes	Yes	No

Yes: Required

No: Not required

5.2.4 Creating L-Server Templates

Create an L-Server template.

For details, refer to "Creating L-Server Templates" in the "Setup Guide CE".

5.2.5 Creating and Registering Cloning Images

Create a cloning image and register it in Resource Orchestrator.

1. Create an L-Server for the Infrastructure Administrator

Create an L-Server for the infrastructure administrator.

For details, refer to "Creating an L-Server for an Infrastructure Administrator" in the "Setup Guide CE".

1. Install Software on Virtual L-Servers for Infrastructure Administrators

Install software on the virtual L-Server for the infrastructure administrator created in step 1.

2. Create and Register Cloning Images

Create and register cloning images.

For details, refer to "[5.2.5 Creating and Registering Cloning Images](#)" in the "Setup Guide CE".



When using Solaris Containers, create cloning images using BladeLogic.

For details, refer to the BladeLogic manual.

5.3 Creating and Releasing Global Templates and Registering Accounting information

Create and release a global template and register the accounting information.

A global template is an L-Platform template which can be used for all tenants.

1. Create L-Platform templates using the [Template] tab of the ROR console.

For details, refer to "8.3.2 Creating New L-Platform Template" and "8.3.3 Copying L-Platform Template" in the "User's Guide for Infrastructure Administrators CE".

2. When using accounting, register the accounting information using the registration function of the product master maintenance command.

For details, refer to "15.3.1 Register Accounting Information".

3. Release L-Platform templates using the [Template] tab of the ROR console.

For details, refer to "8.3.6 Publishing and Hiding L-Platform Template" in the "User's Guide for Infrastructure Administrators CE".

5.4 Configuring Tenants

Create tenants, tenant administrators.

1. Create tenants

Create tenants.

For details, refer to "11.3 Creating a Tenant" in the "User's Guide for Infrastructure Administrators CE".

2. Create Tenant administrators

Create tenant administrators.

For details, refer to "11.7 Registering a User" in the "User's Guide for Infrastructure Administrators CE".

5.5 Notifying the Tenant Administrator of Tenant Information

The infrastructure administrator notifies the tenant administrator of the following tenant information.

- User IDs and Passwords for the tenant administrator
- Information of tenants which can be used by the tenant administrator and resources allocated to tenants
- Global template information

Chapter 6 Flow of Setup for Tenant Administrators

Operation by the tenant administrator is shown as below.

1. Obtaining tenant information

The tenant administrator obtains the information necessary for installing Resource Orchestrator from the infrastructure administrator.

2. Edit a Template Specific to the Tenant

Edit a template specific to the tenant.

A template specific to the tenant is an L-Platform template used only for that specific tenant.

When a template specific to the tenant is required, edit the template specific to the tenant.

For details, refer to "7.3.3 Copying L-Platform Template" and "7.3.4 Editing L-Platform Template" in the "User's Guide for Tenant Administrators CE".

3. Release a Template Specific to the Tenant

Release a template specific to the tenant to the tenant user.

For details, refer to "7.3.6 Publishing and Hiding L-Platform Template" in the "User's Guide for Tenant Administrators CE".

4. Register the Tenant User

Register the tenant user.

For details, refer to "10.3 Registering a User" in the "User's Guide for Tenant Administrators CE".

5. Notify the Tenant User of Network Configuration Information

- Notify the tenant user of the segment information

The tenant administrator notifies the tenant user of the segment information specified in an L-Platform.

Chapter 7 Flow of Operations for Tenant Users

The details of operations by the tenant user until starting to provide services using applications are as shown below.

1. Apply for L-Platform Usage

Apply for L-Platform usage.

For details, refer to "5.2 Subscribe to an L-Platform" in the "User's Guide for Tenant Users CE".

2. Check L-Platform Usage Application Status

Check L-Platform usage application status.

For details, refer to "5.3 L-Platform Management" in the "User's Guide for Tenant Users CE".

3. Configure Applications

Configure applications.

4. Provide Services Using Applications

Provide services using applications.