IIJ GIO EU Service

Service Specifications

Oct. 20, 2014 Version 1.0

IIJ
Internet Initiative Japan

Internet Initiative Japan, Inc.

Document Structure

■ Service Specifications

| Service specifications

This document describes the service specifications of the IIJ GIO EU Service.

| Document Structure

The Service Specifications consists of the following materials:

Category	Description
Service Specifications	List of common specifications shared by IIJ GIO EU Service Base Server, Virtualization Platform, Network Add-On.
Base Server Service Specifications "V Series / X Series Edition"	Service Specification provided by Virtual Server Unit or Physical Server Unit from IIJ-owned Server Resources
Virtualization Platform Service Specifications "VW Series Edition"	Service Specification provided to you on each VMware ESXi Base itself from IIJ-owned Server Resources
Network Add-on Service Specifications	Service Features and Specifications of Network used from Base Server or Virtualization Platform

This document describes the common specifications for base servers, virtualization platform and network add-on only. For detailed information, refer to individual service specifications.

IIJ GIO EU Service

Contents

Service Outline

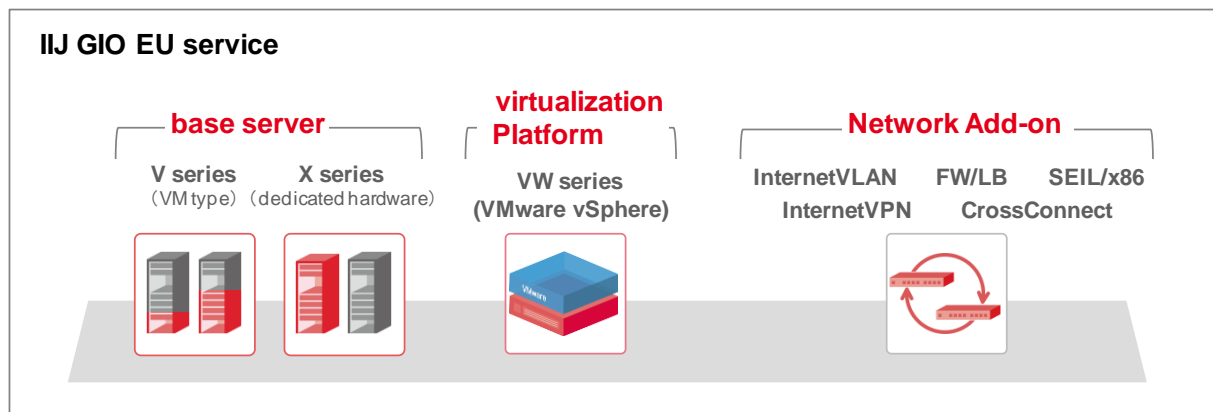## ■ IIJ GIO EU Service Outline

| IIJ GIO EU Service overview

IIJ GIO EU Service is a cloud IaaS service, whose server resources and add-on services are owned and provided by IIJ Europe (here in after "IIJ"). In addition to providing Internet access, IIJ also provides access services for closed networks. The base servers, which are the foundation of the service, can be either virtual or physical servers, or a combination of both. The virtualisation platform is VMware ESXi service which enables customer flexibility and construction of private clouds in combination with their existing systems.

| IIJ GIO EU Service structure

The IIJ GIO EU Service consists of the following components:

- Base servers
- Virtualization Platform
- Network add-ons

IIJ GIO EU service

base server

V series
（VM type）

X series
（dedicated hardware）

virtualization Platform

VW series
(VMware vSphere)

Network Add-on

InternetVLAN　　**FW/LB**　　**SEIL/x86**
InternetVPN　　**CrossConnect**

This document describes the common specifications for base servers, virtualization platform and network add-ons. For detailed information, refer to the individual service specifications.

■ Terminology

Terms	Description
Service Code	ID for verification purpose at IIJ GIO Global Support Center Reception
Virtualisation	Virtualisation is the technique of flexibly dividing and integrating the resources that computer systems are composed of, regardless of their physical structure. Through virtualisation, it is possible to do things such as including one physical cable in multiple networks or dividing one physical server into multiple logical virtual servers.
Cloud Cloud computing	Cloud computing is a new way of using computers centered around the Internet, in which various resources on a network can be used regardless of their physical location.
ICU	ICU is an abbreviation for IIJ Computing Unit, which is IIJ's proprietary indicator for comparing CPU performance. 24 ICUs are equivalent to Xeon processors (6 core).x 2.
NIC	NIC is an abbreviation for network interface card, which is an expansion card used for accessing networks, with uses that include accessing local area networks (LANs).
HaaS	HaaS is an abbreviation for hardware as a service, in which hardware, including servers, storage, and network equipment, is used over the Internet as a service. It is possible to use only the hardware that is needed only when it is needed, without having to own any hardware assets.
IaaS	IaaS is an abbreviation for infrastructure as a service, in which infrastructure for operating systems is used over the Internet as a service. With IaaS, infrastructure—including data center facilities, networks, and OS and virtualization infrastructure—can be used as a service. An integrated HaaS/IaaS service is also available.

IIJ GIO EU Service

■ Information to Be Provided by the Customer

| IIJ GIO EU Service Configuration Sheet

● Contract information

Quantity and specific IIJ GIO EU Service components that the customer desires.

● Administrator detail (Min 1 person, Max 3 persons)

Administrator's details, e.g. telephone number, email address, etc. to be used when contacting IIJ GIO Global Support Center.

■ Information Provided to the Customer

| Contract Server/Platform Account Details

 You will be provided with account details to be used when accessing your contracted server/platform.

| IIJ GIO EU Service Web Portal Access

Documents given to you will also be made available on the Web Portal. You will be given Account Info (ID, Password) for accessing each respective portal.

| Service Code

You will be supplied with a unique code for distinguishing service component or components that you have contracted. It will be used for identification purposes when authenticating your contract via the IIJ GIO Global Support Center.

| User's guide

You will be provided with necessary Guidebooks for using Base servers/Platforms.

Service Terms and Conditions

■ Terms and Conditions

In order to use the IIJ GIO EU Service, the customer needs to sign a base server or a virtualisation platform contract. Signing up for Network Add-Ons alone, is prohibited..

■ Base servers

The customer has to sign a IIJ GIO EU Service base server contract.

| Internet VLAN

In order to run Internet Connection on the Base Server, you must have a contract for Internet VLAN. Furthermore, if you are going to buy any Network Add-Ons (Virtual FW, Virtual FW+LB, Internet VPN and SEIL/x86), you will also be required to sign a contract for Internet VLAN.

* When customers utilise Base Server in a private network with connection to a collocation rack through Network Add-on Cross Connect, Internet VLAN is not required.

| Private VLANs

2 Private VLANs (Private VLAN1 and Private VLAN2) are included in the Base Server contract. Private VLANs are used for communication between multiple base servers or Network Add-ons.

| Monitoing and administration VLAN

This VLAN is included in the base server contract and is used when you have separate contracts for Monitoring Service and Operation Service.

This VLAN is not for customer use. It is as well as the operating path during applications, changes or termination of Base Server, and not for Customer Service Communication uses.

| Base Server Configuration Outline
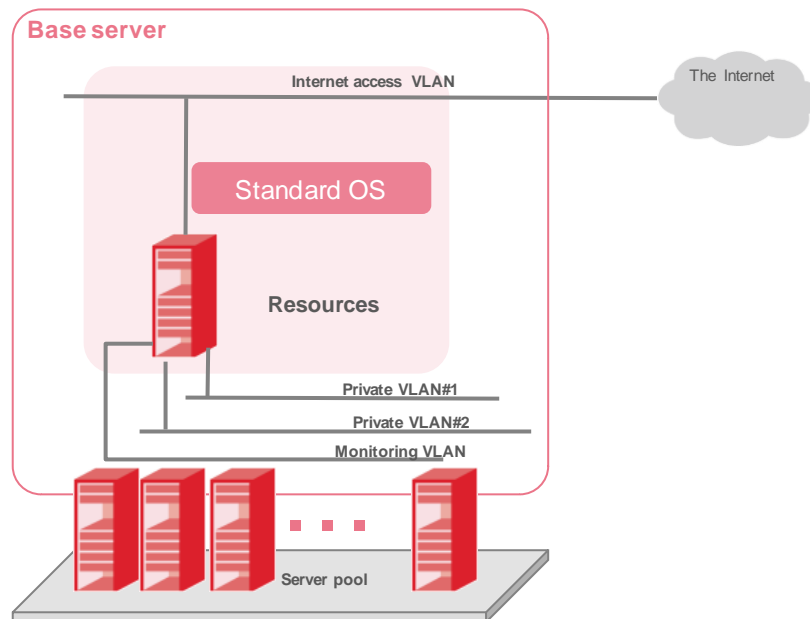
■**Virtualization Platform**

For the use of IIJ GIO EU Virtualization Platform service, refer to the IIJ GIO EU service Virtualization Platform service specification document.

Feature Specifications

■ Internet Protocol

For IIJ GIO EU Service, only IPv4 is available. IPv6 support may be provided in future versions of the service. For more information, please contact your IIJ Sales Representative.

■ DNS Cache server

IIJ GIO EU Service series (as shown below) may use IIJ's DNS Cache Servers.

- □ Base Server
- □ Virtualization Platform VW Series
  - ● Virtual Machine that you have constructed

| Terms and Conditions

You must subscribe to Internet VLAN in order to utilise IIJ's DNS Cache server.

| DNS Cache server IP ADDRESS

The IP address of the DNS Cache Server is provided by IIJ as shown below:

220.100.131.164

Please refer to the User guide on how to set up DNS Server to the Base Server and VM on Virtualization Platform..

| Notes regarding DNS Cache Server

- □ It is possible to use non-IIJ DNS Cache servers.
- □ IIJ's DNS Cache Server IP addresses are subject to change. Please note any change of IP address for DNS Cache servers will be the responsibility of the customer.

■ Reverse DNS

- ● Reverse DNS registration can be provided by IIJ for the Network Add-ons shown below:Internet VLAN
- ● Internet VLAN/VW

| Terms and Conditions

| You must subscribe to Internet VLAN or Internet VLAN/VW in order to utilise IIJ's Reverse DNS function. Notes regarding entry of Reverse DNS

- When customers wish to use the Reverse DNS function, they must complete the FQDN section of the configuration sheet. Use of non-IIJ DNS servers for the purpose of Reverse DNS is prohibited.
- All Global IP addresses provided by Internet VLAN are registered with default PTR records.

■ NTP server

IIJ GIO EU Service series (as shown below) may use IIJ's NTP Servers.

- Base Server
- Virtualization Platform VW Series

| Terms and Conditions

| You must subscribe to Internet VLAN in order to utilise IIJ's NTP Server. NTP Server IP Address

The IP address of the NTP Server is provided by IIJ as shown below:

220.100.131.164

Please refer to the User guide on how to set up NTP Server to the Base Server and VM on Virtualization Platform.

| Notes with regarding to NTP
-
- It is possible to use non-IIJ NTP servers.
- IIJ's NTP Server IP addresses are subject to change. Please note any change of IP address for the NTP servers will be the responsibility of the customer.

Quality & Warranty

■ Service Quality Assurance and Warranty Limitation

IIJ GIO EU Service Quality Assurance and Warranty Limitation are as follows.

Feature		Quality Assurance	Warranty Limitation
Base Server			
	V Series	We ensure that the Hypervisor which runs the Base Server has an operating rate of above 99.99%. ●	The following do not qualify as non-operational time of the Hypervisor. ● Software installed in the Base Server e.g. OS, Middleware or Application.Shutting down of the Base Server OS due to negligence or with intension. ● vSphere WebClient stops working.
	X Series	Not specified	-
Virtualization Platform		Not specified	-
Network Add-On		Not specified	-
Operation Monitoring		Not specified	-

| Operating rate

Operating rate is calculated using the following formula.

$$\text{Operating Rate (\%)} \ = \ \left(\ 1 - \frac{\text{Total non-operating time in a month (min) *}_{1)}}{\text{Total time in a month (min) *}_{2)}} \ \right) \ \times \ 100$$

※The obtained value will be rounded down from the third decimal place.

※Any loss of service relating to Monitoring Center shall be treated as non-operational hours. However, this only applies if we receive a report from you detailing any outages that have occurred.

※1）Non-operating time less than 1 minute per incident will be rounded down.

　 e.g.: 30 seconds non-operating time for ten times is calculated 0 minutes as monthly non-operating time.

ex: 1 and half minutes non-operating time for ten times is calculated 10 minutes as monthly non-operating time.

※2) Total number of days in that particular month multiplied by 1,440 (60 min × 24 h)

| Warranty Limitation

The Warranty Limitation for all components are as follows:.

- Upon using IIJ GIO EU Service, the Communication Routes used (including but not limited to Internet, Closed networks, private branch line, and dial-up lines, as well as communication devices for controlling them), are not covered under Quality Assurance unless explicitly specified as being covered.
- The following are not considered as non-operational.

  - Non-operation due to planned or emergency maintenance which is described in next chapter.
  - Non-operation due to Service Provision Cessation or Usage Restriction due to outstanding charges.
  - Non-operation due to matters referreed to Section 4 (Customer's Responsibilities)」of『 IIJ EU Application Service T's & C's』.

- Subscribers shall not do all, but not limited to, following matters.

  - Leave the Base Server infected by Computer Virus or unauthorized access resulting in high volume of traffic.
  - Sending out Multicast or Broadcast Communication Packets, without taking measures to avoid occurrence of loop in switching and routing of Communication Packets, thus causing a reoccurrence of further loops.
  - Exploiting security vulnerability to gain unauthorized access to IIJ Service Amenities, or to attempt to stop or degrade any features.
  - Usage of any hardware or software for the purpose of testing the performance of IIJ Services against high volume of traffic..

- Non-operation associated with force majeure
  Force majeure is inclusive but not limited to the following examples.

  - social unrest, such as War, insurgency, terrorism, and riots
  - natural disasters such as earthquake, tsunami, volcanic eruption, lightning, floods, snowfall, and falling rocks.
  - Obstruction of business such as DoS Attack (Denial of Service attack)
  - Unauthorized Access

■ Reduced Fees Applied In Case Of Service Unavailability

IIJ GIO EU Service Reduced Fees apply in cases of Service Unavailability as specified below.
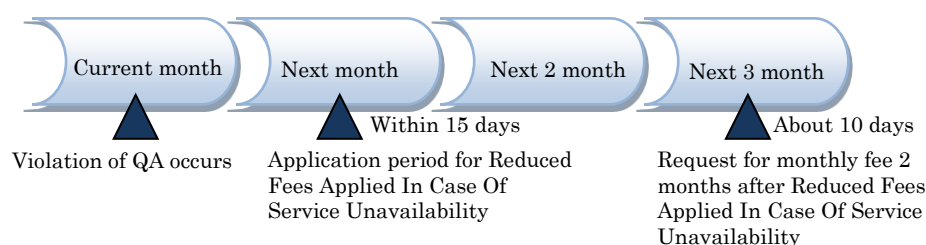
Conditions for Reduction

Application	Application is required.
Method	Follow the format given by IIJ ※Please contact your IIJ EU sales rep. ● where the violation of QA occurred（Host Name） ● when the violation of QA occurred, the contents and some information that objectively proves it ※1) ※2)
Deadline	On 15th of the following month after the violation of QA ※If that day is a non-working day, it will be on next working day.
Examination of Content	IIJ will investigate whether or not there is any violation of QA in your submitted application. If it is found that there is a violation of QA, the following will be done.

Reduction Description	
Reduced Amount	10% of monthly fee at the time violation of QA occur on a component. ※3) ※ If the component comes along with Option Service, the fee for that Option Service is also included.
Reduction Applied	2 months after violation of QA occurs on a component.

※1 Inclusive of but not limited to Base Server System Log, Kernel dump, network interface Communication capture and your own Monitoring System Log. It also does not guarantee that these will be usable as information that unconditionally satisfies the requirement.

※2 When IIJ sends notification that shows indication of errors on Service Equipment and its impact on operation of the subscribed component, these may be usable as information that unconditionally satisfies the requirement.

※3 After violation has occurred, if the component is upgraded or terminated, and "Reduced Amount" exceeds "Reduction Applied", the latter will be taken as maximum amount over the former. The monthly fee other than that component cannot be taken to be "Reduction Applied".

Current month	Next month	Next 2 month	Next 3 month
▲	▲ Within 15 days		▲ About 10 days
Violation of QA occurs	Application period for Reduced Fees Applied In Case Of Service Unavailability		Request for monthly fee 2 months after Reduced Fees Applied In Case Of Service Unavailability

Support Specifications

■ IIJ GIO Global Support Center

The Global Support Center handles all enquiries on how to use the service by e-mail, except for emergency calls when the system is down. Support Center is available in both English and Japanese.

| Technical Issue Enquiry

Reception Hours	24 hours a day, 365 days a year
Contact Info.	E-mail: support@egb.iijgio.com
Enquiry about	Service specification Clarifying any Service Explanation Details Other technical enquiries
Languages Support	English, Japanese

| General Enquiry about this service

Reception Hours	24 hours a day, 365 days a year
Contact Info	E-mail: sales@egb.iijgio.com Contact an IIJ sales representative
Enquiry about	Changes, Termination, Request, Customized Orders. General enquiries
Languages Support	English, Japanese

| Required Information for Enquiry

Please provide the following information:

Required information	Your company name Your system administrator information Service Code

■ Emergency Contact

| Emergency Contact Reception Point for Subscribers

Please direct your queries to the Operation Management Personnel with whom you been assigned.

Reception Hours	24 hours a day, 365 days a year
Contact Info	Emergency phone contact For contact information, refer to the User's.
Enquiry About	Failures in service infrastructure
Languages Support	English, Japanese

■ Maintenance

| Planned maintenance

Planned maintenance will be conducted for the purpose of maintaining service quality and expanding, maintaining, and preserving equipment. For planned maintenance that will not result in service being suspended, no announcement will be made. If planned maintenance will impact use of the service, notification by e-mail regarding the scope of the impact will be sent two weeks prior to the contact e-mail address registered as the administrator. In addition, after the completion of the planned maintenance, an e-mail will be sent reporting the results to all customers who were sent e-mail notifications in advance.

| Emergency maintenance

If it is determined by IIJ EU that emergency maintenance is required for service equipment, IIJ EU may conduct emergency maintenance without prior announcement. In this case, customers will be notified by e-mail after the maintenance is conducted.

Emergency maintenance will be conducted in the following circumstances:

- When an emergency response is required for hardware failures even while service continues uninterrupted.
- When redundancy is lost due to service failure, and a suspension of service from multiple service failures that cannot be anticipated.
- When major security risks are discovered, and it is determined that an emergency response is necessary.
- When a security incident occurs, and an emergency response is necessary.

■ Precautions

- □ For security reasons, only pre-registered system administrators may contact GIO Global support center.
- □ Some or all functionality may be interrupted due to scheduled/emergency maintenance procedures.
- □ After accepting delivery of the service(s), the customer is responsible for all matters concerning security vulnerability.

Applying, Changing, and Canceling a Contract

■ From Application to First Use

The time from application to the launch of a service differs for each base server, virtualization platform, network add-on and monitoring & operation. Please refer to the specifications for each service for more details.

| Time taken before servicing

The time required for service provision does not include the day on which the corresponding request is received. The time period below represents the number of days from the business day following the day of receipt by IIJ of an application form that contains all the required items.
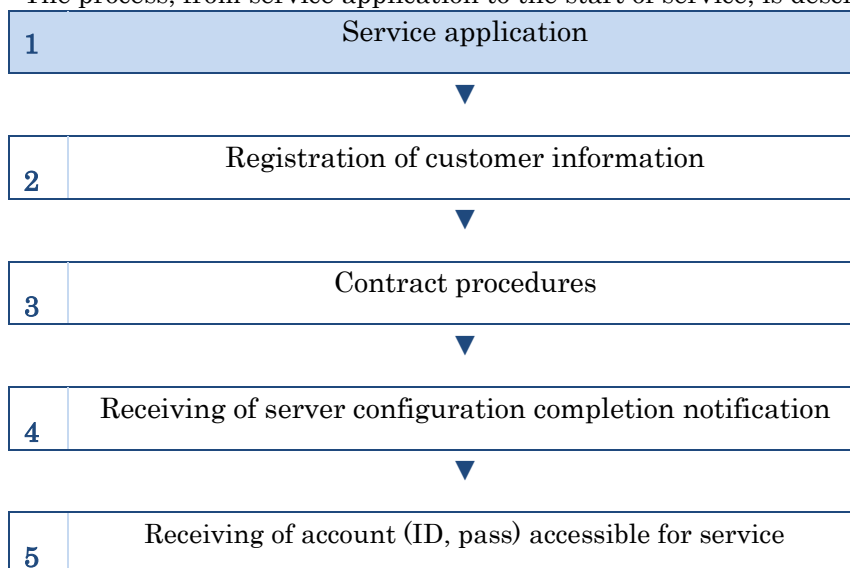The time required from the application for the IIJ GIO EU Service to the completion of registration is as follows:

Service	Contract type	Time until service provision
Basic contract / Service Registration	New	About two weeks

* The time required to start is an estimate based on our track record. It is not to be construed as a guarantee to deliver within the stated time period.

| The Flow Process of Service Start

The process, from service application to the start of service, is described below:

1	Service application

▼

2	Registration of customer information

▼

3	Contract procedures

▼

4	Receiving of server configuration completion notification

▼

5	Receiving of account (ID, pass) accessible for service

IIJ GIO EU Service

▼

6	Start of service

| Items sent to the customer

The following information will be sent to the customer via e-mail:

- □ IIJ GIO EU Service – Configurations Completion Notice
- □ IIJ GIO EU Service – Configuration Sheet
- □ IIJ GIO EU Service – User's guide
- □ IIJ GIO EU Service – each Service Specifications

| Information to the customer

Some documents are provided by IIJ document exchange web site (https://iij-gioeu.dg.dox.jp). Contracted customer is informed access account.

| Time taken for Changes or Termination of services

The time required to change/cancel a service varies by service and does not include the day of the request acceptance. The time period below represents the number of days following the receipt by IIJ of a complete application form.
The times required to change/cancel a service are as follows:

Service	Contract type	Time required for service change or cancellation
System failure contact information	Change	Three business days
IIJ GIO EU Service	Cancellation	Separately adjusted

* The above figure for time required is a performance target based on our track record. It is not to be construed as a guarantee to deliver within the stated time period.

■ Charging start time

The start of fee payment is from the service available day. Please refer to the specifications for each service for more details.

■ Minimum Contract Period

Only the Network Add-On Cross-Connect has minimum usage period of 1 year. The minimum usage period for other Services is 1 month.

■ Termination Process

- □ If terminating all Base Server, virtualization platform, network add-on and monitoring & operation contracts ("all contracts"), an application using our stipulated termination form is required.
- □ If all contracts are terminated, the times required for termination stated under "Time required for service change or termination of services" in the individual service specifications for base servers, virtualization platform, network add-on or monitoring & operation do not apply.
- □ After the day of termination, it will no longer be possible to log in to the service.

■ Required Reference Documents

IIJ GIO EU service Terms and Conditions

■ Warranty Limitation

This document is not intended to guarantee that the service will always be available for use.

Revision History

Version	Revision date	Revision content
1.00	2014/10/15	Newly created

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The service specifications or content of this manual may change without prior notification.

IIJ GIO EU Service – Service Specifications

Published by Internet Initiative Japan, Inc.

IIJ GIO
EU Service

Base Server Service Specification 【V·X Series】

2014/02/28 Ver. 1.0

IIJ
Internet Initiative Japan

Internet Initiative Japan Inc.

IIJ GIO EU Service

Content

Service Outline

■ Base Server Overview

Base Server (referred to hereinafter as 'the Service') provides IIJ's very own Server Resources, assigning you a Virtual Server Unit or Physical Server Unit with standardized OS.

■ Base Server Structure

| Component

Base Server comes together with the following components, depending on your Server Resource choice.

- □ **V Series**
  Providing Client Virtual Machine from Server (Hardware) in IIJ Server Pool
- □ **X Series**
  Providing Client Dedicated Server (Hardware) in IIJ Server Pool exclusively for Client's use

| Option Service

The Service comes together with the following Option Service for each component.

V Series

- □ IIJ GIO EU Service Additional Disk Option

■ Terminology

Term	Explanation
Service Code	ID for verification purpose at IIJ GIO Global Support Center.
Microsoft SPLA	SPLA stands for Service Provider License Agreement. It is a program that the Service Provider represents the Service user in obtaining Microsoft Product License. This is the only License Program which grants the right of use when the Service Provider uses Microsoft Software Product License with the purpose of providing Service to the User. In order to provide Service that uses Microsoft Software Product as a Service Provider, you need to use SPLA.
Virtualization	Technology that splits or combines Resources which form structure of Computer System flexibly unaffected by the physical structure. 1 Physical line can accommodate multiple networks as well as split 1single physical server into multiple logical virtual servers.
ICU	In short for IIJ Computing Unit. It is IIJ unique indicator for comparing CPU Performance. 24ICU is equivalent to Xeon Processor (6 Core) × 2.
NIC	In short for Network Interface Card. An expansion card for connecting to the network, used in connecting to Local Area Network (LAN).

■ Restriction

  ❑ Your System can be connected to the Base Server via Network. However, there may be some restriction due to Network Address System or System Configuration. For more information, please contact IIJ Sales Representative.

IIJ GIO EU Service

■ Information to be provided by you

| IIJ GIO EU Service Configuration Sheet

Required Configuration Information when using the Service
You will submit the following information listed in the configuration sheet.

- □ Base Server Grade (V10～V160,X240)
- □ OS Type
  - Windows Type
  - Cent OS Type
- □ Additional Disk Option Contract (if any) and Contract Disk Size (V Series)
- □ Private IP ADDRESS Information
- □ Default Gateway Information
- □ Additional Disk Option Account Information (V Series)

■ Information provided to you

| Management Gateway Account Info (Only when subscribing to V Series Contract)

Required Account Information for connection to Management Gateway

| Virtual Machine Control Panel Account Info (Only when subscribing to V Series Contract)

Required Account Information for logging in to the Virtual Machine Control Panel

## *Service Terms & Conditions*

■ Provisioning Conditions

□ When the server is provided, there is 1 account which has Administrator rights (root/Administrator) available to you. If other account is required when using the Base Server, please create and manage accounts as you like.

□ If you configure DNS name resolution (forward and Reverse) in the Base Server, you are required to do some configuration task.

□ You will set up your own NTP Server Information onto the Base Server.

□ Base Server with Windows OS uses SPLA to provide the License for Windows OS. For this reason, to use Microsoft Product License for the Base Server, in principle, requires you to use Microsoft SPLA that IIJ provides. If you wish to use your own license, please contact IIJ Sales Representative.

□ When using the commercial product, you are prohibited from committing the following. If you are caught for any of these following misconducts, IIJ withholds the right to force cessation upon the Base Server.

● Copy, modify, change and secondary usage of software and its license,

● Decryption, transfer and re-licensing of the software source code and its license by mean of reverse engineering, and disassembly

Feature Specification

■ V Series

| Feature Outlines

V Series has the Virtual Machine constructed onto IIJ's very own Server Pool, and with OS installed in it.
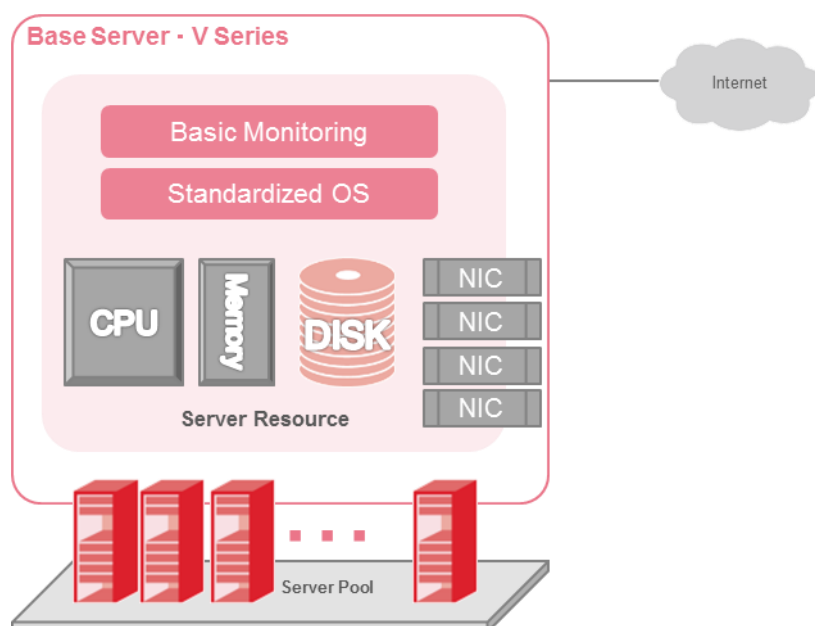
| V Series OS Type

V Series is comprised of the following Types according to the OS.

- □ Windows Type
- □ Cent OS Type

| V Series Windows Type Grade

OS provided by V Series Windows Type and its grades

OS	Version	Architecture	V10WS	V20WS	V40WS	V80WS	V160WS
Windows Server	2008 R2 With SP1 Standard Edition	x64	○	○	○	○	○

※OS License Fee is included in the cost of Base Server.
V Series Windows Type Grade and available Specifications are as below.

Grade	V10WS	V20WS	V40WS	V80WS	V160WS
Virtual CPU Cores	2	4	4	8	8
CPU Performance index (ICU)	1	2	4	8	16
Memory	1GB	2GB	4GB	8GB	16GB

Common Specification among grade of V Series Windows Type

Item	Specification
Base Disk	40GB(IP-SAN)
Additional Disk (Option)	Available from 100GB, 300GB, 500GB, 1TB up to 2 domains (IP-SAN)
OS	Windows Server 2008R2 With SP1 Standard Edition Multilingual User Interface Language Packs (EN,JPN)
NIC PORT	4 PORTs (1 for Internet Connection, 2 for Private Connection, 1 for Operation Monitoring)
Internet Connection	Available when subscribed to IIJ GIO EU Service Network Add-on "Internet VLAN"
Virtual Server Unit Upper bandwidth limit	1Gbps (common among all Virtual Servers. It does not guarantee the bandwidth)
Global IP ADDRESS	Available with subscription of IIJ GIO EU Service Network Add-on "Internet VLAN"
Private IPADDRESS	・Private VLAN which you can specify your own ADDRESS ・Monitoring VLAN is provided by IIJ
Operation Monitoring Feature	Available with subscription of IIJ GIO EU Service "Monitoring and Operation Service"

The below explains each following item.

Item	Specification
Virtual CPU Cores	The number of CPU Cores identified by Virtual Machine OS
CPU Performance Index (ICU)	IIJ's very own indication for comparing CPU Performance among different grades. ∗This value simply serves as a guideline. It does not guarantee the CPU performance.
Memory	Memory capacity recognized by Virtual Machine OS
Base Disk	Boot Disk Volume which is provided by standard in the Base Server. It comes with OS being already installed. It allows you to store data of below 40GB.
Additional Disk (Option)	Additional Disk Product Item. Your storable data volume will be less than the contracted capacity.
OS	OS Version already installed in the Base Disk. License Fee is included in the cost of Base Server. Standard Edition (WS) will be provided. By standard, it is provided in English.
NIC Port	Network Interface Number recognized by OS. It is the Upper Limit value of possible number connection with the VLAN
Internet Connection	Usage Terms and Conditions when using Internet Connection
Virtual Server Unit Upper bandwidth limit	Upper Limit Value of available band of a Base Server Unit ※This bandwidth is shared with other Base Servers. It does not guarantee the bandwidth.
Global IPADDRESS	Usage Terms and Conditions of Global IPADDRESS assigned to Virtual Network Interface
Private IPADDRESS	Usage Terms and Conditions of Private ADDRESS assigned to Virtual Network Interface
Operation Monitoring Feature	Usage Terms and Conditions when using Base Server Monitoring

∗By default, OS is in English. Its timing follows UTC and keyboard follows English KB. You may also change to Japanese. About how to make changes, please refer to "Usage Manual" given to you when making contract.

IIJ GIO EU Service

| V Series Cent OS Type Grade

OS provided in V Series Cent OS Type and each of its grades

OS	Version	Architecture	V10LC	V20LC	V40LC	V80LC	V160LC
Cent OS	6.4	x64 (64bit)	○	○	○	○	○

V Series Cent OS Type Grades and available specifications

Grade	V10LC	V20LC	V40LC	V80LC	V160LC
Virtual CPU Cores	2	4	4	8	8
CPU Performance index (ICU)	1	2	4	8	16
Memory	1GB	2GB	4GB	8GB	16GB

Common Specification shared among V Series Cent OS Type of different grades.

Item	Specification
Base Disk	40GB (IP-SAN)
Additional Disk (Option)	Available from 100GB、300GB、500GB、1TB up to 2 domains (IP-SAN)
OS	Cent OS 6.4
NIC PORT	4 PORTs (1 for Internet Connection, 2 for Private Connection, 1 for Operation Monitoring)
Internet Connection	Available when subscribed to IIJ GIO EU Service Network Add-on "Internet VLAN"
Virtual Server Unit Upper bandwidth limit	1Gbps (common among all Virtual Servers. It does not guarantee the bandwidth)
Global IP ADDRESS	Available with subscription of IIJ GIO EU Service Network Add-on "Internet VLAN"
Private IPADDRESS	・Private VLAN which you can specify your own ADDRESS ・Monitoring VLAN is provided by IIJ
Operation Monitoring Feature	Available with subscription of IIJ GIO EU Service "Monitoring and Operation Service"

The below explains each following item.

Item	Specification
Virtual CPU Cores	The number of CPU Cores identified by Virtual Machine OS
CPU Performance Index (ICU)	IIJ's very own indication for comparing CPU Performance among different grades. ∗This value simply serves as a guideline. It does not guarantee the CPU performance.
Memory	Memory capacity recognized by Virtual Machine OS
Base Disk	Boot Disk Volume which is provided by standard in the Base Server. It comes with OS being already installed. It allows you to store data of below 40GB.
Additional Disk (Option)	Additional Disk Product Item. Your storable data volume will be less than the contracted capacity.
OS	OS Version already installed in the Base Disk.
NIC Port	Network Interface Number recognized by OS. It is the Upper Limit value of possible number connection with the VLAN
Internet Connection	Usage Terms and Conditions when using Internet Connection
Virtual Server Unit Upper bandwidth limit	Upper Limit Value of available band of a Base Server Unit ∗This bandwidth is shared with other Base Servers. It does not guarantee the bandwidth.
Global IPADDRESS	Usage Terms and Conditions of Global IPADDRESS assigned to Virtual Network Interface
Private IPADDRESS	Usage Terms and Conditions of Private ADDRESS assigned to Virtual Network Interface
Operation Monitoring Feature	Usage Terms and Conditions when using Base Server Monitoring

∗By default OS is in English. Its timing follows UTC and keyboard follows English KB. You may also change to Japanese. About how to make changes, please refer to "Usage Manual" given to you when making contract.

V Series Upgrade and Downgrade

V Series can be upgraded or downgraded by applying for Contract Changes. You do not need to do anything after changing grade.
Your content within the Base Disk and extended disk is still maintained even after the upgrade or downgrade. During Upgrade or Downgrade, Server Stop may occur. Please stop your server after the application. Please be informed that if the server is operating during Upgrade or Downgrade, it will be forced stop immediately.

Notes with regards to V Series

When using the V Series Base Server, these are points to take note of.

- A connection between a Base Server and a Base Disk, as well as an Additional Disk, is made through IP-SAN (iSCSI). There is a possibility that IP-SAN is not able to perform as you expect while processing a high volume of Disk I/O due to the best effort of the IP-SAN Band.
- Base Server is provided to you with a Management Software (VMware Tools) already installed.
- When you connect your device in the Rack provided by IIJ Data Center Service with the V Series, you are required to subscribe to a "Cross-Connect Gateway ", an add-on network service provided by IIJ GIO EU Service. Also, you will need to have a device that comes with the L3 feature. Communication will be connected through your device. You cannot connect both with the same VLAN.
- In case there is hardware or software error occurring in this Service, and an error occurring to the hypervisor, your Virtual Machine will be forced to shut down and shifted to another hypervisor to be reactivated.
- When carrying out scheduled maintenance in this Service Component, your Virtual Machine will be shifted to other hypervisor by Live Migration feature.
- If it is detected that the Base Server that you contract generates a high volume of traffic to the level that hinders other Service Users, your traffic may be controlled to the level that will not cause any problems to the Service.

■ X Series

| Feature Outlines

X Series assigns dedicated server (hardware) from IIJ's very own Server Pool, and provides it with OS installed in it.
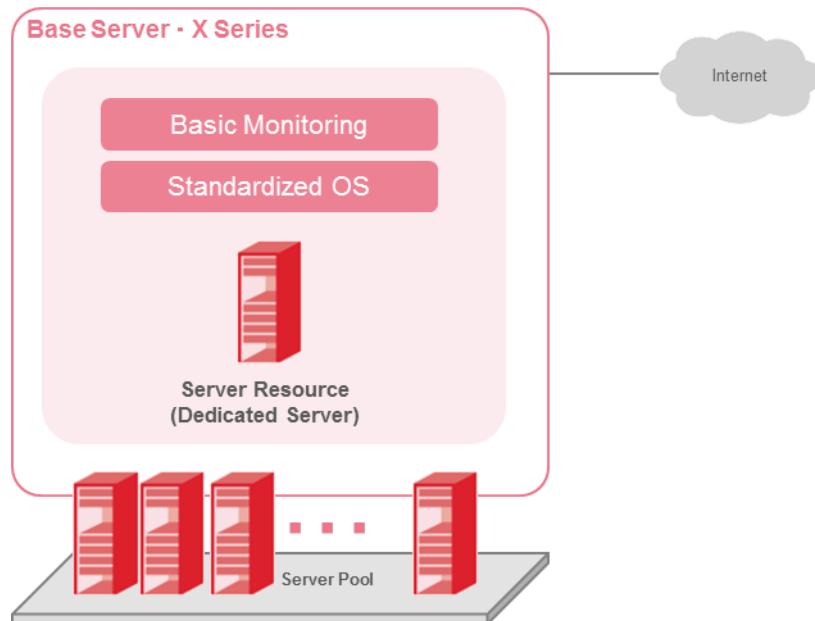
| X Series OS Type

X Series is comprised of the following Types according to the OS provided.

- □ Windows Type
- □ Cent OS Type

| X Series Windows Type Grade

OS provided by X Series Windows Type and its grade

OS	Version	Architecture	X240WS
Windows Server	2008 R2 With SP1 Standard Edition	x64	○

＊OS License Fee is included in the cost of Base Server.

Common Specification among respective grade of X Series Windows Type

Items	Specification
Base Disk	12
Additional Disk (Option)	48GB ∗Due to limit by Standard Edition, only up to 32GB is recognized.
OS	300GB(RAID1)
NIC PORT	Windows Server 2008R2With SP1 Standard Edition Multilingual User Interface Language Packs(EN,JPN)
Internet Connection	・6 Physical PORTs (2 are redundant by Bonding and the remaining 4 Ports not connected to network) ・4 Virtual PORTs (1 for Internet Connection, 2 for Private Connection, 1 for Operation Monitoring)
Virtual Server Unit Upper bandwidth limit	Available with subscription of IIJ GIO EU Service Network Add-on "Internet VLAN"
Global IP ADDRESS	1Gbps
Private IPADDRESS	Available with subscription of IIJ GIO EU Service Network Add-on "Internet VLAN"
Operation Monitoring Feature	・Private VLAN which you can specify your own ADDRESS ・Monitoring VLAN is provided by IIJ
Base Disk	Available with subscription of IIJ GIO EU Service "Monitoring and Operation Service"

The below explains each following item.

Items	Specifications
Virtual CPU Cores	The number of CPU Cores identified by OS
Memory	Memory capacity recognized by OS
Base Disk	Capacity of the boot disk provided as standard with Base Server, with OS already installed
OS	OS Version already installed in the Base Disk. License Fee is included in the cost of Base Server. Standard Edition (WS) will be provided. By standard, it is provided in English.
NIC Port	Network Interface Number recognized by OS. It is the Upper Limit value of possible number connection with the VLAN
Internet Connection	Usage Terms and Conditions when using Internet Connection
Server Unit Upper Limit Band	Upper Limit Value of available band of a Base Server Unit *This bandwidth is shared with other Base Servers. It does not guarantee the bandwidth.
Global IPADDRESS	Usage Terms and Conditions of Global IPADDRESS assigned to Virtual Network Interface
Private IPADDRESS	Usage Terms and Conditions of Private ADDRESS assigned to Virtual Network Interface
Operation Monitoring Feature	Usage Terms and Conditions when using Base Server Monitoring

*By default OS is in English. Its timing follows UTC and keyboard follows English KB. You may also change to Japanese. About how to make changes, please refer to "Usage Manual" given to you when making contract.

| X Series Cent OS Type Grade

OS provided in X Series Cent OS Type and its grade

OS	Version	Architecture	X240LC
Cent OS	6.4	x64	○

V Series Cent OS Type Grades and available specifications

Items	Specifications
Base Disk	12
Additional Disk (Option)	48GB
OS	300GB(RAID1)
NIC PORT	Cent OS 6.4 64bit
Internet Connection	・6 Physical PORTs (2 are redundant by Bonding and the remaining 4 Ports not connected to network) ・4 Virtual PORTs (1 for Internet Connection, 2 for Private Connection, 1 for Operation Monitoring)
Virtual Server Unit Upper bandwidth limit	Available with subscription of IIJ GIO EU Service Network Add-on "Internet VLAN"
Global IP ADDRESS	1Gbps
Private IPADDRESS	Available with subscription of IIJ GIO EU Service Network Add-on "Internet VLAN"
Operation Monitoring Feature	・Private VLAN which you can specify your own ADDRESS ・Monitoring VLAN is provided by IIJ
Base Disk	Available with subscription of IIJ GIO EU Service "Monitoring and Operation Service"

The below explains each following item.

Items	Specifications
Virtual CPU Cores	The number of CPU Cores identified by OS
Memory	Memory capacity recognized by OS
Base Disk	Capacity of the boot disk provided as standard with Base Server, with OS already installed
OS	OS Version already installed in the Base Disk.
NIC Port	Network Interface Number recognized by OS. It is the Upper Limit value of possible number connection with the VLAN
Internet Connection	Usage Terms and Conditions when using Internet Connection
Server Unit Upper Limit Band	Upper Limit Value of available band of a Base Server Unit ＊This bandwidth is shared with other Base Servers. It does not guarantee the bandwidth.
Global IPADDRESS	Usage Terms and Conditions of Global IPADDRESS assigned to Virtual Network Interface
Private IPADDRESS	Usage Terms and Conditions of Private ADDRESS assigned to Virtual Network Interface
Operation Monitoring Feature	Usage Terms and Conditions when using Base Server Monitoring

By default OS is in English. Its timing follows UTC and keyboard follows English KB. You may also change to Japanese. About how to make changes, please refer to "Usage Manual" given to you when making contract.

| Notes about X Series

When using X Series Base Server, please take note of the following.

- ❑ If there is any hardware failure, IIJ will carry out an error recovery. Some failures may take up some time before getting recovery.
- ❑ If Windows Type OS is Windows Server 2008 or later, you may install Hyper-V to have a hypervisor for providing Virtualization Environment but it is not supported.
- ❑ When you connect your device in the Rack provided by IIJ Data Center Service with the X Series, you are required to subscribe to a "local gateway connection", an add-on network service provided by IIJ GIO EU. Also, you will need to have a device that comes with the L3 feature. Communication will be connected through your device. You cannot connect both with the same VLAN.

☐ If it is detected that the Base Server that you contract generates a high volume of traffic to the level that hinders other Service Users, your traffic may be controlled to the level that will not cause any problems to the Service.

■ Initialization

In using this Service, IIJ will do the following initialization.

Component	Initialization
V Series、X Series	OS Configuration based on Configuration Sheet

■ Option Service

| Additional Disk Option

An Option Service to add on V Series Disk Space
You may add up to 2 Disk Spaces ranging between 100GB, 300GB, 500GB and 1TB.
For instance, you may mount 300GB and 500GB spaces which add up to volume of 800GB or 2 Disk Spaces of 1TB adding up to Disk Space of 2TB.

➢ Adding on Additional Disk
If during initialization of Base Server, your contract does not come together with an additional Disk, or with only 1 additional Disk, you may add on one more Additional Disk later on. One single Base Server may have up to a total of 2 Additional Disk Contracts.

➢ Additional Disk Change Contract Restriction
You can neither upgrade nor downgrade the Additional Disk.

➢ Additional Disk Termination.
You can also terminate Additional Disk Unit. However, once you terminate the Additional Disk, you will not be able to subscribe to that same Disk again. Please backup the data stored within it.

| Notes with regards to Additional Disk Option

When using Additional Disk Option, please take note of the following.

☐ In the midst of adding on or terminating Additional Disk, the server may stop to function. Please ensure that you stop your server beforehand.

☐ We do not change the Additional Disk Capacity. If you wish to change the Disk Volume, please make another new Additional Disk Contract. For that, you will be doing data migration by yourself. If you have already subscribed 2 Additional Disk Contracts, connection with additional disk exceeding the upper limit will be allowed only during Data Migration Period that IIJ stipulates.

☐ The amount of data that you can store will be less than the amount stated in the product's contract.

Support Specification

■ IIJ GIO Global Support Center

Except for urgent inquiry, e.g. Service cannot be used or it seems to have error, all queries shall be made to us by email. Services are available in both Japanese and English.

| Technical Issue Enquiry

Reception Hours	Throughout the year, 24 / 7 Your enquiry will be responded at about 9:00～17:00 JST (IIJ working days)
Contact Information	E-mail: info@sg.iijgio.com
Inquiry About	Service Available Specification Clarifying the Points written in the Service Explanation Details Other Technical Inquiry concerning the Service
Languages Support	Japanese, English

| General Enquiry about this service

Reception Hours	Throughout the year, 24 / 7 Your enquiry will be responded at about 9:00～17:00 JST (IIJ working days)
Contact Information	E-mail: sales@sg.iijgio.com Please contact IIJ sales representative
Inquiry About	Changes, Termination, Request, Customized Order of items in the Contract Agreement. General Enquiry concerning this Service
Languages Support	Japanese, English

| Required Information for Inquiry

When making an enquiry, please ensure that you have the following with you.

Required Information	Person-in-Charge Contact Service Code

IIJ GIO EU Service

■ Emergency Contact

| Emergency Contact for Subscribers

Please direct query to Operation Management Personnel whom you registered with

Reception Hours	Throughout the year, 24 / 7
Contact Information	Emergency Telephone Contact available. Telephone numbers can be found in "User Manual" given to you when you sign on
Inquiry About	Occurrence of error on your Contract Service Platform
Languages Support	Japanese, English

■ Virtual Machine Control Panel

| Instruction Website for V Series Subscribers

When you subscribe V Series (Virtual Server), we will give you a Virtual Machine Control Panel with which you can manage and operate the server. Features provided in Virtual Machine Control Panel are as below.

- □ Virtual Server Power ON/OFF
- □ Console Access

On top of that, you will also need to connect to Management Gateway, in order to use the Virtual Machine Control Panel. Login Account to Management Gateway and Virtual Machine Control Panel will be provided 1 account for 1 contract. Each account may be simultaneously shared among 2 users.
For more information about account and connection source, please refer to the "Usage Manual" given to you when you subscribe the contract.

Virtual Machine Control Panel will not be given for the X Series (Dedicated Server).
If you need Power ON/OFF for the X Series, please contact IIJ GIO Global Support Center.

■ Maintenance

Maintenance is conformed to IIJ GIO EU Service Maintenance Specification.
∗For more info, please refer to "IIJ GIO EU Service Specification".

IIJ GIO EU Service

■ Notes

□ From the point of view of ensuring security, inquiry from any person other than operation management person-in-charge will not be entertained.

□ By regular or emergency Maintenance, some or all features may cease functioning.

□ You cannot change Host Name and IP ADDRESS. When submitting application for Base Server, please ensure that you specify appropriate Host Name and IP ADDRESS.

□ After delivering IIJ GIO EU Service to you, it will be your own responsibility to respond to security vulnerabilities.

Application/Change/Termination

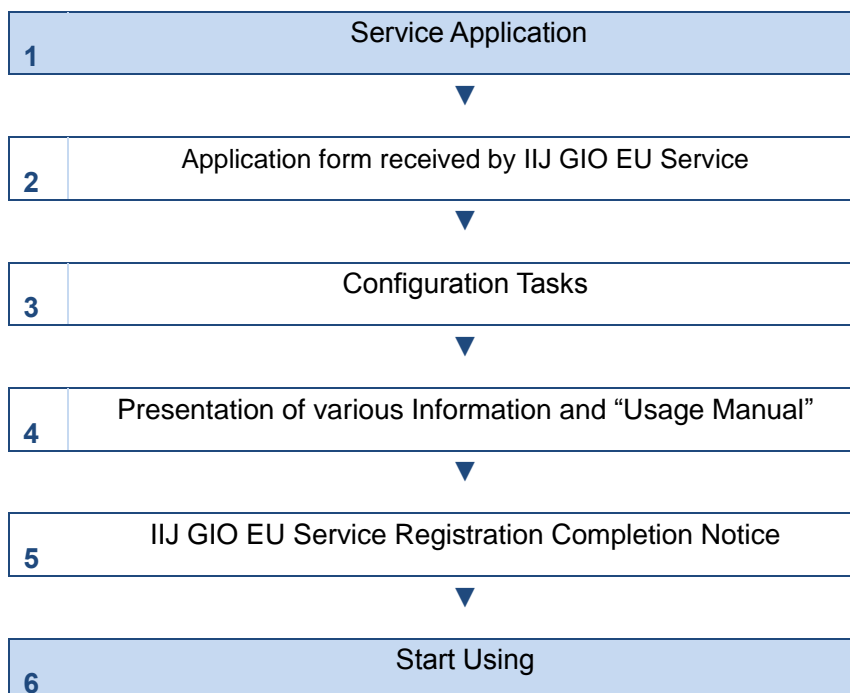■ From registration up to before using

| Time taken before servicing

Each Service requires different amount of processing time before the delivery of Service. Required time before the Service is provided is as shown in the following.
 The time required is not inclusive of the day the request is made. It is effectively counted from the next working day that all requirements for applications and configurations are received by IIJ.

Service	Contract Content	Time Required
V Series	Make new con-tract	5 working days∗
X Series	Make new con-tract	10 working days∗

∗These figures are based on IIJ track record. It does not guarantee that it will exactly take the same amount of times as stated above.

| The Flow of Service Process

1	Service Application

▼

2	Application form received by IIJ GIO EU Service

▼

3	Configuration Tasks

▼

4	Presentation of various Information and "Usage Manual"

▼

5	IIJ GIO EU Service Registration Completion Notice

▼

6	Start Using

| Things that will be sent to you

We will provide you the following information via mail

- ☐ IIJ GIO EU Service Registration Completion Notice
- ☐ IIJ GIO EU Service Configuration Sheet
- ☐ IIJ GIO EU Service User Manual
- ☐ IIJ GIO EU Service Specification

| Time taken for Service Changes or Termination

Time taken for Service Changes or Termination may differ depending on Service Type. Time taken for changing or terminating each Service is as shown below.
The time required is not inclusive of the day the request is made. It is effectively counted from the next working day that all requirements for applications and configurations are received by IIJ.

Service	Contract Content	Time Required
V Series	Change/Termination	3 working days
X Series	Change	Individual Adjustment

∗These figures are based on IIJ track record. It does not guarantee that it will exactly take the same amount of times as stated above.

■ Charging Start Time

- ☐ Charging for this service will start from the day the service was provided, incurring a monthly fee.
- ☐ Initial Charge will be charged at the same time as the first month fee.
- ☐ For the month you sign contract and the month you terminate, you will be charged at the amount that is prorated based on the number of days in that month, taking the billing start date as initial date of reckoning.

■ Charging Unit

This Service Charging Unit is as shown below.

Service		Type	Charging Unit
V Series		All Types	1 Base Server
	Additional Disk Option	All Types	1 Domain
X Series		All Types	1 Base Server

IIJ GIO EU Service

■ Minimum Usage Period

This Service Minimum Usage Period is as shown below.

Service		Types	Minimum Usage Period
V Series		All Types	1 month
	Additional Disk Option	All Types	1 month
X Series		All Types	1 month

■ Termination Process

- After termination date、you can no longer operate this service from Virtual Machine Control Panel.
- After termination date, base disk, additional disk, and Network Setting will be deleted. After these data have been deleted, they can no longer be restored.

■ Required reference document

- IIJ GIO Service Contract Agreement

■ Warranty Limitation

It is not warranty that this service is available at all times.

Revision History

Version	Revision Date	Description
1.00	2014/2/28	Create New

Service Specification, and information contained in this document are subject to change without any notice.

IIJ GIO EU Service

Virtualization Platform
Service Specifications [VW Series]

Oct. 17, 2014 Ver. 0.9

IIJ
Internet Initiative Japan

Internet Initiative Inc.

Content

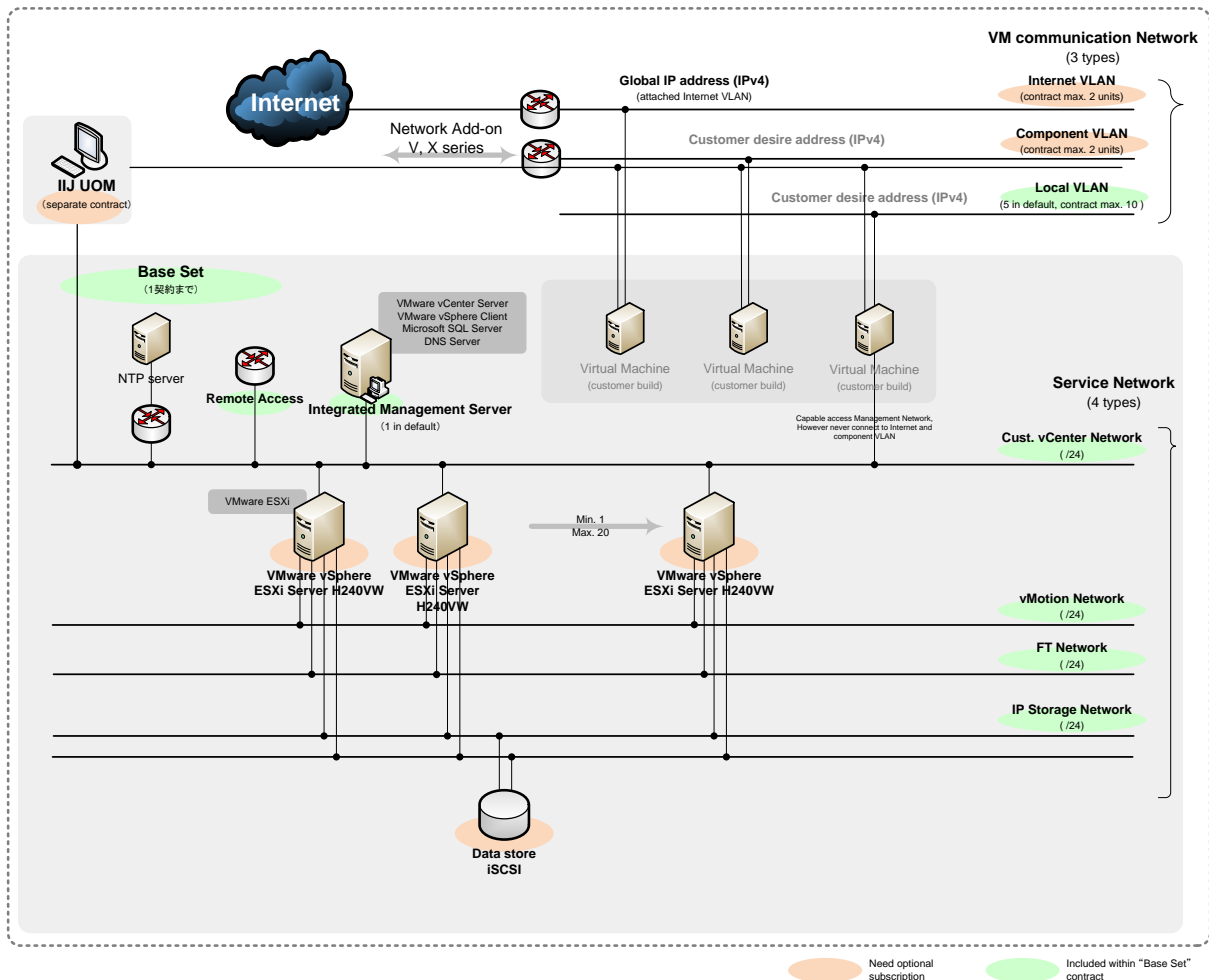# Service Overview

■ Virtualization Platform VW Series Overview

Virtualization Platform（hereinafter, refer to as "the Service"）is a service that assigns IIJ Server Resource to the customers via Physical Server Unit, with a pre-installing Hypervisor VMware vSphere ESXi provided by VMware, Inc. Together, IIJ resource provides storage and network, the former to keep Virtual Machine Images built on Hypervisor and the latter for the purpose of communication. In addition, Virtual Machine preinstalled with Integrated Management Software VMware vCenter Server is provided.

As agreed upon, you are able to use Physical Resources made up of Virtualization Platform VMware vSphere, as well as License for VMware vSphere ESXi or VMware vCenter Server, in the form of Cloud Service. You can also freely operate VMware vSphere ESXi and various features of VMware vCenter Server（However, there may be features that are not allowed to use. For more details, please refer to「Restriction」）.

Virtual Machine that you built on the Service ("Your Personalized Virtual Machine") can be used in conjunction with IIJ GIO EU Service Base Server and Network Add-on. This combination offers a diverse and flexible configuration and enables you to build cloud Service on your system quickly.

■ Structure

The following shows an overall chart of available components provided in the Service. Some components are provided as Standard, while others come with additional charges. Details on chargeable components are given in the next page.

| Components

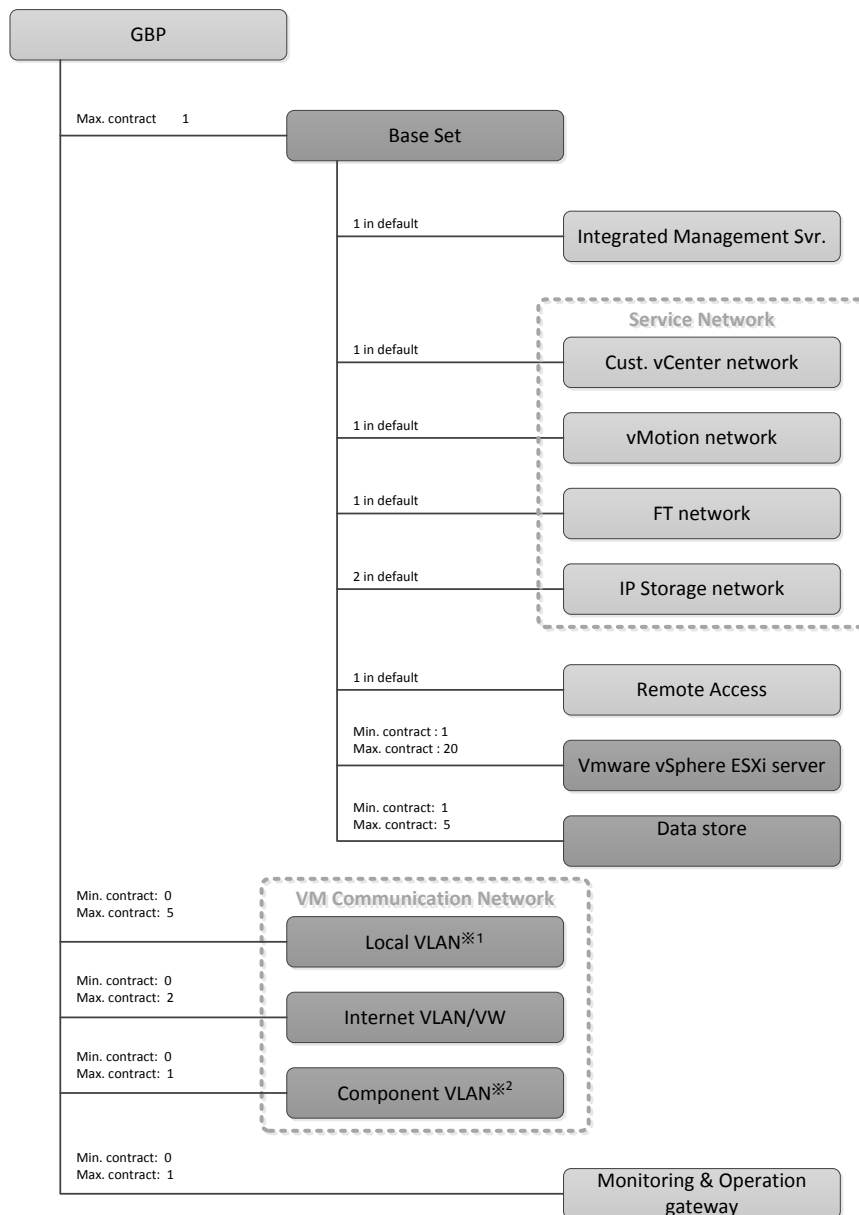This Service provides the following items:

Name	Description
Base Set	Basic environment package for the usage of Virtualization Platform VMware vSphere and its Integrated Management Software VMware vCenter Server. Integrated Management Server pre-installed with VMware vCenter Server, and Service Network connecting it with VMware vSphere ESXi Server and Data Store are provided, as per the Standard. VMware vSphere ESXi Server, Data Store and VLAN Network for external communication require separate subscriptions and different contracts.
VMware vSphere ESXi Server VMware vSphere ESXi Server H240VW	Server pre-installed with Hypervisor VMware vSphere ESXi

Data Store
 	
    iSCSI 500GB
 	
    iSCSI 1TB
 	
    iSCSI 1.5TB
 	
    iSCSI 2TB
	Storage to keep images of your personalized Virtual Machine in VMware vSphere ESXi Server. Mounting it to the VMware vSphere ESXi Server so that it is available for your usage.

VM Communication Network
 	
    Local VLAN
    Internet VLAN/VW
        Internet VLAN/VW /28
        Internet VLAN/VW /27
        Internet VLAN/VW /26
    Component VLAN
	VLAN is used in forms of communications between your personalized Virtual Machine in VMware vSphere ESXi Server. Depending on your preferences, you can use either VMware vSphere ESXi Server Standard Virtual Switch, or vSphere Distributed Switch（VDS）.

Contract Number and Standard Provision

Optional items such as minimum contract numbers and maximum contract numbers, and the number of features provided as Standard are shown followings:

☐ Example of Notation

- ・ You can subscribe to a maximum of 1 Base Set.
- ・ Each Base Set comes with a standard Integrated Management Server.
- ・ For each Base Set, you will need to subscribe to at least ONE VMware vSphere ESXi Server, and up to a maximum of 20 VMware vSphere ESXi Server.

```
GBP
 │
 ├─ Max. contract  1 ──────────── Base Set
 │                                  │
 │                                  ├─ 1 in default ───── Integrated Management Svr.
 │                                  │
 │                                  │        ┌─ Service Network ──────────────┐
 │                                  ├─ 1 in default ──── Cust. vCenter network │
 │                                  │        │                                 │
 │                                  ├─ 1 in default ──── vMotion network        │
 │                                  │        │                                 │
 │                                  ├─ 1 in default ──── FT network             │
 │                                  │        │                                 │
 │                                  ├─ 2 in default ──── IP Storage network     │
 │                                  │        └─────────────────────────────────┘
 │                                  │
 │                                  ├─ 1 in default ───── Remote Access
 │                                  │
 │                                  ├─ Min. contract : 1
 │                                  │  Max. contract : 20 ── Vmware vSphere ESXi server
 │                                  │
 │                                  └─ Min. contract: 1
 │                                     Max. contract: 5 ──── Data store
 │
 │        ┌─ VM Communication Network ─────────────┐
 ├─ Min. contract: 0
 │  Max. contract: 5 ──────────── Local VLAN※1      │
 │        │                                          │
 ├─ Min. contract: 0
 │  Max. contract: 2 ──────────── Internet VLAN/VW   │
 │        │                                          │
 ├─ Min. contract: 0
 │  Max. contract: 1 ──────────── Component VLAN※2   │
 │        └──────────────────────────────────────────┘
 │
 └─ Min. contract: 0
    Max. contract: 1 ──────────── Monitoring & Operation gateway
```

※1 If you subscribed to the Base Set, 5 Local VLAN will be provided, as per the Standard.

※2 If you subscribed to Component VLAN, 2 will be provided, as per the Standard.

| Combined Usage with each component of IIJ GIO EU Service

IIJ GIO EU Service items that can be used in conjunction with Integrated Management Server (belonging to Base Set), your subscribed VMware vSphere ESXi Server, and your personalized Virtual Machine, are as follows:

Items		Compatibility with Integrated Management Server	Compatibility with VMware vSphere ESXiServer	Compatibility with your personalized Virtual Machine (via Component VLAN)
Base Server				
	VSeries	×	×	○[※1]
	XSeries	×	×	○[※1]
Network Add-on				
	Virtual FW	×	×	○[※1]
	Virtual FW Redundant configuration	×	×	○[※1]
	Virtual FW+LB	×	×	○[※1]
	Virtual FW+LB Redundant configuration	×	×	○[※1]
	Cross-Connect	○	○	○[※1]
	Internet VPN	×	×	○[※1]
	Internet VPN Redundant configuration	×	×	○[※1]
IIJ's Unified Operation Management Service[※2]		○	○	○[※3]

※1 You will need to separately subscribe to another Component VLAN Contract and use it as a Network Segment to connect to Base Server and Network Add-on. The Network Segment connecting Base Server and Network Add-on, and the one that connects VMware vSphere ESXi Server and your personalized Virtual Machine can be connected individually by VR Features.

※2 IIJ's Unified Operation Management (hereafter, UOM) is not one of IIJ GIO EU menu, customer need to subscribe separately.

※3 When you subscribe to Component VLAN, both Component VLAN1 and VLAN2 are provided and component VLAN#2 is used to connect IIJ UOM.

■ Terminology

Terms	Descriptions
HSRP	It stands for 'Hot Standby Router Protocol', developed by Cisco Systems, Inc. It is used for redundant configuration of routing features, by using multiple routers.
NAT	An abbreviation for 'Network Address Translation'. This technology modifies IP Addresses contained in Packet Header when they are in transit across a traffic routing device, for the purpose of remapping one IP address space into another.
OVF Template	It stands for 'Open Virtualization Format Template'. An image format set by Distributed Management Task Force （DMTF）. It is used to provide a Virtual Appliance（Virtual Machine installed with OS Software）.
VMware vCenter Server	Integrated Management Software consisting of VMware vSphere that enables the management of multiple servers through a single console application.
VMware vSphere	A generic name for Virtualization Platform provided by the USA VMware, Inc. It includes Server, Storage, Network Virtualization Technology, and features equipped with the ability to manage its usability and scalability.
VMware vSphere Auto Deploy	Provisioning feature that centrally manage installation, upgrade, update and configuration of multiple Servers of VMware vSphere ESXi.
VMware vSphere Client	Software that connects to VMware vSphere ESXi and VMware vCenter Server, and carries out integrated management on both of them. Graphical user interface is provided.
VMware vSphere Command-Line Interface （CLI）	Software that allows you to manage VMware vSphere ESXi and VMware vCenter Server by the command line.
VMware vSphere Distributed Power Management （DPM）	Optimizes placement of Virtual Machine on the Server, based on the usage of Virtual Machine Resource, and it is functioned to perform power on/off to the needs of the operation of the Server.
VMware vSphere ESXi	Hypervisor that virtualizes server, and activates Virtual Machine thereafter.
VMware vSphere ESXi Server	Server pre-installed with VMware vSphere ESXi provided in the Service
VMware vSphere Fault Tolerance （FT）	It continuously runs Shadow Virtual Machine that synchronizes the process content for the Primary Virtual Machine activating within the VMware vSphere, such that even when the Primary Virtual Machine stopped functioning, the shadow Virtual Machine will take over the process without any disruption.
VMware vSphere Network I/O Control	When congestion occurs in the Network Resource using multiple Virtual Machines, it will control the Network Resource Distribution allocated to each Virtual Machine dynamically, following the policy that has been pre-defined.
VMware vSphere Power CLI	Software that allows you to manage VMware vCenter Server by Windows PowerShell Command Line. It is provided in the form of Windows PowerShell Snap.

Terms	Descriptions
VMware vSphere Storage APIs for Multi-pathing	It improves data transferability and reliability between Server and Storage, by using Storage Multi-pathing.
VMware vSphere Storage Distributed Resource Scheduler （SDRS）	It controls the Storage Resource Distribution allocated to each Virtual Machine dynamically, following the policy that has been pre-defined, based on storage used amount and storage data transfer load.
VMware vSphere Storage I/O Control （SIOC）	When congestion occurs in the Storage Access which uses multiple Virtual Machines, it will control the Network Resource Distribution allocated to each Virtual Machine dynamically, following the policy that has been pre-defined.
VMware vSphere vMotion	This feature moves Virtual Machine (operating in VMware vSphere) from one Server to another, while still holding on the activity condition.
VMware vSphere vStorage APIs for Array Integration （VAAI）	It suppresses the resources consumption, improves the performance and efficiency by offloading load onto disk array, through specific storage control.
VMware vSphere vStorage APIs for Data Protection	An integrated backup for Virtual Machine using VMware vSphere vStorage VMFS Snapshot. Online Virtual Machine Backup can be obtained.
VMware vSphere vStorage VMFS	VMware unique file system optimized to keep images of Virtual Machine that runs in VMware vSphere.
VMware vSphere Web Client	It is an integrated management software that connects to VMware vCenter Server and to be used for the management. Web Browser Graphical User Interface is provided.
VMware vSphere Web Client Server	Software that provides connection from VMware vSphere Web Client to VMware vCenter Server.
VMware Certified Professional (VCP)	Qualification certified by USA VMware, Inc. upon receiving training in designing, constructing and operating Virtual Environment, using VMware vSphere, so as to achieve better operational performance, while still keeping up with those skills.
VRRP	It stands for 'Virtual Router Redundancy Protocol', set by RFC 3768. It is used during routing redundant configuration via multiple routers.
Internet Registry	An organization that allocates and assigns Global Addresses and manages them. Ex. RIPE (Reseaux IP Europeens)
Statistics Level	Value representing a collection range of statistical data is used for VMware vSphere performance monitoring and problem solving. The larger the number, the wider the collection range. However, when the amount of associated collection data increases, Data Base Usage Amount will also increase.
Standard Virtual Switch	Virtual Switch that functions on each Server constituting VMware vSphere.
Dispersed Virtual Switch	Virtual Switch that functions as one of the switches for the multiple servers constituting VMware vSphere.

■ Restrictions

The following restrictions are observed in some of the VMware vSphere features:

- VMware vSphere Auto Deploy is not available.
- VMware vSphere Distributed Power Management（DPM）
  is not available.
- VMware vSphere Network I/O Control
  Please do not use Service Networks（Management Network, IP Storage Network, vMotion Network and FT Network）, as the results achievable in the VM Communication Network of the Service is limited. Please do not use VMware vSphere Storage APIs for Multi-pathing.
- Please do not use adjustment function based on VMware vSphere Storage Distributed Resource Scheduler (SDRS) Storage I/O Loading.
- Please do not use VMware vSphere Storage I/O Control（SIOC）.
- Please do not use VMware vSphere vStorage APIs for Array Integration（VAAI）.
- VMware vSphere vStorage APIs for Data Protection.
  Data Store for this Service cannot be connected to Server other than VMware vSphere ESXiServer of the Service. For this reason, when you assume such configuration, Off-host backup would not be accepted.
- Dispersed Virtual Switch
  Private VLAN（PVLAN）feature is not available.

In addition to the preceding paragraph, there are also Guidelines and Restrictions on Settings, with regards to each of VMware vSphere features provided by the Service. For more details, please refer to Notes and Restrictions in this document as well as『IIJ GIO EU Service Virtualization Platform User's guide』.

■ Information to be provided by and to customer

The information that will be provided by you and the information that will be provided to you when using the Service are as given below:

Information provided by customer	Information provided to customer
Configuration Sheet (Base Set)	
--	・ Base Set Management ID ・Service Network VLAN ID, Network Address and Net Mask ・ Integrated Management Server Host Name, IP Address
Configuration Sheet (VMware vSphere ESXi Server)	
--	・Host Name, IP ADDRESS
Configuration Sheet (Data Store)	
・Item	・iSCSI Server information, Unique ID and HLU
Configuration Sheet	
Local VLAN	
--	・VLAN ID
Internet VLAN	
・Item	・VLAN ID ・Network Address /Net Mask/Gateway Address
Component VLAN	
・Network Address /Net Mask	・VLAN ID ・Gateway Address
Account notification	
--	・ Integrated Management Server customer access account and initial password ・ ESXi server customer access account and initial password ・ IP address of remote access virtual dialup and customer access account and initial password.

Service Terms & Conditions

■ Provision Conditions

When you decided to use the Service, you are required to sign a contract which is subscribed to the following items:

- 1 or more VMware vSphere ESXi Server
- 1 or more Data Store (regardless of item type)
- 1 or more Internet VLAN or Component VLAN

Upon satisfying the above conditions, Base Set will be provided as per the Standard. Only 1 Base Set will be provided.

■ Terms of Agreement

You must agree to the following terms upon subscribing to the Service:

- The Service assumes that its user has a clear understanding on all Specifications and Features outlined for the VMware vSphere ESXi and VMware vCenter Server, and that the Service is used by a system engineer or system operation manager（VMware Certified Professional or having equivalent qualifications）experienced in design, construction and operation of Virtual Machine.

- Without a qualified system engineer or system operation manager, these following problems may occur:
  - All features of the Service may not be fully utilized.
  - Unexpected failure, including stop and loss of Virtual Machine
  - The Service will no longer be usable due to usage that violates Notes and Restrictions.

- If you do not have a qualified system engineer or system operation manager, IIJ is able to provide technical assistance with regards to design, construction and operation. Please feel free to contact us.（Technical assistance is a separate, chargeable Service）

- Prior to the signing of Service contract, you are required to read through and agree to all Notes and Restrictions described in all relevant documents, including this document and User's guide.

  - Depending on the nature of the Service you subscribed to, there might be circumstances whereby certain technical restrictions are not inflicted upon your usage, which is not in accordance with what is set forth in Notes and Restrictions. It is due to the privileged account given to the customers of VMware vSphere ESXi and VMware vCenter Server.

- If an error occurs due to violations of Notes and Restrictions such that it requires re-installation by IIJ, the re-installation service will be chargeable.
- However, we do not guarantee the proper functioning of the system after re-installation is carried out.

☐ This Service Specifications, as well as your Service usage aspect and application, shall be based on the license agreement of VMware vSphere ESXi and VMware vCenter Server, as stipulated by VMware, Inc. who may change the license agreement. The Service specifications and your Service usage are subject to changes or further restrictions. Under the circumstance, you are required to comply with the changes entirely or terminate the contract.

Feature Specifications

■ Base Set

It is a basic environment package which enables you to use Virtualization Platform VMware vSphere and its Integrated Management Software VMware vCenter Server.

Integrated Management Server is pre-installed with VMware vCenter Server, and Service Network connecting it with VMware vSphere ESXi Server and Data Store are provided as per the Standard. However, VMware vSphere ESXi Server, Data Store and VLAN Network for external communication will have to be subscribed separately in another contract.

IIJ GIO EU Service only provides ONE Base Set.

Items	Specifications
Contract unit	1
Min. No. of Contract units	0
Max. No. of Contract units	1
Contract Terms	・VMware vSphere ESXi Server and Data Store used by this Base Set have to be contracted simultaneously, at least 1 for each. ・Internet VLAN/VW and Component VLAN will have to be contracted simultaneously, at least 1 for each.
Termination Terms	・Integrated Management Server VMware ESXi Server, Data Store, Local VLAN, Internet VLAN/VW and Component VLAN used by this Base Set will also be terminated.

■ Additional Notes

- □ Base Set provides 5 Local VLAN, as per the Standard.

■ Restrictions

- □ The number of Integrated Management Server and Service Network provided by the Base Set may not be changed. There is an upper limit to the number of Base Set VMware vSphere ESXi Server and Data Store that can be contracted in the Base Set.

■ Integrated Management Server

Server pre-installed with Integrated Management Software VMware vCenter Server; the following Integrated Management Servers are provided to the subscribed Base Set, as per the Standard.

Items	Specifications	
Number of standard provision	1	
Maximum provision number	1	
Max. number of Controllable VMware vSphere ESXiServer	20	
OS	Microsoft Windows Server 2008 R2 SP1 Standard 64bit	
Installation Software	Server	VMware vCenter Server 5 Standard Edition VMware vSphere Web Client Server
	Client	VMware vSphere Client 5 VMware vSphere Command-Line Interface 5 VMware vSphere Power CLI 5
	Data Base	Microsoft SQL Server 2008 R2 SP2 Standard
	DNS Server	DNS Server that comes with OS ※using name resolution between Integrated Management Server & VMware vSphere ESXi Server
CPU Core Counts	2 (Virtual)	
Memory	6GB	
Local Disk	C Drive: (50GB)	Microsoft Windows Server VMware vCenter Server VMware vSphere Client VMware vSphere Command-Line Interface VMware vSphere Power CLI VMware vSphere Web Client Server Microsoft SQL Server（Program）
	D Drive: (100GB)	Microsoft SQL Server（Data Base)

NIC Port	1 Port
	Management Network
NIC Bandwidth limit	1Gbps (shared usage)
Remote Desktop for Administration session count	2 ※remote desktop feature that comes with the OS. Used for OS Management of Integrated Management Server.
Host Name	Assigned and configured by IIJ ※Set as <Base Set Management ID>vc. (eg : gbvb999999vc)
IP ADDRESS	Assigned and configured by IIJ ※For more information, see 「Service Network」.
Domain Name	Assigned and configured by IIJ
Default Gateway	Assigned and configured by IIJ ※Set Remote Access Router
Reference DNS Server	Assigned and configured by IIJ ※Set Integrated Management Server DNS Server
Reference NTP Server	Configured by IIJ ※Set IIJ Service Device NTP Server
Account delivered to customer	vcadmin ※An account granted with Microsoft Windows Server Administrators rights ※Shared by the OS, Integrated Management Software（Server）, Data Base
Account managed by IIJ	Monitor ※For customer support aspect, use to copy Customer provided trouble log exit Integrated Management Server to Service Management Infra.

■Additional Notes

- Integrated Management Server is provided as a Virtual Machine, on a redundant configured Virtualization Platform, and it is managed by IIJ （not provided as a Virtual Machine on your VMware vSphere ESXi Server）.
- Integrated Management Software （Server）, Integrated Management Software （Client）, Data Base, and DNS Server are installed in a same Integrated Management Server.

- Integrated Management Server and all of the installation software are delivered to you in a configuration that does not use Active Directory.
- For VMware vCenter Server's Login User, use Microsoft Windows Server Local User Account.
- Microsoft SQL Server Service Account is made up of a Local System Account.
- Microsoft SQL Server authentication mode is made up of Windows authentication mode.
- DNS Server is delivered to you with Host Name & IP ADDRESS of Integrated Management Server and VMware vSphere ESXi Server registered.
  ※ VMware vSphere ESXi Server Host Name & IP ADDRESS are named and numbered by IIJ, in accordance with predetermined rules. VMware vSphere ESXi Server Host Name & IP ADDRESS of number corresponding to the maximum contract number has already been registered in advance.

■ Notes on fault tolerance

When Integrated Management Server is not able be launched or managed due to loss of files or unexpected rewriting within the Integrated Management Server Local Disk, IIJ will reinstall the Integrated Management Server and deliver it to you. You would be required to carry out the system restoration on your own, after obtaining and re-installing data files backup and your personal settings.

※If the failure occurs due to violation of Notes and Restrictions, re-installation of Integrated Management Server will be chargeable. For more details, please contact IIJ sales representative.

- We do not guarantee the usability and accuracy of NTP Server (reference destination) configured in the Integrated Management Server, due to various reasons, such as Network transmission delay. Please set a NTP Server that is suitable for your environment as the reference destination for a better performance.

■ Notes on failure

- Upon detecting Virtualization Platform hardware fault where the Integrated Management Server (Virtual Machine) operates, IIJ will contact the customer and conduct hardware maintenance.
- If you need services on Integrated Management Server monitoring, please subscribe to IIJ UOM Service.

■ Notes on Capacity

The maximum numbers of VMware vSphere ESXi Server that can be managed are based on the following conditions. Depending on your usage condition, the maximum number that can be managed on actual operation may be figures as given below.

- Each VMware vSphere ESXi Server may run up to 10Virtual Machine.
- Collected Statistical Information is given as below:

Collection interval	Archive duration	Statistical Level

5 minutes	1 day	2
30 minutes	1 week	2
2 hours	1 month	1
1 day	1 year	1

■ **VMware vCenter Server Version**

❑ VMware vCenter Server Version installed in Integrated Management Server as well as its update combination are as follows.

Version	Build Number
VMware vCenter Server 5.0 Update2	913577

❑ We do not guarantee that the above version and build number does not contain security vulnerability.

■ **Notes on Patching & Upgrading**

❑ Unless IIJ made announcement recommending an update of VMware Tools being introduced to the Integrated Management Server, please do not make any update.

❑ Microsoft Windows Server (including DNS Server), VMware vCenter Server, VMware vSphere Client, VMware vSphere Command-Line Interface, VMware vSphere Power CLI, and Microsoft SQL Server Security vulnerabilities, or patches for fixing bug (including Security Update, Hotfixes and Service Pack for Microsoft Products) shall be at best applied by the customer.
※ when applying a Service Pack for Microsoft products, please first ensure that such Service Pack is compatible with Integrated Server OS and installation software, as well as VMware vSphere ESXi Server Hypervisor.

❑ Please do not conduct any version update of Microsoft Windows Server (including DNS Server), VMware vCenter Server, VMware vSphere Client, VMware vSphere Command-Line Interface, VMware vSphere Power CLI, and Microsoft SQL Server
※ Upgrade following the change in the tenth of the version number for VMare products shall be deemed to be version upgrade.

■ **Restrictions**

❑ Please do not change Integrated Management Server Host Name, IP ADDRESS and Default Gateway.

❑ Please do not change zone and record registered within Integrated Management Server DNS Server.

❑ Please do not limit the communication on the Port, used by Integrated Management Server VMware vCenter Server, through Windows Firewall Features. At the time of delivery of Integrated Management Server, the Port communication is permitted.

❑ Please do not remove, or change, password of the Account （monitor） managed by IIJ.

- For the inventory managed by Integrated Management Server VMware vCenter Server, please do not use multi-byte characters, including Japanese names in inventory.
- You may install your own VMware products and any other products onto Integrated Management Server, but IIJ do not provide Support for these products.

■ Service Network

It is a network connecting Integrated Management Server, VMware vSphere ESXi Server and Data Store. The following Service Network is provided, as per the Standard, to the subscribed Base Set.

| Cust. vCenter Network

It functions as a platform for IP Communication between Integrated Management Server and VMware vSphere ESXi Server, and between VMware vSphere ESXi Servers.

| IP Storage Network

It functions as a platform for IP Communication between VMware vSphere ESXi Server and Data Store iSCSI.

| vMotionNetwork

It functions as a platform for IP Communication among VMware vSphere ESXi Servers, when using VMware vSphere vMotion.

| FTNetwork

It functions as a platform for IP Communication among VMware vSphere ESXi Servers when using VMware vSphere Fault Tolerance （FT）.

Each Network Specification is given below:

Items	Specifications			
	Cust. vCenter Network	vMotion Network	FT Network	IP Storage Network
Numbers of Standard Provision	1	1	1	2
Maximum Provision Number	1	1	1	2

VLAN ID	To be assigned by IIJ			
IP ADDRESS	To be assigned by IIJ			
IP ADDRESS Count	256 (/24)	256 (/24)	256 (/24)	256 (/24) ×2
IP ADDRESS Type	Private Address			
VMware vSphere ESXi Server NIC Port Count	2 （Active / Standby)	2 （Active / Standby)	2 （Active / Standby)	2 （Active / Standby)
Connection Destination	Standard Virtual Switch			
Maximum Bandwidth	1Gbps			1Gbps

■ **Additional Notes**

- IP ADDRESS is among private Address prescribed in RFC 1918, and will be assigned by IIJ.
- Management Network can be connected with the Network Add-on Cross-Connect. This can ensure access path from your System Network, built within rack provided by IIJ Data Center Service to the Integrated Management Server and VMware vSphere ESXi Server.
- Management Network can be connected with Virtual Machine that you've built. Please also check the Restrictions described in the later part of this document.
- When connecting the Virtual Machine to the Management Network, please use IP ADDRESS of a predetermined range specified by us.

■ **Notes on Capacity**

The band of Management Network is set on assumption that IP Communication is used between Integrated Management Server and VMware vSphere ESXi Server, as well as between other VMware vSphere ESXi Servers. When connecting Virtual Machine to the Management Network and generating IP signal between the Virtual Machine and Integrated Management Server, or VMware vSphere ESXi Server, or Add-on, these IP signals may be inhibited.

■ **Notes on IP Packet Loop and Transfer Amount**

- Management Network, IP Storage Network, vMotion Network and FT Network will cease operation of Network Interface (that connects to Server of that facility), once detected an occurrence of IP Packet Loop within the VMware vSphere ESXi Server hosted by IIJ Service Facility. You will be notified by us when Network Interface is suspended. Please eliminate IP Packet Loop.
  If you need to activate Network Interface, please contact IIJ GIO Global Support Center.
- Management Network, IP Storage Network, vMotion Network, and FT Network will place a limit on the number of IP Packet allowed to be transmitted by that Server on that facility, when the broadcast packet of VMware vSphere ESXi Server, hosted by IIJ Facility, exceeds a certain amount of value (per server).

When these packet numbers fall below a certain amount of value, such limit will be lifted. Also, if these packet numbers have not fallen below certain value after a certain timeframe, we will inform you about this.

■ Restrictions

□ Please do not use Management Network, IP Storage Network, vMotion Network and FT Network for any purposes unspecified by IIJ.
□ When connecting Network Add-on Cross-Connect to Management Network, the following IP ADDRESS will not be useable in your Network Environment※.

Unusable IP ADDRESS Band	
IP ADDRESS Band used by IIJ in this Facility	10.182.0.0/15

※When you are using Network Add-on Cross-Connect, please indicate Network of routable range from the connection router that you have prepared. For more details, please refer to 「IIJ GIO EU Service Network Add-on Service Specifications」.

□ When connecting your personalized Virtual Machine to the Management Network, please do not use any IP ADDRESS other than the range stipulated by IIJ.

The objective of each Network IP ADDRESS is as follows:

Items	Specifications				
4th Octet	Management Network	IP Storage Network	vMotion Network	FT Network	
1～20	VMware vSphere ESXi Server	—	—	—	—
21～100	（Reserved by IIJ）				
101	Integrated Management Server	—	—	—	—
102～127	Your personalized Virtual Machine	—	—	—	※1
128～199	（Reserved by IIJ）	—	—	—	—
200～215	（Reserved by IIJ）	Data Store	—	—	—
216～249	（Reserved by IIJ）	—	—	—	—
250～252	Cross-Connect	—	—	—	※2

253	IIJ UOM Service	–	–	–	–
254	Default Gateway	–	–	–	–

※１ When connecting your personalized Virtual Machine to the Management Network, please use IP ADDRESS of this range.

※２ When connecting Cross-Connect to the Management Network, please use IP ADDRESS of this range in your router.

■ Remote Access

Remote Access serves as an environment with access to Integrated Management Server and VMware vSphere ESXi Server, by connecting to Management Network via the Internet.

The following Remote Access is provided as per the Standard of your subscribed Base Set.

Items	Specifications
Number of Standard Provision	1
Maximum Provision Number	1
Available Features	
Virtual Dial-Up Feature	
Usage Option	Payment by standard [※1]
Supported protocols	SSL Dial Up
Connection Account	1[※2]
Communication Allowed Protocol	
Remote Access Source → Integrated Management Server, VMware vSphere ESXi Server	
	SSH, HTTP, HTTPS, VMware vSphere Client, and RDP(Remote Desktop Protocol)
	TCP/22, TCP/80, TCP/443, TCP/902, TCP/903, and TCP/3389
Remote Access Source → Integrated Management Server	
	VMware vSphere Web Client
	TCP/8080, TCP/8443, TCP/9443, and TCP/10443

※１ If you subscribe to IIJ GIO EU Service Base Server, you will use the same account allocated by the Base Server.

※２ Allocation will be carried out by IIJ. You can connect to 2 sessions at the same time.

■**Additional Notes**

□ Management Network is connected to Routers for receiving Remote Access Connection.

□ This router is set as a Default Gateway for Integrated Management Server and VMware vSphere ESXi Server.

■ VMware vSphere ESXi Server

It is a server that has Hypervisor VMware vSphere ESXi pre-installed.
You may subscribe to the following VMware vSphere ESXi Server for your subscribed Base Set.

Items		Specifications
Contract Unit		1
Min. Contract Number		1
Max. Contract Number		20
Contract Condition		—
Termination Condition		—
Hypervisor		VMware vSphere ESXi 5 installable Enterprise Plus Edition
CPU Count		2
CPU Core Count		12
Memory		96GB
Local Disk		equipped with the capacity needed in order to launch Hypervisor
NIC Port		6 Port
	vmnic0	VM Communication Network
	vmnic1	Cust. vCenter Network, vMotion Network, FT Network
	vmnic2	VM Communication Network
	vmnic3	Cust. vCenter Network, vMotion Network, FT Network
	vmnic4	IP Storage Network
	vmnic5	IP Storage Network
NIC Port Unit Band Limit		1Gbps
Host Name		To be assigned and set up by IIJ ※rule <Base Set Management ID>esx<No. 1～ 100> （eg： gsvb999999esx001）
IP ADDRESS		To be assigned and set up by IIJ ※For more detail, please refer to 「Service Network」.
Domain Name		To be assigned and set up by IIJ

Default Gateway	To be assigned and set up by IIJ ※Set Remote Access Router
Reference DNS Server	To be assigned and set up by IIJ
Reference NTP Server	To be assigned and set up by IIJ
Reference DNS Server (Your Personalized Virtu- al Machine)	To be set up by you ※You will use DNS Server provided by IIJ
Reference NTP Server (Your Personalized Virtu- al Machine)	To be set up by you
Account delivered to you	Root
Remote Console	Not provided

■ **Additional Notes**

Local Disk Capacity may differ depending on the provision period. Please also check the Restrictions as described in the later part of this document.

■ **Things that you have to do**

VMware vSphere ESXi Server will be delivered to you without Integrated Management Server VMware vCenter Server Inventory registered. You will have to register the inventory on your own.

■ **Notes on fault tolerance**

▫ The main parts of VMware vSphere ESXi Server are redundantly configured. If failure occurs in parts where redundant configuration has not been carried out, the server may be shut down immediately. However, if failure occurs in the main part where redundant configuration has been carried out, you will receive a notification from us to temporarily suspend VMware vSphere ESXi Server as we run maintenance.

Please contract a spare VMware vSphere ESXi Server, or set up a redundancy configuration, or use it as Physical Server to which you want to move your Virtual Machine to, as required.

▫ The parts where redundant configuration is/is not carried out are as follows:

Parts that is redundantly configured

> ・NIC（Suspend VMware vSphere ESXi Server when conducting maintenance）
> ・Local Disk
> ・Power
>
> **Parts that is not redundantly configured**
> ・CPU
> ・Memory
> ・Local Disk Redundancy Controller

- When the Integrated Management Server cannot be launched or managed due to loss of files or unexpected rewriting within the Integrated Management Server Local Disk, IIJ will reinstall the Integrated Management Server and deliver it to you. You would be required to carry out the system restoration on your own, after obtaining and re-installing data files backup and your personal settings.
- If failure occurs due to violation of Notes and Restrictions, re-installation of Integrated Management Server will be chargeable. For more details, please contact IIJ sales representative.
- Please keep file you received as a backup in the Integrated Management Server.
- We do not guarantee the usability and accuracy of NTP Server (reference destination) configured in the Integrated Management Server, due to various reasons, such as Network transmission delay. Please set a NTP Server that is suitable for your environment as the reference destination for a better performance.

■ **Notes on failure**

- Upon detecting VMware vSphere ESXi Server hardware fault, IIJ will contact the customer and conduct hardware maintenance. If you found any VMware vSphere ESXi Server hardware fault, please contact IIJ GIO Global Support Center.
- If you need to monitor for Integrated Management Server, please subscribe to IIJ UOM Service.
- The communication path between VMware vSphere ESXi Server and Data Store iSCSI is redundancy-configured by two IP Storage Networks （iSCSI） of Active/Standby Configuration. If VMware vSphere ESXi Server NIC Port connecting to the Active IP Storage Network (iSCSI) fails to perform due to failure of your operation, or if load optimization function of the storage device is activated, it will switch to communication by other IP Storage Network （iSCSI）. However, the occurrences of such switching depend on the communication status of the NIC Port of each respective VMware vSphere ESXi Server. This switching is done non-stop. The occurrences of such switching cause no trouble to the operation.
- Moreover, if the load optimization function of the storage device is activated, in all of the VMware vSphere ESXi Server where LUN (Logical Unit Number) is mounted and where communication with LUN has occurred, the log displaying the switching of IP Storage Network （iSCSI） communication will be output to the system log. Load optimization function of the storage device may also operate with the VMware vSphere ESXi Server, issuing an instruction. In that case, same log under the same condition will be output to the system log.

■ **VMware vSphere ESXi Version**

- □ VMware vSphere ESXi Version installed in VMware vSphere ESXi Server, as well as its update combination, are as follows:

Version	Build Number
VMware ESXi 5.0 Update2	1311177

- □ We do not guarantee that the above version and build number does not contain security vulnerability.

■ **Notes on Patching & Upgrading**

- □ Patches for fixing VMware vSphere ESXi Security Vulnerability or failure shall be at best applied by the customer.
- □ Please do not conduct any version update of VMware vSphere ESXi.
  ※Upgrade following the change in the tenth of the version number for VMware products shall be deemed to be version upgrade.

■ **Restrictions**

- □ Please do not use VMware vSphere ESXi Server Local Disk as a Data Store.
- □ Please do not change the Host Name, IP ADDRESS, Domain Name and Default Gateway of VMware vSphere ESXi Server.

■ Data Store

It is a storage that keeps images of your personalized Virtual Machine in VMware vSphere ESXi Server. You may mount it from VMware vSphere ESXi Server in order to use it.

You may subscribe to the following Data Store for your subscribed Base Set.

| iSCSI

Disk Volume will be provided as a block device by iSCSI Protocol, for the VMware vSphere ESXi Server, via IP Storage Network.

Items	Specifications
Supported protocols	iSCSI (TCP/3260)
Share point	To be allocated by IIJ. Two Target IP ADDRESSES will be given to every subscribed Data Store. (Another contract Data Store may be allocated the same Target IP ADDRESS.)
Security	・Each customer has a separate iSCSI Server Data Store IQN. ・IP Signal between iSCSI Server and IP Storage Network is

| | varied by customers. |
| | ・IP Storage Network VLAN varied by customers. |

□ You may subscribe to the following Data Store.

Items	Specifications
Number of Standard provision	0
Contract Unit	1
Min. Contract Number	Total 1
Max. Contract Number	Total 5
Contract Condition	—
Termination Condition	—
Option Data Store	Data Store iSCSI 500GB Data Store iSCSI 1TB Data Store iSCSI 1.5TB Data Store iSCSI 2TB

■ Additional Notes

□ Devices that make up IP Storage Network are redundantly configured.
□ Data Store will be delivered to you certifiable as a storage device, from all VMware vSphere ESXi Server connecting to your IP Storage Network (only from a specific VMware vSphere ESXi Server that will not be recognizable as a storage device).
□ iSCSI Server and Storage Processer that provide the Data Store may differ, depending on particular Data Store Contract Period.
□ USA VMware, Inc., and IIJ do not recommend combining multiple Data Stores with VMware vSphere ESXi and using them as one unit of VMware vSphere vStorage VMFS.

■ Things that you have to do

□ Data Store will be delivered to you without being mounted on VMware vSphere ESXi Server. You will have to mount it on your own.
□ If you wish to terminate the Data Store, you will have to un-mount the Data Store from the VMware vSphere ESXi Server first.

■ Notes on fault tolerance

IIJ will not receive backup of any file and block data in the Data Store. Please subscribe to a spare Data Store and set it as Save Destination, to regularly create backups, if necessary.

■ Notes on failure

□ The communication path between VMware vSphere ESXi Server and Data Store iSCSI is redundancy-configured by two IP Storage Networks （iSCSI） of Active/Standby Configuration. If VMware vSphere ESXi Server NIC Port connecting to the Active IP Storage Network (iSCSI) fails to perform due to failure of your operation, or if load optimization function of the storage device is activated, it will switch to communication by other IP Storage Network （iSCSI）. However, the occurrences of such switching depend on the communication status of the NIC Port of each respective VMware vSphere ESXi Server. This switching is done non-stop. The occurrences of such switching cause no trouble to the operation. Moreover, if the load optimization function of the storage device is activated, in all of the VMware vSphere ESXi Server where LUN （Logical Unit Number） is mounted and where communication with LUN has occurred, the log which displays that switching of IP Storage Network （iSCSI） communication will be output to the system log. Load optimization function of the storage device may also operate with the VMware vSphere ESXi Server, issuing an instruction. In that case, same log under the same condition will be output to the system log.

■ Notes on contract modification

If you wish to make changes to any Data Store item that you have already subscribed to, you must first terminate the current subscribed Data Store and subscribe to a new Data Store.

□ You cannot transfer any file or block data in the Data Store.
□ You cannot expand or shrink the volume.

■ VM Communication Network

VLAN used by customer personalized Virtual Machine in VMware vSphere ESXi Server, serves with the purpose of conducting various types of communication. It is used by setting to Standard Virtual Switch or Distributed Virtual Switch of VMware vSphere ESXi Server.

| Local VLAN

VLAN connecting between Virtual Machines that you built

| Internet VLAN/VW

It is a VLAN connecting your personalized Virtual Machine to the Internet.

You can choose the following item, depending on number of IPv4Global Address that you are using.

- □ Internet VLAN/VW /28
- □ Internet VLAN/VW /27
- □ Internet VLAN/VW /26

■ **Reverse DNS Server**

PTR Record for IPv4 Global Address assigned by IIJ can be registered to IIJ DNS Server. For more details, please refer to 「IIJ GIO EU Service Specifications」.

■ Notes on Global Address

- □ Global Address assigned by IIH is not usable with other IIJ services or other company Services.
- □ From security's point of view, IIJ implements Global Address Source Address Validation. In the Service, only the Global Address assigned to the Customer will be able to be used for communication with Internet. Packet with invalid Source Global Address will be blocked.

| Component VLAN

It is a VLAN connecting your Virtual Machine to the Base Server, Network Add-on. Through IIJ GIO EU Service Base Server and Add-on that you use, you can select these following types of VLAN during registration.

Usable Base Server, Network Add-on	
Base Server V Series	※1
Base Server X Series	※1
Network Add-on Virtual FW	※1
Network Add-on Virtual FW Redundant Configuration	※1
Network Add-on Virtual FW+LB	※1
Network Add-on Virtual FW+LB Redundant Configuration	※1
Network Add-on Internet VPN	※1
Network Add-on Internet VPN Redundant Configuration	※1
Network Add-on Cross-Connect	※1 ※2
IIJ UOM Service (need to subscribe)	※3

※1　Connect via Component VLAN1
※2　Do not use Component VLAN for connection to the Management Network.
※3　Connect via Component VLAN2

| Each VLAN Specification is as follows.

Item	Specification

	Local VLAN	Internet VLAN	Component VLAN
# of VLANs (default)	5	0	0
Additional order Vlan Unit	1	1	2[※1]
Max. # of VLANs	Total 10	Total 2	Total 2
Contract Condition	To contract Base Set		
Termination Condition	—		
VLAN ID	To be assigned by IIJ		
IP ADDRESS	To be assigned by customer	To be assigned by IIJ	To be assigned by customer
No. of IP ADDRESS that customer can have	Any	Following items: ・/28(9Address) ・/27(25Address) ・/26(57Address)	/24 segment only
No. of IP ADDRESS Reserved by IIJ	0	3[※2]	1[※3]
IP ADDRESS Type	Prescribed Address [※4]	Global Address	Prescribed Address [※5]
Report of Usage IP ADDRESS to IIJ	Not required	—	required
No. of VMware vSphere ESXi Server NIC Port	2 （Active/Standby)		
Connection destination	Standard Virtual Switch or Distributed Virtual Switch		
Maximum bandwidth	1Gbps		

※1 Both Component Vlan#1 and #2 are provided.

※1 Network Address and Broadcast Address will not be used. 3 Addresses right in front of Broadcast Address will be used as a Gateway Address.

※2 Network Address and Broadcast Address will not be used. In order to connect with Base Server, Network Add-on and IIJ UOM Service, one address right in front of Broadcast Address will be used as a Gateway Address.

※3 Prescribed Address assigned by you has to satisfy one of the following conditions.

・Private Address stipulated by RFC 1918 and RFC 4193
・Unique Global Address that has been allocated by a proper procedure from Internet Registry, or the operator managing that IP ADDRESS
※IIJ does not provide routing from the Internet to Global Address.

※4 Prescribed Address assigned by you has to satisfy one of the following conditions.

・Address within the IP ADDRESS presented by IIJ, among the Private Address stipulated by RFC 1918
・Global Address as described in ※3

■ Additional Notes

☐ When you subscribed to 1 ESXi Server, 5 Local VLAN will be provided as per the standard provision of Base Set. Regardless of the number of ESXi Server that you subscribed to, the number of provided Local VLAN as per the Standard is 5. If you need any additional, you can subscribe to 1.

☐ If you built a router on top of your personalized Virtual Machine, and use VRRP or HSRP as a Redundancy Protocol, please use the Group ID as given below.

Redundancy Protocol	Group ID
VRRP	241～254
HSRP	241～254

■ Things that you have to do

You will select either Standard Virtual Switch, or Distributed Virtual Switch, to connect to VLAN. You will also need to set up the VLAN ID.

■ Notes on IP Packet Loop and Transfer Amount

VM Communication Network will cease the Network Interface that connects to Server of that facility, once detected an occurrence of IP Packet Loop, in the VMware vSphere ESXi Server hosted by IIJ Service Facility. You will be notified by us when Network Interface is suspended. Please eliminate IP Packet Loop. If you need to activate Network Interface, please contact IIJ GIO Global Support Center.VM Communication Network will place a limit on the number of IP Packet allowed to be transmitted by that Server on that facility, when the broadcast packet of VMware vSphere ESXi Server, hosted by IIJ Facility, exceeds a certain amount of value (per server).

When these packet numbers fall below a certain amount of value, such limit will be lifted. Also, if these packet numbers have not fallen below certain value after a certain timeframe, we will inform you about this.

■ Restrictions

☐ For VLAN that the Virtual Machine used for communication, please do not use VLAN ID other than the one allocated for VM Communication Network by IIJ.

□ If you built a router on top of the Virtual Machine that you built, and use VRRP or HSRP as a Redundancy Protocol, please do not use Group ID of prescribed range other than what IIJ stipulates.

■ Monitoring and Operation Gateway

It is a gateway that connects IIJ Service Facility with Component VLAN※ and the Management Network. This Gateway is provided for the subscription of IIJ UOM Service.
※Connect via Component VLAN2

■ Upon Signing Up for the Service - Initialization

Upon your signing up for the Service, IIJ will carry out the following initialization.
・A package providing a configuration and optional items and complying with the terms and conditions as stated in Feature Specifications.

On the other hand, you are required to carry out each item and optional service as set forth clearly in 「Notes」 and 「Things you have to do」.

Support Specifications

■ IIJ GIO Global Support Center

The Global Support Center handles all inquiries on how to use the service by e-mail, except for emergency calls when the system may be down. Support Center is available in both English and Japanese.

| Technical Issue Enquiry

Reception Hours	Throughout the year, 24 / 7
Contact Information	E-mail: support@egb.iijgio.com
Types of Enquiry	Service specifications
	More information on service content
	Other technical inquiry regarding the service
Supported Languages	English, Japanese

| General Enquiry about the Service

Reception Hours	Throughout the year, 24 / 7
Contact Information	E-mail: sales@egb.iijgio.com
	Please contact IIJ sales representative.

Types of Enquiry	
	Changes, Termination, Request, Customized Order of items in the Contract Agreement General Enquiry concerning the Service
Supported Languages	English, Japanese

Required Information for Inquiry

When making an enquiry, please ensure you have the following with you.

Required Information	Person-in-charge's Information
	Service Code

■ Emergency Contact

Emergency Contact Reception Point for Subscribers

Please direct your enquiry to the Operation Management Personnel to whom you registered the Service with.

Reception Hours	Throughout the year, 24 / 7
Contact Information	Emergency Telephone Contact available. Telephone numbers can be found in the 「User Manual」 given to you upon signing up
Types of Enquiry	Occurrences of error on your Contract Service Platform
Supported Languages	English, Japanese

■ Support Scope

Support will be carried out, for failure concerning Unique Specifications for using the following products, by IIJ GIO EU Service:

・VMware vCenter Server
・VMware vSphere Client
・VMware vSphere Command-Line Interface
・VMware vSphere Web Client Server
・VMware vSphere ESXi

Support will be carried out, for failure concerning Unique Specifications for using the following products, by Microsoft Corporation or its entity in that country:
（Please make a separate Support Contract with Microsoft Corporation or its entity in the country）

・Microsoft Windows Server （including DNS Server)
・Microsoft SQL Server

■ Maintenance

Maintenance is conformed to IIJ GIO EU Service's maintenance Spec. For more info, please refer to 「IIJ GIO EU Service specifications」.

■ Notes

- □ Kindly take note that enquiry from any person other than operation management person-in-charge will not be entertained, due to security concerns.
- □ You may be required to switch off all the features while regular or emergency maintenance is performed.
- □ After IIJ GIO EU Service is delivered to you, you are responsible for security vulnerabilities.

Applying, Changing and Terminating a Contract

■ After Registration to First Use

| Time taken before servicing

The number of days taken from the time you first register for this Service until the registration is complete is given as follows.

The number of days, required before provision of Service, is effectively counted from the next working day, after all requirements for applications and configurations are received by IIJ.

Service	Contract Content	Time Required
Virtualization Platform VW Series	All Types	10 business days※

※These figures are based on IIJ track record. It does not indicate that, for every case, the same duration of time (as stated above) will be required.

| The Flow Process of Service Process

IIJ will explain about this Service. The following is the flow of process after you have registered your information with us.

1	Service application

▼

2	Registration of customer information

▼

3	Contract Procedures

▼

4	Receiving of server configuration completion notification

▼

5	Receiving of account (ID, pass) accessible for service

▼

6	Start of service
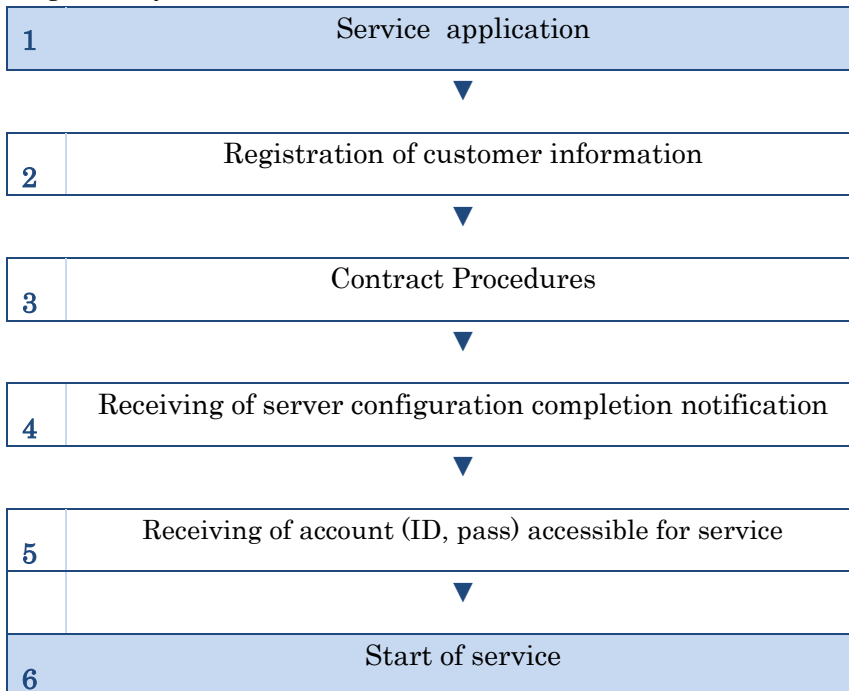
| Things that will be sent to you:

We will provide the following information via mail or via document portal.

- □ IIJ GIO EU Service – Registration Completion Notice
- □ IIJ GIO EU Service – Configuration Sheet
- □ IIJ GIO EU Service – User's guide
- □ IIJ GIO EU Service – Virtualization platform Service Specifications (this manual)

| Time taken for Changes or Termination of services

Processing time required for the application of changing or terminating each Service, is as shown below.

The time required is effectively counted from the next working day, after all requirements for applications and configurations are received by IIJ.

Service	Contract Content	Time Required
Virtualization Platform VW Series	All Types	5 business days※

※These figures are based on IIJ track record. It does not indicate that, for every case, the same duration of time (as stated above) will be required.

■ Charging start time

- □ You will be charged starting from the day the Service is provided, incurring a monthly fee.
- □ Initial Expenditure will be charged upon your account, during which the first monthly fee is payable.
- □ For the first month upon signing up for the Service and the last month prior to termination of the Service, you will be charged at the prorated amount based on the number of days of the particular months, taking the billing start date as the initial date for calculation.

■ Minimum Contract Period

The Minimum Usage Period for this Service is 1 month. If you terminate the Contract within the minimum usage period, you will be charged a lump sum of fees as set forth in the Contract by IIJ. For minimum usage period for IIJ GIO EU Services other than Virtualization Platform, please refer to the respective Service specifications.

■ Termination Process

- □ After termination date, you can no longer access to the service using Remote Access.

□ After termination date, all data concerning this Service will be deleted. After these data have been deleted, they can no longer be restored.

■ Required Reference Documents

IIJ GIO EU Service Terms and Conditions

■ Warranty Limitation

This document is not intended to guarantee that the service will always be available for use.

Revision History

Version	Date of Revision	Descriptions
0.9	2014/10/17	Newly created

IIJ GIO
EU Service

2014/10/18 Ver. 1.2

IIJ
Internet Initiative Japan

Internet Initiative Inc.

Content

Service Outline

■ Network Add-on Outline

IIJ GIO EU Service Network Add-on (will be referred to hereinafter as the Add-on Service) IIJ GIO EU Service provides various forms of Network Features to Base Server (will be referred to hereinafter as Base Server) and IIJ GIO EU Service Virtualization Platform (will be referred to hereinafter as Virtualization Platform).
You will be able to use various Network Connections, Internet or private network, that match your system.

■ Network Add-on Composition

| Available Features

This Add-on Service provides the following features.

- □ **VLAN**
- □ **IP ADDRESS**
- □ **DNS Reverse Settings**
- □ **Internet Connection**
- □ **Cross-Connect Gateway**
- □ **Firewall**
- □ **Load Balancer**
- □ **Private Connection**
- □ **SEIL/x86**

| Component

This Add-on Service, in the provided Network Features, contains these following Components.

- □ **VLAN**
  Segment for connecting Virtual Machine on Base Server and Virtualization Platform with other Network
- □ **IP ADDRESS**
  IP ADDRESS assigned to VLAN Component
- □ **DNS Reverse Settings**
  Set Global IP Address provided by IIJ to Reverse
- □ **Internet Connection**

Internet Connection shared among clients
- **Cross-Connect**
  Service that locally connects your device installed in the rack provided by IIJ Data Center Service with IIJ GIO EU Service
- **Firewall**
  Network Feature that controls access within communication between Internet and Virtual Machine on Base Server and Virtualization Platform
- **Load Balancer**
  Network Feature that distributes load within communication between Internet and Virtual Machine on Base Server and Virtualization Platform
- **Private Connection**
  Feature that ensure secure connection from your location to IIJ GIO EU Service

■ Term Description

Term	Explanation
Service Code	ID for authentication purpose at IIJ GIO Global Support Center
FQDN	In short for Fully Qualified Domain Name. Domain name that includes all areas without omitting the host name and the domain name. E.g., www.example.jp is FQDN that has specified both www (host name) and example.jp (domain name).
Closed network	Closed Network that uses private line
FW	In short for Fire Wall. Network quarantine the communication across networks, to prevent unwanted communication.
NAT	In short for Network Address Translation. A mechanism that when routing IP Packet converts Destination or Source IP ADDRESS contained within the Packet Header into another different IP ADDRESS, In general, it matches a unique IP ADDRESS to a single server of an actual IP ADDRESS.
LB	In short for Load Balancer. Provides feature which reduces load by dispersing large amount of accesses into multiple servers.
NAPT	In short for Network Address Port Translation. . A mechanism that when routing IP Packet converts Destination or Source IP ADDRESS contained within the Packet Header into another different IP ADDRESS. Unlike NAT, it can match a unique IP ADDRESS to multiple servers of an actual IP ADDRESS. (able to use different Port Number with one IP ADDRESS)

Term	Explanation
VPN	In short for Virtual Private Network. Connection Service that is able to make use of open networks such as the Internet and PSTN like a leased-line by using authentication and encryption for sending and receiving data.
Component VLAN1	This segment forms a connection path when connecting Virtual Machine on a Virtualization Platform to other Network,

■ Restrictions

Restrictions may differ depending on the Component that you contracted. For more details, please refer to Notes written in each respective component of "Feature Specifications".

■ Information provided by you

| Configuration Sheet

These are necessary configuration information when using this Add-on Service. Please provide the following information in the Configuration Sheet to sign up.

- □ VLAN Configuration Information.
- □ Cross-Connect Application Information
- □ Firewall Application Information
- □ Load Balancer Application Information
- □ Internet VPN Application Information
- □ SEIL/x86 Application Information

■ Information provided to you

| IP ADDRESS Information

Private IP ADDRESS Information assigned from IIJ and a number of Global IP ADDRESS which you had sign up.

| Default Gateway Information

Default gateway information of Global IP ADDRESS Segment

Service Terms & Conditions

■ Provision conditions

Upon using this Add-on Service, this contract also requires you to sign contract for Base Server or Virtualization Platform.

Feature Specifications

■ VLAN

| Feature Outline

This is a segment for connecting your Virtual Machine on IIJ GIO EU Service to other Network.

Type	Description
Internet VLAN	Provide a segment for Base Server, Virtual FW, Virtual FW+LB, and Internet VPN used for Internet Connection.
Internet VLAN/VW	Provide a segment for Virtualized Platform used for Internet Connection.
Private VLAN	Provide local segment for connecting Virtual Machine and Virtual FW, Virtual FW+LB, Internet VPN、Cross-Connect between Base Servers, between Base Server and Virtual Machine or Base Server on Virtualization Platform.
Monitoring VLAN	Providing a segment for monitoring Base Server

| Notes regarding VLAN

When using VLAN, please take notes of the following.

➢ Internet VLAN

- ☐ You cannot use the Global IP ADDRESS you have acquired.
- ☐ You will contract Global IP ADDRESS on a segment-by-segment basis (/26, /27, /28, /29).
- ☐ If Global IP ADDRESS is required in addition, because it is not allowed to extend the segment of your contract, you may need to contract with another segment. (possible number of different contract segment is only 1)

➢ Internet VLAN/VW

- ☐ You cannot use the Global IP ADDRESS you have acquired.
- ☐ You will contract Global IP ADDRESS on a segment-by-segment basis (/26, /27, /28).
- ☐ If Global IP ADDRESS is required in addition, because it is not allowed to extend the segment of your contract, you may need to contract with another segment. (possible number of different contract segment is only 1)

➢ Private VLAN

❑ VLAN is included in the Base Server Contract.
❑ A Base Server includes two VLANs as default.
❑ Private VLAN consists of "Private VLAN1" that connected with "Firewall", "Load Balancer", "Cross-Connect" of this Add-on, and "Private VLAN2" which can be used for communication between V Series & X Series of the Base Server.
❑ You will have to prepare your own Private IP ADDRESS to be used in the Private VLAN.
❑ In case you sign up Virtualization Platform without Base Server Contract, if you contract Network Add-on which connects to Private VLAN1, Private VLAN1 is provided by default.

➢ Monitoring VLAN

❑ VLAN is included in the Base Server Contract.
❑ A Base Server includes this VLAN as default.
❑ VLAN is used as a segment for Monitoring and Operation.
❑ If you use this VLAN in communication within your network services, there is likelihood that Monitoring may not be correctly performed. For this reason, please do not use it within your network services.
❑ Private IP ADDRESS used on the VLAN will be assigned to you by IIJ segment by segment.

■ IP ADDRESS

| Feature Outline

Types of IP ADDRESS provided by this Add-on Service are as following.

Type	Description
Private IP ADDRESS specified by IIJ	Provides Private IP ADDRESS assigned to the Monitoring VLAN in this Add-on Service
Private IP ADDRESS specified by you	That will be Private IP ADDRESS assigned to Private VLAN in this Add-on Service.
Global IP ADDRESS	Provides Global IP ADDRESS assigned to Internet VLAN/VW in this Add-on Service.

Private IP ADDRESS specified by IIJ

As for IP ADDRESS assigned to Monitoring VLAN, you will be using Private IP ADDRESS provided by IIJ.
IP ADDRESS provides /26(64 Address) to VLAN.

➢ Notes with regard to Private IP ADDRESS specified by IIJ

☐ It will become an address for Monitoring. Please do not change by yourself.
☐ It will be provided from the range of IIJ capacity utilization IP ADDRESS band (10.172.0.0/15).

Private IP ADDRESS specified by you

IP ADDRESS assigned to Private VLAN will be specified by you.

➢ Notes with regard to Private IP ADDRESS specified by you

☐ IP ADDRESS Band (10.172.0.0/15) used in IIJ Equipment will not be available in your equipment.
☐ Allocation segment length around 1VLAN is specified as / 26.
☐ Please acknowledge that IIJ will secure IP ADDRESSES in the segment you specify for the use of our device as shown below:
　・Private VLAN1: IP ADDRESS whose last digit is 2
　・Private VLAN2：IP ADDRESS whose last digit is 1

Global IP ADDRESS

By Contracting Internet VLAN/VW in this Add-on Service, Global IP ADDRESS will be provided. The number of Global IP ADDRESS provided will be determined by the Internet VLAN/VW Contract.

➢ Notes with regard to Global IP ADDRESS

☐ In the Global IP ADDRESS Band that has been paid by segment units, as equipment usage, you will acknowledge that IIJ will secure IP ADDRESS as shown below.
　・Internet VLAN/VW：IP ADDRESS whose last digit is 3

■ DNS Reverse Settings

This will be provided by IIJ. Global IP ADDRESS Reverse Settings will be conducted by IIJ.
Once FQDN has been decided, please apply for DNS Reverse Settings.

■ Internet Connection

| Feature Outline

Provide Internet Connection.
The provided features are:

☐ Internet Connection

| Internet Connection

By signing on Internet VLAN/VW Contract in the Add-on Service, you will also be able to use shared Internet Lines.

| Notes with regards to Internet Connection

When using Internet Connection, please take notes of the following.

☐ As the Internet Connection lines are shared with multiple customers, there is no separate bandwidth guarantee.

■ Cross-Connect

| Feature Outline

The Cross-Connect can connect the network mounted in the rack provided by IIJ Data Center Service as well as that of your equipment etc. with the "Private VLAN1" connected to the base server of IIJ GIO EU service, the "Component VLAN1" connectable to a Virtual Machine on the Virtualization Platform, the "Management Network" connected to the Integrated Management Server provided to the subscribers of the Virtualization Platform, and the VMware vSphere ESXi Server.
IIJ Data Center with functioning Cross-Connect will be specified otherwise by IIJ. For more detail, please contact IIJ Sales Representative.
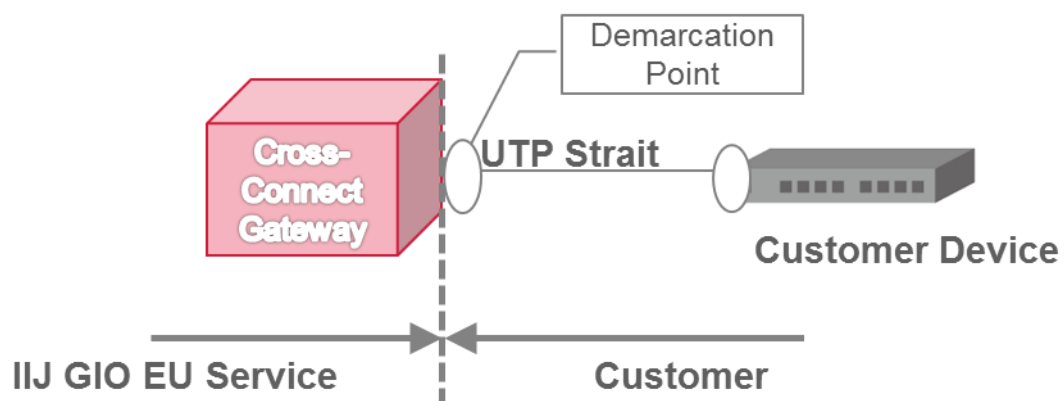
IIJ GIO EU Service

| Network Structure

Example of Network Structure is displayed below.
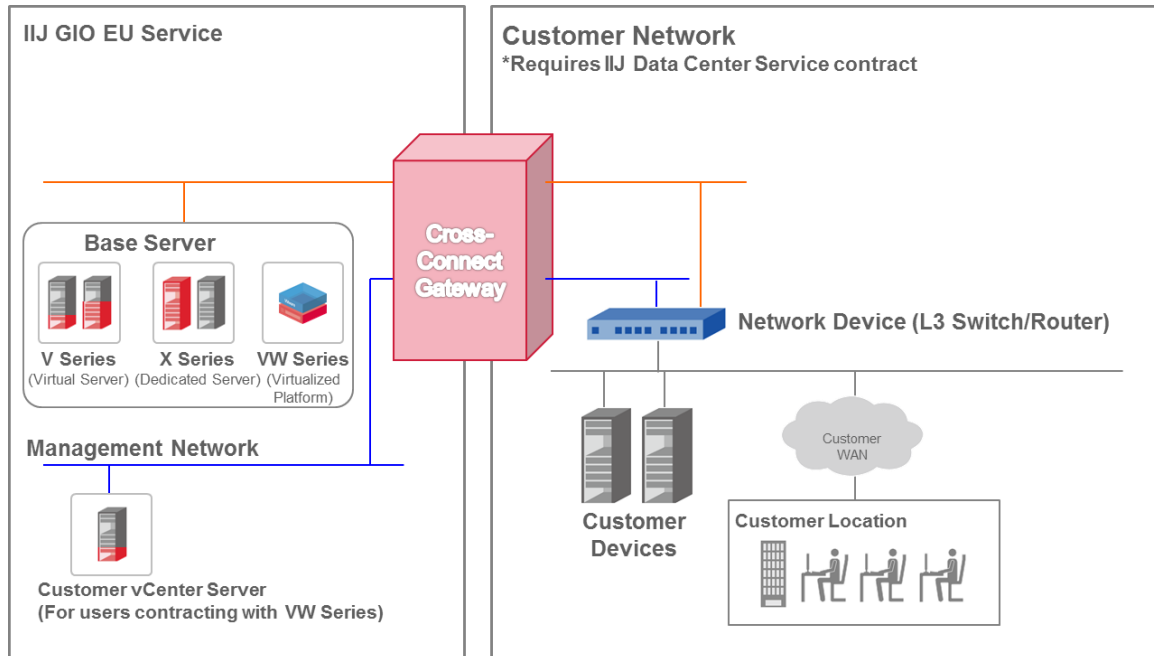
| Demarcation Point (when connecting to your own device)

The scope of this service is up to the point when connecting your device with "Cross-Connect Gateway".

| Notes with regard to Cross-Connect Gateway

- Connection Destination by IIJ GIO EU Service side is only "Private VLAN1" and "Component VLAN1" or "Management Network".
- For connection to Cross-Connect, it is necessary to connect using device that has L3 Feature. Therefore, you also need to get a device with L3 Feature.
- With regard to routing control between your equipment and the Network, please make routing on your own L3 devices if necessary.
- IP ADDRESS Band (10.172.0.0/15) used in IIJ Equipment cannot be used by your equipment. You will need to use another IP ADDRESS or NAT on your own L3 Device.
- Each 1 contract is assigned with 4 connection ports, 2 of which are used for "Private VLAN1" and "ComponentVLAN1" and another 2 ports are for "Management Net-work".
  (For the purpose of route redundancy, two ports are assigned on each segment. If in the case of the 2 Port meant for redundancy purposes are directly connected to the route via your own NW Device, loop configuration will be formed inside the same segment. Therefore, please understand that one side of the port will be automati-cally linked down. But, the remaining 1 port will still continue to run as per normal. To link up the port that has been linked down, please contact "IIJ GIO Global Support Center".)
- For the built-in line that connects your equipment with this Add-on Cross-Connect Gateway, you will need to separately make an arrangement for another contract for that line to be provided by IIJ Data Center Service.
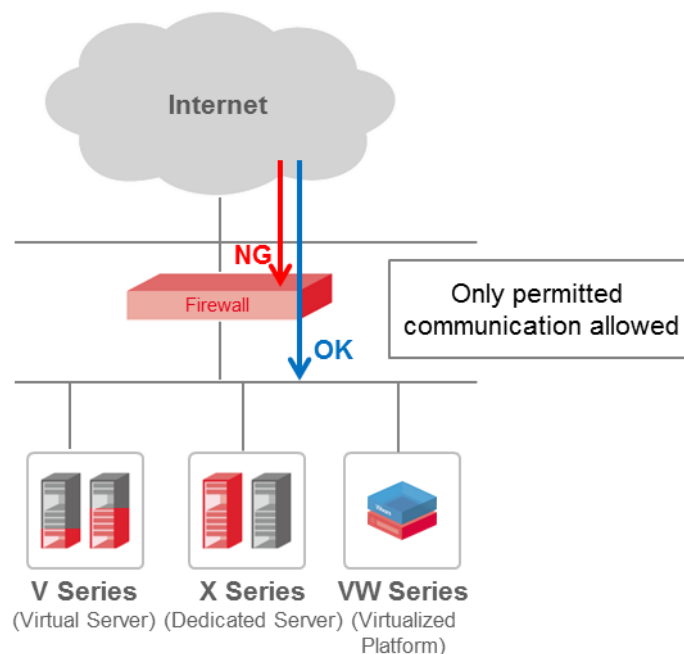
■ Firewall

| Feature Outline

We provide you a firewall with Access Control Feature, between Internet, Base Server and Virtual Machine on the Virtualization Platform. With this Firewall, you can prevent unwanted communication by presetting which communication to be allowed. In addition, we also provide one Centralized Communication Control for your server which you no longer have to set control on each respective server.
The available features are:

- □ Virtual FW
- □ Virtual FW Redundancy Configuration

| Virtual FW Feature

Provide you with exclusive Virtual Firewall. "Virtual FW" set rules that combines the following elements, allowing only the communication that follow these rules to pass through.

➢ Packet filtering

Based on the following rules, you may configure up to maximum of 10 rules.
- □ Sender IP ADDRESS
- □ Destination IP ADDRESS

- Communication Protocol and Port Number

> NAT

When communicating with Internet, NAT will be activated on your Private IP ADDRESS.

Virtual FW Redundancy Configuration

We provide "Virtual FW" in Redundancy Configuration. During device failure it will automatically switch to a standby device. This greatly helps to reduce down time.

Virtual FW Monitoring

This implements Device Monitoring by ping on "Virtual FW" Equipment, while "Virtual FW Redundancy Configuration" carries out monitoring according to the switching on and off of the active devices.

Virtual FW Logs

Communication Logs of when each communication was rejected by Firewall are stored up to 1 month. With regards to Communication Log Display, please direct your query to "IIJ GIO Global Support Center".

Notes with regard to FW

- You will need to contract "Internet VLAN" to use it.
- For using it on Virtual Machine on Virtualization Platform, you will need to contract "Component VLAN1".
- You cannot have an access control from internet on your equipment along Cross-Connect Gateway route by using Virtual FW.
- IIJ shall configure Firewall Rule based on your request.
- Connection between Virtual FW and Base Server will be via "Private VLAN1", while connection between Virtual FW and Virtual Machine on the Virtualization Platform will be via "Private VLAN1" and "Component VLAN1".
- When contracting Base Server V Series and X Series, if you will be using Virtual FW, please make application such that the Base Server Default Route can suit the Virtual FW.
- If you are already on Base Server Contract and will be using Virtual FW in addition, you need to change your Base Server Network Setting on your own.
- If you will be using Virtual Machine on the Virtualization Platform, you need to change the Virtual Machine Network Setting on your own.
- Communication permission rules required for monitoring will be automatically set. These rules shall take precedence over the rules that you have set.
- You cannot contract more than one Component. (However, if you contract Internet VLAN/VW in another segment in order to add a Global IP ADDRESS, you can contract a new Component to that segment.)

- We do not guarantee you available bandwidth and the performance.
- For Communication Log, only the Log Data will be provided.

■ Load Balancer

| Feature Outline

Load Balancer Feature is for communication between the Internet and Base Server and Virtual Machine on the Virtualization Platform. It centralizes management of access for Base Server from Internet, and distributes the process over multiple Base Servers, enabling it to respond flexibly to high load traffic processing. In addition, by using NAPT in the communication from your server to the Internet, you can save on the Global IP ADDRESS.

The available features are:

- Virtual FW+LB
- Virtual FW+LB Redundancy Configuration
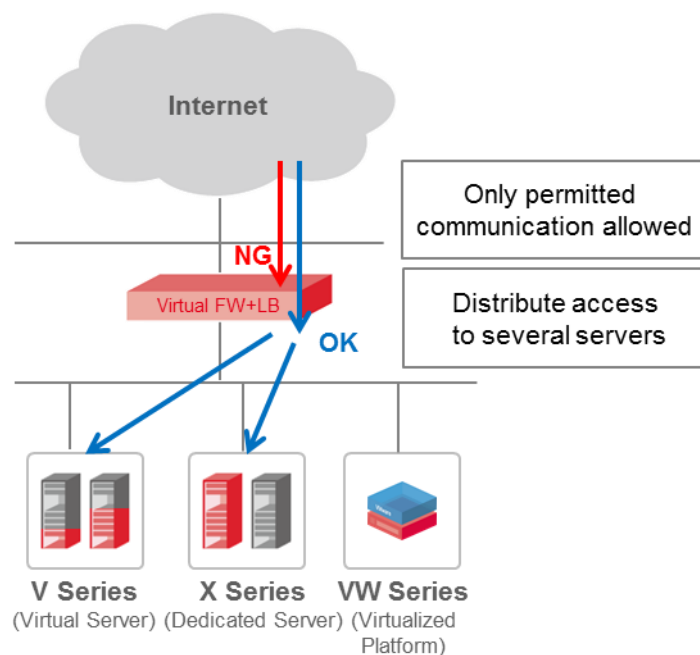
| Virtual FW+LB Feature

Providing you with Virtual Firewall and Virtual Load Balancer exclusively for you."Virtual FW+LB" makes use of the following features, enabling you to disperse processing of communication in your server.

➢ Packet filtering and Load Balancing

Providing Packet filtering and Load Balancing Features. With regard to Packet filtering, please refer to section on "Virtual FW". Lists below are the load-distribution methods that Load Balancing provides.

Feature Name	Feature Items	Feature Description
Load distribution	Round Robin	Method of equal access to the pool server
	Weighted Round Robin	Round robin method that allows you to specify access proportion to each server pool
	Minimum Connection	Method to access the server with as least number of connections as possible
	IP Hash	access based on the hash value calculated from source and destination IP ADDRESS
	URI	Method to determine the server to be accessed based on the URI
Session maintenance	HTTP：Cookie Embedding	Maintenance using Cookie and ensure access from the same client to the same server. Only OHTTP Access is usable.
	HTTPS: SSL Session ID	Maintenance using SSL Session ID to ensure access from same client to the same server. Only HTTPS access is usable.
Health check	TCP（Per port basis）	Attempt to connect to specified TCP Port Number and remove failed server from the Load Balancer at once
	HTTP	Check the specified URI response, and exclude it from the pool server if no response
	HTTPS	Check the response by SSL Communication, and exclude it from the pool server if no response

➢ NAPT

In the Outbound Communication from your server to the Internet, you can enable NAPT on your Private IP ADDRESS. (By using NAPT in the communication from your server to the Internet, you can save on the Global IP ADDRESS.)

| Upper limit value of the virtual FW + LB Setup

Following Setup Number Upper Limits are provided.

Setup items	Setup Number Limit	Remarks
Load balancing settings	10 Set	Setup to distribute the signal received by the Load Balancer to the server under control. A combination of Pool Servers and IP ADDRESS for receiving signal will be taken as 1set. one Global IP ADDRESS required per 1 set
Pool server	Unlimited	Set up the Server group under the control of Load Balancer which forms load distribution destination

| Virtual FW+LB Redundancy Configuration

We provide "Virtual FW+LB" in Redundancy Configuration. During device failure it will automatically switch to a standby device. This greatly helps to reduce down time.

| Virtual FW+LB Monitoring

This implements Device Monitoring by ping on "Virtual FW+LB" Equipment, while "Virtual FW+LB Redundancy Configuration" carries out monitoring according to the switching on and off of the active devices. Upon detecting an alert, an alert mail will be sent to contact destination recorded in "Person-in-Charge Information".

| Notes with regard to Virtual FW+LB

- You need to contract "Internet VLAN" in order to use this.
- For using the Virtual Machine on Virtualization Platform, you need to tract "Component VLAN1".
- Using Virtual FW+LB, you cannot implement load balancing on your equipment via "Cross-Connect".
- IIJ shall configure Load Balancer based on your request.
- Connection between Virtual FW+LB and Base Server will be via "Private VLAN1", while connection between Virtual FW+LB and Virtual Machine on the Virtualization Platform will be via "Private VLAN1" and "Component VLAN1".
- When contracting Base Server V Series and X Series, if you will be using Virtual FW+LB, please make application such that the Base Server Default Route can suit the Virtual FW+LB.
- If you are already on Base Server Contract and will be using Virtual FW+LB in addition, you need to change your Base Server Network Setting on your own.
- If you will be using Virtual VW+LB on the Virtualization Platform, you need to change the Virtual Machine Network Setting on your own.

- You cannot contract more than one Component. (However, if you contract Internet VLAN/VW in another segment in order to add a Global IP ADDRESS, you can contract a new Component to that segment.)
- You will not be notified about Health Check Failure.
- Permission rules for communication signal necessary will be automatically set. These rules shall take precedence over the rules that you have set.
- We do not guarantee you available bandwidth and the performance.
- SSL off Load Feature is not provided.
- When accessing the Base Server or Virtual Machine on Virtualization Platform via Load Balancer, Connection Source (Client Terminal) Address will be replaced to Load Balancer to reach the server. When responding from server to Connection Source, Base Server Address will be overwritten to LB Address.
- Global IP ADDRESS (NAT IP ADDRESS) already used in Virtual FW cannot be used as NAPT IP ADDRESS.

## ■ Private Connection

| Feature Outline

Provide Private Connection Feature from your location to IIJ GIO EU Service. Secure access to Base Server and Virtual Machine on Virtualization Platform.
The available features are:

- □ Internet VPN
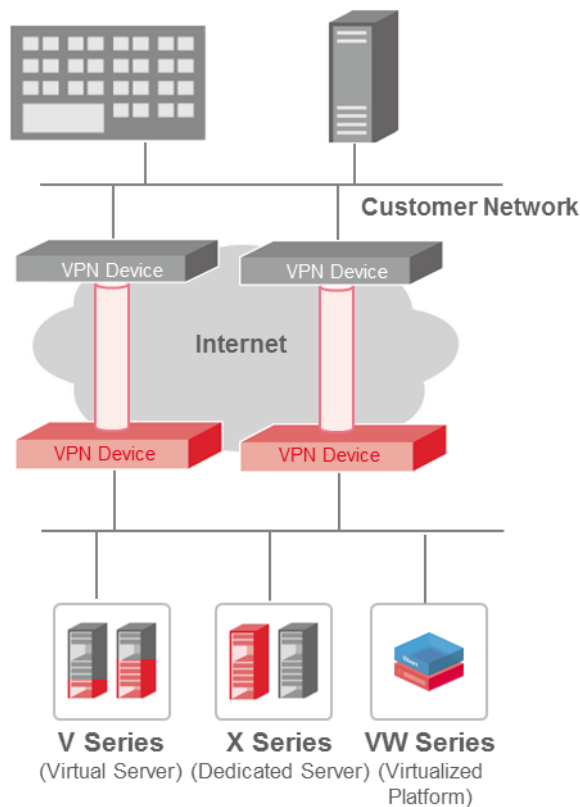- □ Internet VPN Redundancy Configuration

| Internet VPN Feature

Build your Internet VPN Terminating Device in IIJ GIO EU Service Virtual Environment. Secure connection by Internet VPN is possible by connecting from your equipment to the Component.


Customer Network

VPN Device

Internet

VPN Device
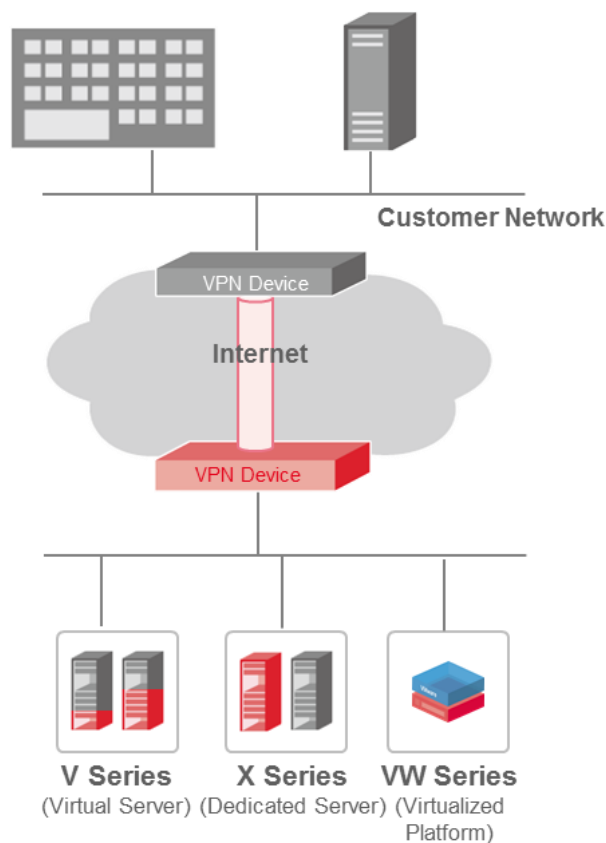
| V Series | X Series | VW Series |
| (Virtual Server) | (Dedicated Server) | (Virtualized Platform) |

| Internet VPN Redundancy Configuration

We provide "Internet VPN" in Redundancy Configuration. During device failure it will automatically switch to a standby device. This greatly helps to reduce down time.

Customer Network

VPN Device

VPN Device

Internet

VPN Device

VPN Device

V Series
(Virtual Server)

X Series
(Dedicated Server)

VW Series
(Virtualized Platform)

Internet VPN Demarcation Point

The Scope of this Service covers up to IIJ Internet VPN Terminating Device and Internet Connection Point. It will not cover Terminating Device at your location, Device Setting and Device Monitoring.

Internet Gateway

Service VPN Device

Internet

Customer VPN Device

IIJ GIO EU Service

Customer
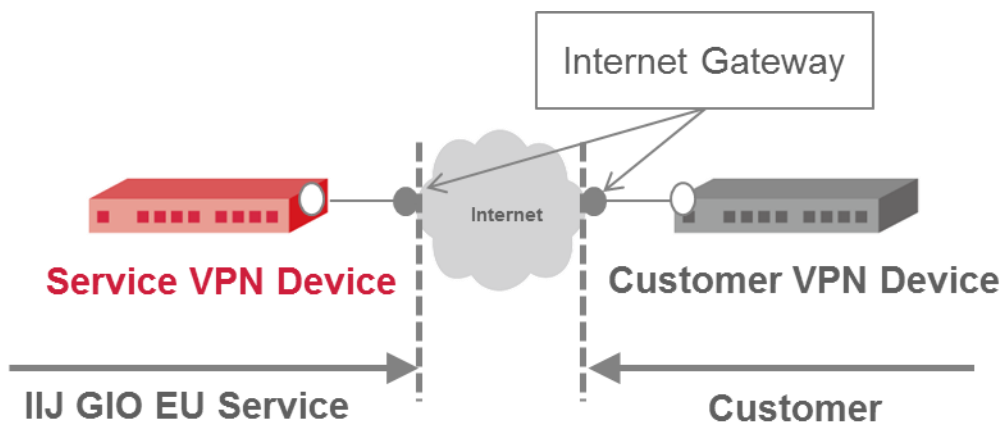
| Internet VPN Connection Specification

Compatible with the following IPSec Connection Method

➢ ISAKMP SA (IKE Phase1) Parameter

Setup items	Setting value
Authentication method	Pre-shared keys
Cryptographic algorithm	AES(128bit)
Hash algorithm	SHA1
DH Group	Group 2 (1024bit)
Lifetime	86400 sec (1 day)
Keep-alive	Disable
Key exchange mode	Main mode

➢ IPSEC SA (IKE Phase2) Parameter

Setup items	Setting value
Encapsulation mode	Tunnel Mode
Security protocol	ESP
Cryptographic algorithm	AES(128bit)
Authentication algorithm	HMAC-SHA1
Lifetime	3600 sec (1 hour)
PFS	Disable

| Internet VPN Monitoring

Execute ping Monitoring on the "Internet VPN" Equipment

Notes with regard to Internet VPN

- You need to contract "Internet VLAN/VW" to use this.
- To use on Virtual Machine Virtualization Platform, you will have to tract "Component VLAN1".
- Private Transmission using Private Internet VPN via "Cross-Connect" onto your machine cannot be made.
- Before application, we ask for your Network Environment. Please note that there may be circumstances that we cannot process your application due to your Network Environment.
- We also offer Test Environment which you can try VPN connection from your equipment to IIJ equipment. If you wish to do some testing before applying for the Service, please contact IIJ Sales Office.
- Connection between Internet VPN and Base Server will be via "Private VLAN1", while connection between Internet VPN and Virtual Machine on Virtualization Platform will be via "Private VLAN1" and "Component VLAN1".
- We also carry out performance testing on the following devices. However, because the settings and device version may have different environment, we do not guarantee proper connection.
  - Cisco 892
  - Juniper SSG 5
  - Fortigate 60C
- We do not guarantee you available bandwidth and the performance.
- IP ADDRESS Band (10.172.0.0/15) used in IIJ Equipment cannot be used by your equipment. You will need to use a different IP ADDRESS or NAT.
- During Redundancy Configuration, when communication between IIJ VPN Device and your Equipment is lost, it will be switched to the Backup Device. Please specify your equipment IP ADDRESS for verification purpose in the settings sheet. In addition, we also request that you switch communication between devices to trigger and set as trigger in the same manner for Redundancy Configuration in your device.
- For every 1 "Internet VPN" Contract, we provide 1 Virtual VPN Device. During Redundancy Configuration, 2 Virtual VPN will be provided.
- This Service Device will set your location to as the default route. We do not provide routing configuration for each individual IP ADDRESS in your location.
- For Base server that uses Internet VPN and Virtual Machine on Virtualization Platform, you have to implement routing configuration on your own.

■ SEIL/x86

Feature Outline

Incorporating Software router SEIL/x86 which is developed by IIJ, this service provides gateway function for users to access Base Server through Internet. The configuration is done by customer own or IIJ engineer. SEIL/x86 is used for various ways such as router, firewall, VPN center and remote access server.
Please refer to http://www.seil.jp/product/lineup/seilx86/ for detailed information.
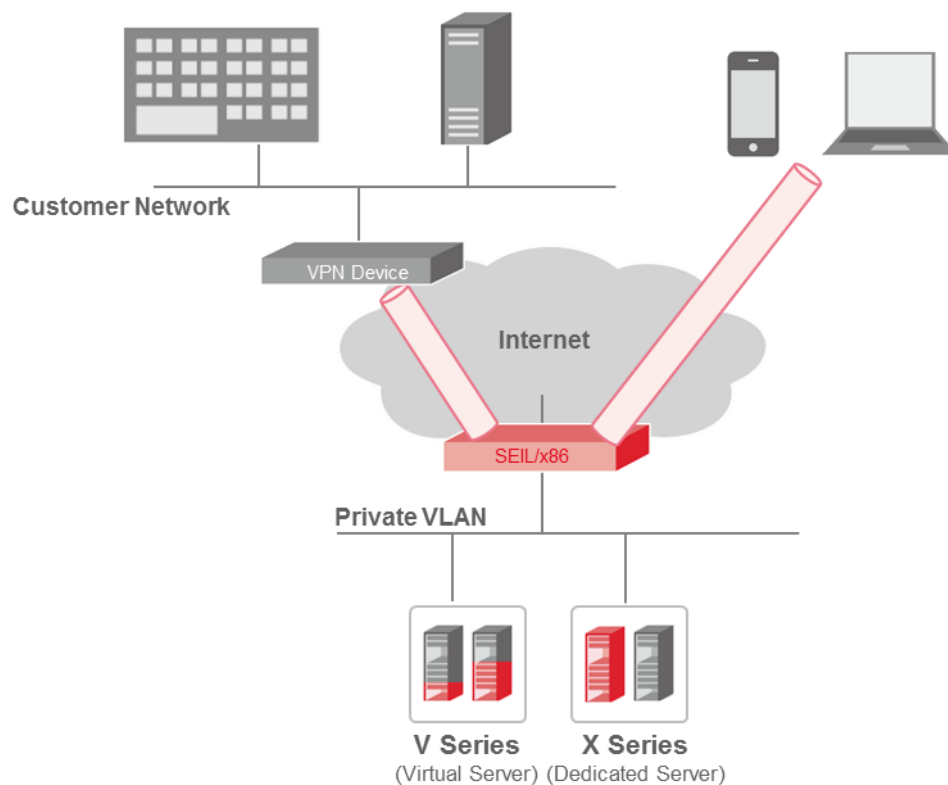
Following is the providing menus;

Menu	Explanation
SEIL/x86(Type-A)	This is the model that assigns virtual machine resource SEIL/x86 which enables about 60Mbps through put.
SEIL/x86(Type-B)	This is the model that assigns virtual machine resource SEIL/x86 which enables about 30Mbps through put.
SEIL/x86(Type-C)	This is the model that assigns virtual machine resource SEIL/x86 which enables about 15Mbps through put.
Gateway Option	Option menu for Type-A, B, C. When SEIL/x86 is used for internet access, users are required to add this option.

* VPN throughput does not guarantee the performance, it is a guideline. VPN throughput is reduced also by the use of non-VPN function with SEIL/x86.

Connecting VLAN and Interface

Provide interfaces that can connect to following VLAN as the same as Base Server. The bandwidth available is share 1Gbps.

➢ Internet VLAN

Internet VLAN contract is required to communicate to SEIL/x86 through Internet. You can use Internet VLAN which comes with the Base Server contract.

➢ Private VLAN

It connects to two private VLAN (Private VLAN1, Private VLAN2). Via each VLAN, contracted Base Servers and other Network Add-on, Cross-Connect Gateway can be communicated. Customer can bring in Private IP ADDRESS.

➢ Monitoring and Operation VLAN

This VLAN is used when Monitoring and Operation service is contracted. This is not for customer use.

Management Methods

➢ SACM Linkage

This service can be linked with IIJ's unified network management system "SACM". With that management system, SEIL/x86 and distributed VPN devices are collectively managed and it enables seamless control for network and base server environments. Please refer to http://www.sacm.jp/ for more information.

➢ Console via Web Client, Power ON/OFF

Web based control function is provides as same as the base server. This console is connected from different route other than each interface. Thus it enables safe management without any impact from limitation that you configure for each interface. When using this console, you are required to connect SSL-VPN that IIJ designates.

SEIL/x86 Service Demarcation Point

SEIL/x86 is provided on Service platform virtualized environment. When it shut off due to hardware failures, it automatically recovers. To make use of SEIL/x86 functions, configuration work is required.

Notes with regard to SEIL/x86

□ You need to contract "Base Server" and "Internet VLAN" to use this.
□ You can contract several SEIL/x86s.
□ This is delivered powered off. When you first use this service, Power on operation is required through management console.
□ When you connect your device in the Rack provided by IIJ Data Center Service with the V Series, you are required to subscribe to a "Cross-Connect Gateway ", an

add-on network service provided by IIJ GIO EU Service. Also, you will need to have a device that comes with the L3 feature. Communication will be connected through your device. You cannot connect both with the same VLAN.

- In case there is hardware or software error occurring in this Service, and an error occurring to the hypervisor, your Virtual Machine will be forced to shut down and shifted to another hypervisor to be reactivated. Please note in that case, configuration which is not saved will be lost.
- We do not guarantee you available bandwidth and the performance.
- If it is detected that the SEIL/x86 that you contract generates a high volume of traffic to the level that hinders other Service Users, your traffic may be controlled to the level that will not cause any problems to the Service.
- Change menu type is operated without requiring you to shut down SEIL/x86.
- "Gateway option" contract is required when you communicate other than below;
  - VPN
  - Communication that originated at Base Server or target at Base Server.
- We provide the latest version only.
- It is customer's responsibility to update firmware after delivery.
- Due to the platform limitation, SEIL functions below are not be used. If we detect that those functions are used, we may sustain the service.
  - L2TPv3 configuration
  - VRRP virtual MAC function (Configuration which is not using virtual MAC is allowed)

Support Specification

■ IIJ GIO Global Support Center

Except for urgent inquiry, e.g. Service cannot be used or it seems to have error, all queries shall be made to us by email. Services are available in both Japanese and English.

| Technical Issue Enquiry

Reception Hours	Throughout the year, 24 / 7 Your enquiry will be responded at about 9:00～17:00 JST（IIJ working days）
Contact Information	E-mail: info@sg.iijgio.com
Inquiry About	Service Available Specification Clarifying the Points written in the Service Explanation Details Other Technical Inquiry concerning the Service
Languages Support	Japanese, English

| General Enquiry about this service

Reception Hours	Throughout the year, 24 / 7 Your enquiry will be responded at about 9:00～17:00 JST（IIJ working days）
Contact Information	E-mail: sales@sg.iijgio.com Please contact IIJ sales representative。
Inquiry About	Changes, Termination, Request, Customized Order of items in the Contract Agreement. General Enquiry concerning this Service
Languages Support	Japanese, English

| Required Information for Inquiry

When making an enquiry, please ensure that you have the following with you.

Required Information	Person-in-Charge Contact Service Code

IIJ GIO EU Service

■ **Emergency Contact**

| Emergency Contact Reception Point for Subscribers

Please direct query to Operation Management Personnel whom you registered with.

Reception Hours	Throughout the year, 24 / 7
Contact Information	Emergency Telephone Contact available. Telephone numbers can be found in "User Manual" given to you when you sign on
Inquiry About	Any occurrence of error within your contracted service
Languages Support	Japanese, English

■ **Maintenance**

Maintenance is conformed to IIJ GIO EU Service Maintenance Specification.
∗For more information, please refer to "IIJ GIO EU Service Specification" .

■ **Notes**

□ From the point of view of ensuring security, inquiry from any person other than operation management person-in-charge will not be entertained.
□ By regular or emergency Maintenance, some or all features may cease functioning.
□ You are not allowed to change Host Name and IP ADDRESS. When you apply for Base Server, please specify an appropriate Host Name and IP ADDRESS.

Registration/Changes/Termination

■ From registration up to before using
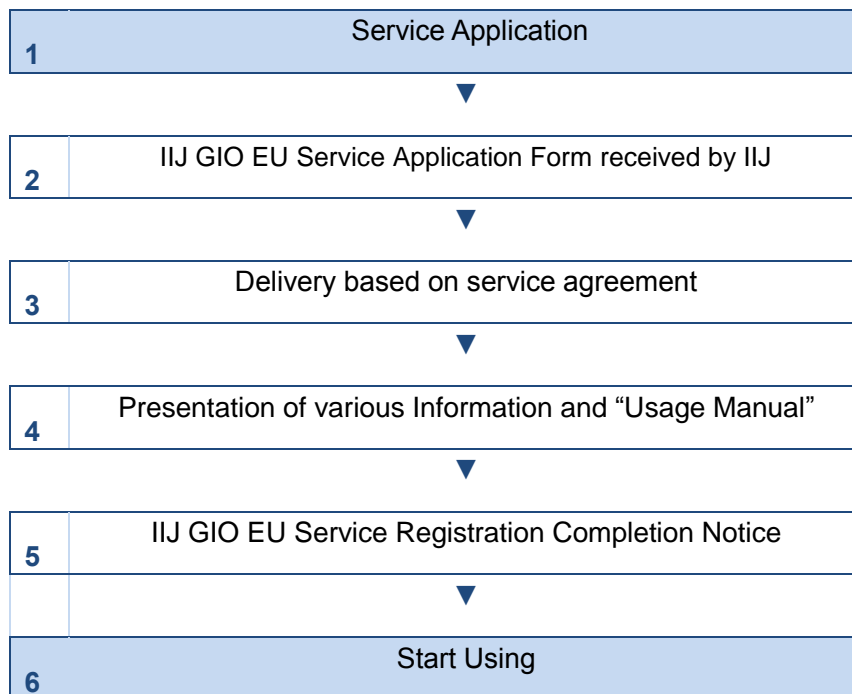
| Time taken before servicing

Time taken to start the Service may differ for each type of service. Service Duration is as shown below.
The time required is not inclusive of the day the request is made. It is effectively counted from the next working day that all requirements for applications and configurations are received by IIJ.

Service	Contract Content	Time Required
VLAN	Make new contract	5 working days
Cross-Connect	Make new contract	5 working days
Firewall	Make new contract	5 working days
Load Balancer	Make new contract	5 working days
Private Connection（Internet VPN）	Make new contract	5 working days

※ These figures are based on IIJ track record. It does not guarantee that it will exactly take the same amount of times as stated above.

IIJ GIO EU Service

| The Flow of Service Process

1	Service Application

▼

2	IIJ GIO EU Service Application Form received by IIJ

▼

3	Delivery based on service agreement

▼

4	Presentation of various Information and "Usage Manual"

▼

5	IIJ GIO EU Service Registration Completion Notice

▼

6	Start Using

| Things that will be sent to you

We will provide you the following information via mail

- ☐ IIJ GIO EU Service Registration Completion Notice
- ☐ IIJ GIO EU Service Configuration Sheet
- ☐ IIJ GIO EU Service User Manual
- ☐ IIJ GIO EU Service Specification

| Time taken for Service Changes or Termination

Time taken for Service Changes or Termination may differ depending on Service Type.
Time taken for changing or terminating each Service is as shown below.
The time required is not inclusive of the day the request is made. It is effectively counted from the next working day that all requirements for applications and configurations are received by IIJ.

Service	Contract Content	Time Required
VLAN	Change/Termination	5 working days
Cross-Connect	Change	5 working days
Firewall	Change/Termination	5 working days
Load Balancer	Change/Termination	5 working days
Private Connection (Internet VPN)	Change/Termination	5 working days
SEIL/x86	Change/Termination	5 working days

＊These figures are based on IIJ track record. It does not guarantee that it will exactly take the same amount of times as stated above.

| Notes with regard to Service Changes and Termination

- Upon submission of your Change Request until completion of the Change, we only allow cancelation of request content. If you need changes to the request content, you will have to cancel the entire request content and resubmit your Change Request.

■ Charging start time

- Charging for this service will start from the day the service was provided, incurring a monthly fee.
- Initial Charge will be charged at the same time as the first month fee.
- For the month you sign contract and the month you terminate, you will be charged at the amount that is prorated based on the number of days in that month, taking the billing start date as initial date of reckoning.

IIJ GIO EU Service

■ Charging Unit

This Service Charging Unit is as shown below.

Service	Types	Charging Unit
VLAN	All types	1VLAN
Cross-Connect	All types	1 System
Firewall	All types	1 System
Load Balancer	All types	1 System
Private Connection (Internet VPN)	All types	1 System
SEIL/x86	All types	1 System

■ Minimum usage period

This Service Minimum usage period is as shown below.

Service	Types	Minimum usage period
VLAN	All types	1 month
Cross-Connect	All types	1 month
Firewall	All types	1 month
Load Balancer	All types	1 month
Private Connection (Internet VPN)	All types	1 month
SEIL/x86	All types	1 month

■ Termination Process

- □ Please note that if you re-contract after termination , Global IP ADDRESS that has been given to you previously, may not be assigned to you again.

■ Required reference document

Cloud Service Contract

■ Warranty Limitation

It is not warranty that this service is available at all times.

Revision History

Version	Revision Date	Description
1.00	2014/2/28	Create New
1.1	2014/08/29	・Split Internet VLAN and Internet VLAN/VW ・Add /29 to Internet VLAN menu ・Ease the explanation of Cross-Connect Gateway ・Notes for Cross-Connect Gateway: Add number of connection ports ・Notes for Internet VPN: Add Verified device information
1.2	2014/10/18	・Add SEIL/x86 service