

6.0.0

This guide provides instructions for installing Hitachi Data Ingestor (HDI) on Hyper-V. Instances of HDI installed on Hyper-V are referred to as VMA. This guide is intended to cover applicable virtual machine environment and setting up HDI on Hyper-V.

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1. Overview

1.1. Purpose of this document

This is a guide for installing Hitachi Data Ingestor (HDI) on Hyper-V. Hereafter, instances of HDI installed on Hyper-V are referred to as "VMA". This guide is intended to explain the following information about installation:

- Applicable virtual machine environment
- Procedure for setting up HDI on Hyper-V

1.2. Intended audience

- Users who have a basic knowledge of virtual machine operation by using Hyper-V.
- A person who has acquired knowledge described in Hitachi Data Ingestor User's Guide for Single Node.

1.3. Related document

This guide is based on the following documents:

- Hitachi Data Ingestor Installation and Configuration Guide
- Hitachi Data Ingestor User's Guide for Single Node Configuration
- Hitachi Data Ingestor Single Node Getting Started Guide

1.4. The intended version of HDI

This document revision applies to the installation of Hitachi Data Ingestor version 6.0.0-00 or later.

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1.6. Document Revision History

Revision	Date	Description
1	Nov. 2, 2015	Newly Created
2		
3		

2. Overview of VMA

Hyper-V is a virtual platform environment that runs on Windows Server 2012 R2.

VMA is executed as a guest OS on Hyper-V. VMA, and HDI in a single-node configuration, both provide the same functionality.

2.1. Overview of system configuration

VMA and HDI in a single-node model differ in their hardware requirements. Instead of physical hardware, VMA requires a Windows Server host on which Hyper-V is installed.

Figure 2-1 shows the system configuration of VMA.

Windows Server	
HostOS	
Windows2012 R2	
Hyper-V Hypervisor	
Vertual Machine	
VMA Windows WMA	

Figure 2-1 System configuration components

2.2. Application hardware

Any host that satisfies the following hardware requirements is applicable. Table 2-1 shows the system requirements for the host machine.

#	Item	Configuration
1	Processor	x64-based processor (Intel 64, AMD64)
		Intel-VT or AMD-V is enabled, and data execution
		prevention (DEP) is enabled
2	Host OS	Windows Server 2012 R2
3	Memory for the host OS	12 GB or more
		* Number of guest OSs to be executed simultaneously $\times 8$
		GB + 4 GB or more
4	Storage for the host OS	Amount of storage used by the host $+ 64~\mathrm{GB}$ or more
		* 64 GB is the minimum requirement for a single guest
		OS.
5	Network adapters	2

Table 2-1 System requirements for the host machine

2.3. Differences between VMA and HDI in a single-node configuration

Compared to HDI in a single-node configuration, VMA has the following characteristics:

- Tagged VLAN, link aggregation, line redundancy, and negotiation mode cannot be set in VMA. These functions can be set in the host.
- Performance depends on the load on the Hyper-V host.
- The speed of "Ethernet Interface" in the Network tab of VMA is always displayed as "--".
- The link speed of "Network Interface" displayed when the hwstatus command of VMA is executed is always displayed as "-".
- Media type, Negotiation mode, Speed, and Duplex in the List of Data Ports window of VMA are always displayed as "-".

VMA's performance in hardware failure monitoring is lower than that of HDI in a single-node configuration.

2.4. Supported virtual machine setting values

Table 2-2 shows the supported virtual machine setting values.

			11	5
#	Iter	n	Configuration	Remarks
1	Virtual machir	ne	Generation 1	Generation 2 is not supported.
	generation			
2	Number of pro	cessors	2 or more	
3	Memory		8192 MB or	
			more	
4	IDE controller	s	2	
5	SCSI controlle	rs	1	Multiple SCSI controllers are not supported.
6	Number of	OS LUs	1	Create this item on 0 of IDE controller 0
	virtual disks			(mandatory).
		Shared	1	Create this item on 0 of the SCSI controller
		LUs		(mandatory).
		User LUs	1 to 63	Create this item on 1 to 63 of the SCSI
				controller.
				At least 1 user LU is required.
7	Virtual disk	OS LUs	26 GB or more	Fixed capacity
	capacity (*1)	Shared	36 GB or more	Fixed capacity
		LUs		
		User LUs	2 GB or more	Fixed capacity
8	Disk type		VHD	
9	Network Adap	ters	2	
10	CD/DVD Drive	es	1	Create this item on 0 of IDE controller 1.

Table 2-2 Supported virtual machine setting values

6

 Hitachi Data Ingestor Hyper-V Installation (Guide
Map the ISO image.	

Note:

*1: Virtual disk capacity cannot be extended after installation. Estimate the required capacity of user LUs before installation

3. Hyper-V installation procedure

This section describes the procedure for installing Hyper-V on a host where Windows Server 2012 R2 has been installed.

(1) Start Server Manager	, and then click [Ad	d roles and features]	in the right pane.
--------------------------	----------------------	-----------------------	--------------------

	Server Manager	_ D X
🕞 🕘 🗝 👐 Dashbe	Dard 🔹 🕄 🏲 Manage Iools	<u>V</u> iew <u>H</u> elp
📰 Dashboard	WELCOME TO SERVER MANAGER	^
Local Server All Servers AD DS DNS	1 Configure this local server	=
■ DNS ■ File and Storage Services ▷	2 Add roles and features 3 Add other servers to manage	
	WHAT'S NEW 4 Create a server group	
	5 Connect this server to cloud s	ervices Hide
	ROLES AND SERVER GROUPS Roles: 3 Server groups: 1 Servers total: 1	
	AD DS 1	1

(2) In the Add Roles and Features Wizard window, click the [Next] button in [Before You Begin].

(3) In [Select installation type], select [Role-based or feature-based installation], and then click the [Next] button.



(4) In [Select destination server], select [Select a server from the server pool], select the host machine name from [Server Pool], and then click the [Next] button.

	IOTI SELVET WIN-OKBM3PKA009.hyperv.loci
Before You Begin	Select a server or a virtual hard disk on which to install roles and features.
Installation Type	Select a server from the server pool
Server Selection	 Select a virtual hard disk.
Server Roles	Server Pool
Features Confirmation	Filter:
	Name IP Address Operating System
	WIN-OKBM3PKA009.hy 10.213.138.20, Microsoft Windows Server 2012 R2 Standard
	1 Computer(s) found

(5) In [Select server roles], select the [Hyper-V] check box. Click the [Add Features] button to close the popup window, and then click the [Next] button.

Before You Begin Installation Type Server Selection Server Roles Hyper-V Virtual Switches Migration Default Stores Confirmation Results	Select one or more roles to install on the selected server. Roles Active Directory Certificate Services Active Directory Foderation Services Active Directory Fights Management Services Active Directory Rights Management Services DHCCP Server DHCCP Server NS Server (Installed) Fax Server NE file and Storage Services (2 of 12 installed) Kontrok Policy and Access Services	Destination servers win-OKBM3PGA000 hyperviceal Perception Hyper-V provides the services that you can use to create and manage wirtual machines and their resources Each virtual machine is a virtualized computer system that operates in ar isolated execution environment is allows you to run multiple operating systems simultaneously.
	Print and Document Services Remote Access Remote Desktop Services	

(6) In [Select features], click the [Next] button without changing the default settings.

Select features Before You Begin Installation Type	Select one or more features to install on the selected server. Features	WIN-OKBM3PKA009.hyperv.loc
Server Selection Server Roles Hyper-V Virtual Switches Migration Default Stores Confirmation Results	Image: Second	.NET Framework 3.5 combines the power of the .NET Framework 2.0 APIs with new technologies for building applications that offer appealing user interfaces, protect your customers' personal identity information, enable seamless and secure communication, and provid the ability to model a range of business processes.

(7) In [Hyper-V], click the [Next] button.

(8) In [Create Virtual Switches], click the [Next] button without selecting anything. You will create the network later.

Before You Begin Installation Type Server Selection Server Roles Features	Virtual machines require role, you can create virtu One virtual switch will be at least one virtual switch can add, remove, and mo Network adapters:	virtual switches to communicate with other computers. After ye al machines and attach them to a virtual switch. created for each network adapter you select. We recommend now to provide virtual machines with connectivity to a physica dify your virtual switches later by using the Virtual Switch Man	ou install this that you crea al network. Yo ager.	te
Server Roles Features Hyper-V Virtual Switches	Name Description			1
Virtual Switches	LAN1	Broadcom NetXtreme Gigabit Ethernet		1
Migration	LAN2	Broadcom NetXtreme Gigabit Ethernet		-
Default Stores	<	10	>	
Confirmation Results	 We recommend that network adapter, do 	you reserve one network adapter for remote access to this ser not select it for use with a virtual switch.	ver. To reserv	re

(9) In [Virtual Machine Migration], click the [Next] button without changing the default settings.

Before You Begin Installation Type Server Selection Server Roles Hyper-V Virtual Switches Migration Default Stores Confirmation Results	Hyper-V can be configured to send and receive live migra Configuring Hyper-V now enables any available network i you want to dedicate specific networks for live migration,	tions of virtual machines on this server. on this server to be used for live migrations. I use Hyper-V settings after you install the role of virtual machines emigrations. not require you to set up constrained le logged on to the source server. et up constrained delegation in your when managing this server remotely. igration now, Instead, you will configure the ks, when you create the cluster.
--	---	--

(10) In [Default Stores], specify the storage locations of the image files and setting files of the virtual machine. Modify the storage locations as necessary, and then click the [Next] button.

É.	Add Roles and Features Wizard	>
Default Stores	DESTI WIN-OKBM3PKA	NATION SERVER 009.hyperv.local
Before You Begin Installation Type Server Selection	Hyper-V uses default locations to store virtual hard disk files and virtual machine configu unless you specify different locations when you create the files. You can change these de now, or you can change them later by modifying Hyper-V settings. Default location for virtual hard disk files:	ration files, fault locations
Server Roles Features	C:\Users\Public\Documents\Hyper-V\Virtual Hard Disks	Browse
Hyper-V	Default location for virtual machine configuration files:	
Virtual Switches Migration Default Stores Confirmation Results	C:\ProgramData\Microsoft\Windows\Hyper-V	Browse
	< <u>Previous</u> <u>Next ></u> [nstall	Cancel

Hitachi Data Ingestor Hyper-V Installation Guide (11) In [Confirm installation selections], select the [Restart the destination server automatically if required] check box (because the host OS needs to be restarted after installation), and then click the [Install] button.

onfirm installat	tion selections	WIN-OKBM3PKA009.hyperv.loca		
Before You Begin	To install the following roles, role services, or feature	s on selected server, click Install.		
Server Selection Server Roles	Restart the destination server automatically if required Optional features (such as administration tools) might be displayed on this page because they have been selected automatically. If you do not want to install these optional features, click Previous to clear their check boxes.			
Features Hyper-V Virtual Switches Migration Default Stores Confirmation Results	Hyper-V Remote Server Administration Tools Role Administration Tools Hyper-V Management Tools Hyper-V Module for Windows Power: Hyper-V GUI Management Tools	Shell		
	Export configuration settings Specify an alternate source path			

(12) After the restart is completed, in [Installation progress], click the [Close] button to close the window.

6	Add Roles and Features Wizard	- - ×
Installation prog	gress	DESTINATION SERVER WIN-OKBM3PKA009.hyperv.local
Results	View installation progress	
	Feature installation	
	Installation succeeded on WIN-OKBM3PKA009.hyperv.	local.
	Hyper-V Remote Server Administration Tools Role Administration Tools Hyper-V Management Tools Hyper-V Module for Windows PowerShell Hyper-V GUI Management Tools	
	You can close this wizard without interrupting running page again by clicking Notifications in the command the Export configuration settings	g tasks. View task progress or open this bar, and then Task Details.
	< Previous Nex	dt > Close Cancel

(13) Click [Hyper-V] in the left pane in Server Manager, right-click the host name in the right pane, and then click [Hyper-V Manager].

a	Server Manager	_ 🗆 X
E Hyper-	-V - 🕄 🏲 Manage Tr	ools View Help
Dashboard Local Server All Servers	SERVERS All servers 1 total Filter (ii)	
 AD DS DNS File and Storage Services ▷ Hyper-V 	Server Name IPv4 Address WIN-OKBM3 Add Roles and Features Shut Down Local Server Computer Management Computer Management Remote Desktop Connection Windows PowerShell Configure NIC Teaming Configure Windows Automatic Feedback Hyper-V Manager	69.254.224.136,169.2 - >
	EVENTS Manage As All events 1 t Start Performance Counters Filter Copy Server Name ID Severity Source	TASKS

(14) Select the host machine from the left pane in Hyper-V Manager, and then click [Virtual Switch Manager] in the right pane.

Hyper-V Manager		_ D X			
<u>File Action View H</u> elp					
Hyper-V Manager		Actions			
		WIN-OKBM3PKA009			
Name State CPU Usage	Assigned Memory Uptir	n New 🕨			
No virtual machines were found or	i this server.	🎲 Import Virtual Machine			
		🖆 Hyper-V Settings			
		🗱 Virtual Switch Manager			
		Virtual SAN Manager			
< III		🔬 Edit Disk			
Checkpoints		lnspect Disk			
Theorem	Greekpoints				
No virtual machine select	No virtual machine selected.				
		View 🕨			
		🔽 Help			
		-			
Details					
N N N N N N N N N N N N N N N N N N N					
No rem selected.					
		_			
< 111)				
WIN-OKBM3PKA009: 0 virtual machines selected.					

(15) Click [External] in the right pane in Virtual Switch Manager, and then click the [Create Virtual Switch] button.

🗱 Virtu	al Switch Manager for WIN-OKBM3PKA009
★ Virtual Switches ★ New virtual network switch ↓ Global Network Settings ♥ MAC Address Range 00-15-5D-8A-14-00 to 00-15-5D-8	Create virtual switch
	OK Cancel Apply

(16) From the [External network] pull-down menu, select the network assigned to the management LAN. Change [Name] as necessary. Finally, click the [Apply] button.

÷	Virtual Switches New virtual network switch ManagementLAN Broadcom NetXtreme Gigabit	بالله Switch Properties
*	Global Network Settings MAC Address Range 00-15-5D-8A-14-00 to 00-15-5D-8	Notes:
		Connection type What do you want to connect this virtual switch to? External network:
		Broadcom Net/Dreme Gigabit Ethernet
		VLAN ID Enable virtual LAN identification for management operating system The VLAN identifier specifies the virtual LAN that the management operating system will use for all network communications through this network adapter. This setting does not affect virtual machine networking. 2
		Bemove SR-IOV can only be configured when the virtual switch is created. An external virtual switch with SR-IOV enabled cannot be converted to an internal or private switch.

(17) You will then create the Virtual Switch for the front-end LAN. To do so, click [New virtual network switch] in the left pane, and then perform steps (15) onward.

This completes the installation of Hyper-V.

4. Creating a virtual machine

This section describes the procedure for installing a virtual machine on Hyper-V of Windows Server 2012 R2.

(1) Start Hyper-V Manager, click the host name in the left pane, and then click [New] in the right pane to select [Virtual Machine].

् राज्य		Нур	er-V Manager				1	- 0	x
<u>File Action View H</u> elp									
Hyper-V Manager	Virtual Machines	(Actions		
	Name	State	CPU Usage	Assigne	d Memory	Untim	WIN-OKBM3PKA00	9	-
		No virtual mar	chines were found o	n this server		P	New	Tar al	- E
				in and sorrer.			Huner-V Settings	ine	
							Virtual Switch Mana	ger	
	<	ш					🔬 Virtual SAN Manage	r	
	Checkpoints						🔬 Edit Disk		_
		2.2					📇 Inspect Disk		
	No virtual machine selected.				Stop Service				
							Remove Server		
				Kerresh		-			
							View Help		Ê
	Details								
			No item selected.						
	<	ш				>			

(2) In the New Virtual Machine Wizard window, click the [Next] button in [Before You Begin].

(3) In [Specify Name and Location], enter the name of the virtual machine in the Name text box. Change the file storage location of the virtual machine as necessary. If there is no problem with the specifications, click the [Next] button.

E .	New Virtual Machine Wizard
Specify Na	ame and Location
Before You Begin Specify Name and Location Specify Generation Assign Memory Configure Networking Connect Virtual Hard Disk Installation Options	Choose a name and location for this virtual machine. The name is displayed in Hyper-V Manager. We recommend that you use a name that helps you easily identify this virtual machine, such as the name of the guest operating system or workload. Name: [HyperV-test] You can create a folder or use an existing folder to store the virtual machine. If you don't select a folder, the virtual machine is stored in the default folder configured for this server.] gtore the virtual machine in a different location
Summary	Location: L: yrograntDatayNicrosoft(WindowsYHyper-V) Erowse If you plan to take checkpoints of this virtual machine, select a location that has enough free space. Checkpoints include virtual machine data and may require a large amount of space.
	< Previous Next > Enish Cancel

(4) In [Specify Generation], select [Generation 1], and then click the [Next] button.

3	New Virtual Machine Wizard
Specify Gene	eration
Before You Begin Specify Name and Location Specify Generation Assign Memory Configure Networking Connect Virtual Hard Disk Installation Options Summary	Choose the generation of this virtual machine. Generation 1 This virtual machine generation provides the same virtual hardware to the virtual machine as in previous versions of Hyper-V. Generation 2 This virtual machine generation provides support for features such as Secure Boot, SCSI boot, and PXE boot using a standard network adapter. Guest operating systems must be running at least Windows Server 2012 or 46-be versions of Windows 8. Conce a virtual machine has been created, you cannot change its generation.
	< <u>P</u> revious <u>N</u> ext > <u>Finish</u> Cancel

(5) In [Assign Memory], specify the memory capacity (in MB) to be allocated to the virtual machine. Specify at least 8192 MB(*1) for HDI to be installed.

i.	New Virtual Machine Wizard
Assign Mem	огу
Before You Begin Specify Generation Specify Generation Asign Memory Configure Networking Connect Virtual Hard Disk Installation Options Summary	Specify the amount of memory to allocate to this virtual machine. You can specify an amount from 32 MB to improve performance, specify more than the minimum amount recommended for the operating system. Startup memory: 1321 MB Use Dynamic Memory for this virtual machine. When you decide how much memory to assign to a virtual machine, consider how you intend to use the virtual machine and the operating system that it will run.
	< Previous Next > Einish Cancel

*1: When you allocate the memory more than 30GB, turn off "NUMA" of the BIOS of the host machine.

(6) In [Configure Networking], select the management LAN you created in step 16 of Chapter 3, and then click the [Next] button.

h.	New Virtual Machine Wizard
Configure N	letworking
Before You Begin Specify Name and Location Specify Generation Assign Memory	Each new virtual machine includes a network adapter. You can configure the network adapter to use a virtual switch, or it can remain disconnected. Connection: ManagementLAN
Contruer Networking Connect Virtual Hard Disk Installation Options Summary	
	< Previous Next > Finish Cancel

(7) In [Connect Virtual Hard Disk], select [Attach a virtual hard disk later], and then click the [Next] button.

1	New Virtual Machine Wizard	x
Connect Vir	tual Hard Disk	
Before You Begin Specify Name and Location Specify Generation Assign Memory	A virtual machine requires storage so that you can instal an operating system. You storage now or configure it later by modifying the virtual machine's properties. O greate a virtual hard disk. Use this option to create a VHDX dynamically expanding virtual hard disk.	can specify the
Configure Networking Connect Virtual Hard Disk Summary	Name: HyperV-test.vhdx Location: Cr(Users/Public/Documents/Hyper-V(Virtual Hard Disks) Ster: 127 GB (Maximum: 64 TB) Use an existing virtual hard disk. Use an existing virtual hard disk.	Browse
	Ose this option to accell an existing virtual hard usis, enter VPD of VPD	Browse
	< Previous Next > Einish	Cancel

(8) In the Completing the New Virtual Machine Wizard window, click the [Finish] button and confirm that the virtual machine you created exists in Hyper-V Manager. Then, right-click the created virtual machine and click [Settings].

(9) Select [IDE Controller 0] in the left pane in the Settings window, select [Hard Drive] in the right pane, and then click the [Add] button.

HyperV-test	✓ 4 ▶ Q
 ★ Hardware ▲ Add Hardware ▲ Blos Book from CD ■ Memory 4096 MB ■ Processor 1 Virtual processor 	IDE Controller - You can add hard drives and CD/DVD drives to your IDE controller. Select the type of drive you want to attach to the controller and then click Add.
IDE Controller 0 IDE Controller 1 OVD Drive None	L. Add
Image: SCSI Controller Image: SCSI Control	You can corrigure a hard drive to use a virtual hard disk or a physical hard disk after you attach the drive to the controller.
Name HyperV-test Integration Services	
Some services offered	
Some services offered Checkpoint File Location C:\ProgramData\Microsoft\Wi	indo
Some services offered Checkpoint File Location C:\ProgramData\Microsoft\W Smart Paging File Location C:\ProgramData\Microsoft\W	indo
Some services offered Checkpoint File Location C: (ProgramData)Microsoft(Wi Smart Paging File Location C: (ProgramData)Microsoft(Wi Automatic Start Action Restart if previously running	indo

(10) Select [0 (in use)] for [Location], and then click the [New] button under the [Virtual hard disk] field.



(11) In [Before You Begin] in the New Virtual Hard Disk Wizard window, click the [Next] button.

(12) In [Choose Disk Format], select [VHD], and then click the [Next] button.

L	New Virtual Hard Disk Wizard
Choose Disk	Format
Before You Begin Choose Disk Format Choose Disk Type Specify Name and Location Configure Disk Summary	What format do you want to use for the virtual hard disk? • YHD Supports virtual hard disks up to 2,040 GB in size. • YHDX • YHDX This format supports virtual disks up to 64 TB and is resilient to consistency issues that might occur from portable failures. This format is not supported in operating systems earlier than Windows Server 2012.
	< <u>Pr</u> evious <u>N</u> ext > <u>Fi</u> nish Cancel

(13) In [Choose Disk Type], select [Fixed size], and then click the [Next] button.

b	New Virtual Hard Disk Wizard
Choose Disk Before You Begin Choose Disk Format	k Type
Choose Disk Type Specify Name and Location Configure Disk Summary	This type of disk provides better performance and is recommended for servers running applications with high levels of disk activity. The virtual hard disk file that is created initially uses the size of the virtual hard disk and does not change when data is deleted or added. Dynamically expanding This type of disk provides better use of physical storage space and is recommended for servers running application that are not disk intensive. The virtual hard disk file that is created is small initially and changes as data is added. Differencing This type of disk is associated in a parent-child relationship with another disk that you want to leave intact. You can make changes to the data or operating system without affecting the parent disk, so that you can revert the changes easily. All children must have the same virtual hard disk. format as the parent (VHD or VHDX).
	< Brevious Next > Einish Cancel

Hitachi Data Ingestor Hyper-V Installation Guide (14) In [Specify Name and Location], enter the virtual hard disk file name for the OS LU in [Name], enter the storage folder for the virtual hard disk file in [Location], and then click the [Next] button.

* The file name specified in [Name] must be unique within the folder specified in [Location]. If there is a file with the same name in the folder specified in [Location], change the name or location.

2	New Virtual Hard Disk Wizard	x				
Specify Name and Location						
Before You Begin Choose Disk Format Choose Disk Type Specify Name and Location Configure Disk Summary	Specify the name and location of the virtual hard disk file. Name: osku.vhd Location: C:\UsersiPublic\Documents\Hyper-V\Virtual Hard Disks\	Browse				
	< Previous Next > Einish	Cancel				

(15) In [Configure Disk], enter "26" GB or more in [Size], and then click the [Next] button.

	New Virtual Hard Disk Wi	zard					
Configure D	isk						
Choose Disk Format	re You Begin You can create a blank virtual hard disk or copy the contents of an existing physical disk.						
Choose Disk Type	Create a new biank virtual hard disk Size: 26 GB (Maximum: 2.040 GB)						
Specify Name and Location							
Configure Disk	Copy the contents of the specified physical of	disk:					
Summary	(),\PHYSICALDRIVE0	557 68					
	Copy the contents of the specified virtual ha	ard disk.					
	< <u>P</u> revior	us Next > Einish Cancel					

(16) In the Completing the New Virtual Hard Disk Wizard window, click the [Finish] button. When the original Settings window appears, click the [Apply] button.

(17) Use the same procedure to create a shared LU and user LU by repeating steps (9) to (16) according to Table 4-1.

#	Usage	Controller	Location	File name	Disk type	Size
1	OS LU	IDE Controller 0	0	Optional	Fixed capacity	$26~\mathrm{GB}$ or
	(mandatory)					more
2	Shared LU	SCSI Controller	0	Optional	Fixed capacity	36 GB or
	(mandatory)					more
3	User LU	SCSI Controller	1	Optional	Fixed capacity	2 GB or
	(mandatory)					more
4	User LU	SCSI Controller	2 to 63	Optional	Fixed capacity	2 GB or
	(optional)					more

Table4-1 Virtual hard disks required for HDI

* Notes

- OS LU #1 was already created the first time you performed steps (9) to (16).

- Use only one SCSI Controller. Correct operation is not guaranteed when multiple SCSI Controllers are used.

- For user LUs, location 1 is mandatory and locations 2 to 63 are optional. You can create up to 63 user LUs.

- The file name must be unique within the storage location. If there is a file with the same name in the same location, change the storage location or name as necessary.

- Ensure at least 26 or 36 GB of space in the OS LU or shared LU so that HDI can operate.

- Specify 2 or more GB of space for user LUs based on the user's requirements.

- If a user LU runs out of space after operation starts, create a new user LU.

(18) Select [Processor] in the left pane in the Settings window, set at least "2"(*1) in [Number of virtual processors] in the right pane, and then click the [Apply] button.



*1: When you assign the number of Processor more than seven, turn off "NUMA" of the BIOS of the host machine.

(19) Select [Add Hardware] in the left pane in the Settings window, select [Network Adapter] in the right pane, and then click the [Add] button.

Add Hardware Image: State in the state in th	H	yperV-test	~	4) Q
HyperV-test HyperV-test Tregration Services Some services offered CeProgrambeta/Microsoft/Win		perV-test Hardware Add Hardware Stos Boot from CD Boot from CD Processor 2 Virtual processors 1 DE Controller 0 Gue Hard Drive oslu.vhd DVD Drive None StSSI Controller Contucted Hard Drive contu.vhd Hard Drive usentu.vhd CH Controller COM 2 None Dickette Drive None Dickette Drive None Dickette Drive None Dickette Drive None CManagement X None CMANAGEMEN X X None CMANAGEMEN X X None CMANAGEMEN X X X X X X X X X X X X X X X X X X X	× <	Add Hardware You can use this setting to add devices to your virtual machine. Select the devices you want to add and click the Add button. Select Controller Indexed Addszter Por Channel Adapter RemotePX 3D Video Adapter Add A network adapter requires drivers that are installed when you install integration services in the guest operating system.
		HyperV-test		

(20) From the [Virtual switch] drop-down menu, select the network created for the front-end LAN, and then click the [Apply] button.

Hyperv-test	~	
Hardware Madd Hardware BIOS Book from CD Memory 4096 MB	~	Network Adapter — Specify the configuration of the network adapter or remove the network adapter. Virtual gwitch: IFrontendLAN VLAN ID
Processor 2 Virtual processors DE Controller 0 B Brd Drive oslu.vhd DI DE Controller 1 DVD Drive		Enable gitual LAN identification The VLAN identifier specifies the virtual LAN that this virtual machine will use for all network communications through this network adapter.
None None None Scatt Controller General Drive cmnlu.vhd General Drive userlu.vhd W Network Adapter ManagementLAN	Ш	Enable Sandwidth management Specify how this network adapter utilizes network bandwidth. Both Minimum Bandwidth and Maximum Bandwidth are measured in Megabits per second. Minimum bandwidth:
Network Adapter FrontendLAN COM 1 None COM 2 COM 2		To leave the minimum or maximum unrestricted, specify 0 as the value. To remove the network adapter from this virtual machine, click Remove. <u>Remove</u>
None None Management None Management None None None None None None None None	_	(i) Use a legacy network adapter instead of this network adapter to perform a network-based installation of the guest operating system or when integration services are not installed in the guest operating system.

This completes all the virtual machine settings.

5. Installing HDI

This section describes the procedure of installing HDI on Hyper-V of Windows Server 2012 R2.

(1) Start Hyper-V Manager, and right-click the host name in the left pane. Then, in the center pane, rightclick the virtual machine you created in Chapter 4 and select [Connect].

	Hyper-	-V Manager	
File Action View Help			
🗢 🄿 🞽 п 👔 🖬			
📑 Hyper-V Manager			Actions
WIN-OKBM3PKA009	Virtual Machines		WIN-OKBM3PKA009
	Name State	CPU Usage Assigned Memory Uptim	New 🕨
	Connect		💫 Import Virtual Machine
	Settings		👔 Hyper-V Settings
	Start		🗱 Virtual Switch Manager
	< Checkpoint		🔬 Virtual SAN Manager
	Che Move		💋 Edit Disk
	Export		🖳 Inspect Disk
	Rename	I machine has no checkpoints.	Stop Service
	Delete		🗙 Remove Server 🗧
	Enable Replication		🔉 Refresh
	Help		View 🕨
	HumanWetart		👔 Help
	nyperv-test		HyperV-test
	Created: 8/6/2015 4:31:	21 AM Clustered: No	n Connect
	Version: 5.0		💽 Settings
	Generation: 1		🕘 Start
	Hotes. Hote		🍺 Checkpoint
			P Move
	Summary Memory Networking Replication		Export
	<	>	📑 Rename 🗸
Launches the Virtual Machine Connect	ion application.		

((2) Place the installation medium (iso) on the host machine and select [Media] > [DVD Drive] > [Insert Disk], and then the iso file of the installation medium. Then, click [Action] > [Start] to start the virtual machine.



(3) In [Select mode], enter "1" (Initial install), and then press the return key.



(4) In [Install parameters], enter "y", and then press the return key.

📲 HyperV-test on WIN-OKBM3PKA009 - Virtual Machine Connection	x c
File Action Media Clipboard View Help	
🕸 💿 💿 🥥 🔢 🕨 🐉 🍮 🐁	_
[Install parameters] Do you want to delete the existing data? To delete all data on the disk, y], and then press the [Enter] key. To keep any existing data, enter [n], en press the [Enter] key, or simply press the [Enter] key. (Default = n)	enter [and th (y/n):_
Status: Running	B D

(5) In the final confirmation screen, enter "y", and then press the return key.



*Note

When any of following conditions is satisfied, it may take a time to install HDI.

- The installation using a media allocated on a network is executed.
- The load of Hyper-V host machine is high.
- The HDD string an ISO file and the HDD to install it's file are specified to the same drive.

(6) After installation has been completed, select [Media] > [DVD Drive] > [Eject XXXX] from the menu to remove the medium, and then press the return key to restart the virtual machine.

🐏 🛛 HyperV-test on Wil	N-OKBM3PKA009 - Virtual Machine Connection	_ D X
File Action Media Clipboard	View Help	
🍪 💿 DVD Drive	Eject FOS_06-00-0050908_1141.iso	
Installati Format dis	▶ Insert Disk	
[Information on product	to be Capture D:	
Product name	Version	
Hitachi Data Ingestor	6.0.0-00	
KAQG61005-Q Are you sure (delete all data on the	: you want to execute the selected mode? disk)) (y/n):y	(initial install
[Information on product	to be installed]	
Product name	Version	
Hitachi Data Ingestor	6.0.0-00	
[Status]	· · · · · · · · · · · · · · · · · · ·	
Status: 0% (Time elap	sed: 0 min. Estimated time remaining	: calculating)
Status: 30% (lime elap	used: U min. Estimated time remaining	: 3 m1n.) : 3 min.)
Status: 55% (Time elan	sed: 2 min. Estimated time remaining	: 2 min.)
Status: 70% (Time elan	sed: 2 min. Estimated time remaining	: 2 min.)
Status: 74% (Time elap	sed: 2 min. Estimated time remaining	: 1 min.)
Status: 90% (Time elap	used: 2 min. Estimated time remaining	: 1 min.)
Status: 98% (Time elap	sed: 3 min. Estimated time remaining	: 1 min.)
Status: Completed		
KAUG61001-I Eject the in	stallation media, and then press the LE	nterl key.
Status: Running		<u>ال</u> لا ا

*Note

When any of the following conditions is satisfied, the OS standing-up after installing HDI may take a time.

- The specification of the host machine of Hyper-V is low.

- The load of the host machine of Hyper-V is high.

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(7) After the virtual machine restarts, the network setting wizard starts. Select "1" to configure the management LAN, and then press the [Enter] key.

HyperV-test on WIN-OKBM3PKA009 - Virtual Machine Connection		x
File Action Media Clipboard View Help		
🅸 🔍 🖲 🥥 🕲 📕 🕨 🎼 📩		
(Hint: Press Ctrl + F2 to go to the Login screen.)		
[Select mode] 1. Set management port 2. View management port		
KAQM05163-I Select a mode, and then press [Enter]. (1 or 2): _		
Status: Running	<u> </u>	

(8) Enter the necessary information according to the network setting wizard. Enter "y" at the end of the wizard, and then press the [Enter] key.

😤 HyperV-test on WIN-OKBM3PKA009 - Virtual Machine Connection 📃 🗖	x
File Action Media Clipboard View Help	
🕸 🔍 🖲 🥥 🔍 📗 🎼 🏷 🏂	
(Hint: Press Ctrl + F2 to go to the Login screen.)	
[Select mode] 1. Set management port 2. View management port	
KAQM05163-I Select a mode, and then press [Enter]. (1 or 2): 1 KAQM05282-Q Do you want to use DHCP? (y/n) n Management IP address(IPv4) : 10.213.76.27 Netmask : 255.255.0	
Default gateway IP address(IPv4) (to skip, press [Enter]) : 10.213.76.3 Management IP address(IPv6) (to skip, press [Enter]) : RAQM05173-Q Do you want to set the management port? (y/n) y RAQM05174-I The IP address of the management port was set.	
KAQM05208-I Press the Enter key to return to selection mode	
Status: Running	

(9) After the settings are completed, the window returns to the management LAN network setting wizard. Press the [Ctrl] + [F2] keys to display the login prompt.

😤 HyperV-test on WIN-OKBM3PKA009 - Virtual Machine Connection 📃 🗕 🗖	x t
File Action Media Clipboard View Help	
(Hint: Press Ctrl + F1 to go to the Settings screen.)	
DUMSERUER login:	
Shakus Dunning	ØD
status: Running	0

This completes the installation of HDI.

*Note

When a virtual machine is re-booted, a serious event log with event id 18560 is recorded info the event log of Windows. To record this event log is the specification in Hyper-V and Linux, so neglect it. For the details, refer to the support of Microsoft.

https://support.microsoft.com/en-us/kb/2711608/en-us

6. Update installation of HDI

See Chapter 5 to perform an update installation. Note that in Chapter 5 (3), you need to enter "2" to select [2. Update install], and then press the [Enter] key.

<Note>

If the version in the installation confirmation screen displayed in Chapter 5 (5) is different from the version to be installed, press the [Ctrl] + [C] keys to interrupt the installation. When the message "KAQG61006-Q Are you sure you want to cancel the installation? (y/n):" appears, enter "y", and then press the [Enter] key. When the KAQG61001-I message appears, remove the installation medium, and then press the [Enter] key. This allows the node OS to be shut down. Prepare the installation medium with the correct version and perform the operation in Chapter 5 again.

7. Live migration

Live migration is a function to move a running or stopped virtual machine from a single physical server to another server while retaining its availability to users. To perform a live migration, the following prerequisites must be satisfied.

- There are at least two physical servers that satisfy the system requirements of the host machine, which use a processor manufactured by the same vendor.
- The migration-source host and the migration-destination host belong to the same Active Directory domain, or domains that have mutual trust.
- All of the names of virtual switches created by both hosts match.

The procedure for executing a live migration is described below.

7.1. Connecting the host

(1) Right-click [Hyper-V Manager] in the left pane in Hyper-V Manager, and then select [Connect to Server].

		Hyper	-V Manager				*
File Action View Help							
🗢 🔿 🙎 💽 🚺							
Hyper-V Manager					_	Actions	
WIN-C Connect to ser	Ver Nachines					WIN-OKBM3PKA009	· ^
Help	HuperV-test	State	CPU Usage	Assigned Memory	Uptim	New	•
	kebuka1	Off				💫 Import Virtual Machine	
	kebuka2	Off				Hyper-V Settings Virtual Switch Manager	
	<	ш		2		Virtual SAN Manager	
	Checkpoints			2.2.1.		 Edit Disk Inspect Disk 	
		The selected virtua	al machine has no) checkpoints.		 Stop Service Remove Server 	н
						Refresh View	•
						🛛 Help	
	HyperV-test					HyperV-test	
	Creat	ed: 8/6/2015 4:31	:21 AM	Clustered: No		onnect	
	Versio	on: 5.0				😰 Settings	
	Gener	ration: 1				💿 Start	
	notes	. None				🐌 Checkpoint	
	Summary Memory Netw	vorking Replication				Move Export	
	<	ш			>		~
Opens a dialog that allows you to co	onnect to a specified virtualization	ation server.					

(2) In [Select Computer], click the [Browse] button, and then click the [Advanced] button.

File Oction Mean Help			
A A COON VIEW Help	Select Computer		
Hyper-V Manager	Connect to virtualization server	Actions	
WIN-OKBM3PKA009		WIN-OKBM3PKA009	+
	Another computer: Browse	n New	٠
	OK Cancel	Hyper-V Settings	
	C Select Computer	Virtual Switch Manager	
	CI Select this object type:	💋 Edit Disk	
	Computer Qbject Types	🔛 🖳 Inspect Disk	
	From this location:	Stop Service	
	hyperv.local	X Remove Server	
	Enter the object name to select (<u>examples</u>):	G Refresh	100
		View	•
	н	Help	
	Advanced OK Cancel	- HyperV-test	-
	Version: 5.0	Settings	
	Generation: 1	Start	
	Notes: None	a Checkpoint	
		Move	
	Summary Memory Networking Replication	- 🎝 Export	
		🗐 🗐 Rename	

Hitachi Data Ingestor Hyper-V Installation Guide (3) Click the [Find Now] button. From the displayed search results, select the host for which live migration is to be performed, and then click the [OK] button. When the window returns to (2), click the [OK] button twice to close the window.

2	Select Computer	x
Select this object type:		
Computer		Dbject Types
From this location:		_
hyperv.local		Locations
Common Queries		
N <u>a</u> me: Starts with 👻		<u>C</u> olumns
Description: Starts with V		Find Now
Disabled accounts		Stop
Non expiring password		
Days since last logon: 🔍 🗸		-
Search res <u>u</u> lts:		OK Cancel
Name	In Folder	
WIN-M84PINNG1EP	hyperv.local/Computers	
WIN-OKBM3PKA009	hyperv.local/Domain Controllers	
WIN-T24QEILO6UH	hyperv.local/Computers	
1		

(4) Perform the same steps as above to add any other hosts for which live migration is to be performed.

7.2. Enabling the live migration function

(1) From the left pane in Hyper-V Manager, select a host whose live migration function is to be enabled, and then click [Hyper-V Settings] in the right pane.

e Action View Help						
Hyper-V Manager	Virtual Machines				=	Actions WIN-OKBM3PKA009
WIN-OKBM3PKA009	Name HyperV-CIFStet1 HyperV-4est HyperV-4est3 < Checkpoints	State Off Off Off Off Off The selected virtu	CPU Usage	Assigned Memory	Uptir	New Import Virtual Machine Hyper-V Settings Virtual Switch Manager Virtual SAN Manager Edit Disk Inspect Disk Stop Service Remove Server Refresh
	HyperV-CIFStest1				_	Help
	Create Version Genera Notes:	ed: 8/7/20157:48 n: 5.0 ation: 1 None	1:26 AM	Clustered: No		HyperV-CIFStest1 Connect Settings Start Checkpoint Move
	Summary Memory Netw	orking Replication				Export

Hitachi Data Ingestor Hyper-V Installation Guide (2) In [Hyper-V Settings], click [Live Migration] in the left pane, and then select the [Enable incoming and outgoing live migrations] check box in the right pane. Then, select [Use these IP addresses for live migration], and click the [Add] button.

Virtual Hard Disks C:\Users\Public\Documents\Hyper	
	Enable incoming and outgoing live migrations Simultaneous live migrations Specify how many simultaneous live migrations are allowed. Simultaneous live migrations: Incoming live migrations Use these IP addresses for live migration Add Edg Move Dogyn Remove Incoming live migrations are blocked because no IP addresses are specified. To fix Incoming live migrations are blocked because no IP addresses are specified. To fix fix, add addresses or allow any available network. You must go off and go on gapa to use the selected live migration authentication protocol. To change the live migration authentication protocol, expand the Live Migration page and then select the Advanced Features page.

(3) Enter the IP addresses of the migration-source and migration-destination hosts for which live migration is to be performed (as shown in the examples), and then click the [OK] button. After all the host IP addresses have been registered, click the [Apply] button in the window in (2).

2	IP Address	x
Specify th	ne IP address range to use.	
IP Addres	s	
Examples 192. 192. 200 ⁻	: 168.0.12 168.1.0/24 1:8e6c:6456:1c99::/64	
	OK Cancel	

(4) Perform the same operation for the migration-source and migration-destination hosts for which live migration is to be performed.

7.3. Performing a live migration

(1) From the center pane in Hyper-V Manager, right-click the virtual machine for which live migration is to be performed, and then click [Move].

and a second sec		1	Hyper-V Manager				x
File Action View Help							
🕶 🖤 🗾 💽 🖬 💷						Actions	_
WIN-OKBM3PKA009	Virtual M	achines				WINLT24OEILOGUU	
WIN-T24QEILO6UH	Name	▲ State	CPU Usage	Assigned Memory	Uptime	New	
	HyperVJX	Connect	0%	4096 MB	00:06:47	import Virtual Mac	
		Settings				😤 Hyper-V Settings	
		Turn Off				💶 Virtual Switch Man	
		Shut Down				🧕 Virtual SAN Manag	
	<	Save				🝰 Edit Disk	
	Checkp	Pause			6	📇 Inspect Disk	
	encerep	Reset				Stop Service	
		Checkpoint	machine has n	machine has no checkpoints,		🗙 Remove Server	
		Move			🔉 Refresh	=	
		Export				View	•
		Rename				😰 Help	
		Enable Replication				HyperV-LM	•
		Help				onnect	
	HyperV-L	м				🛐 Settings	
		Greated: 8/13	/2015 4-30-20 AM	Clustered: No		Turn Off	
		Version: 5.0	2010 4.00.20 AM	Heartbeat: OK (No Application	Shut Down	
	ALC: NOT A CONTRACT OF A CONTR	C		Data	a)	🙆 Save	
		Notes: None		Integration Services:		Pause	
						I> Reset	
	C.mman M	emoru Networking Ben	ication			b Checkpoint	
	Summary 1	cinoly recordinal rich				Move	
	1		ш		>	R rank	Y

(2) In [Before You Begin] in the wizard, click the [Next] button.

(3) In [Choose Move Type], select [Move the virtual machine], and then click the [Next] button.

Move "HyperV-LM" Wizard			
Choose M	оче Туре		
Before You Begin Choose Move Type Specify Destination Choose Move Options Summary	What type of move do you want to perform? Move the virtual machine Move the virtual machine's gtorage Move only the virtual machine's storage to another location, either on this server or on shared storage.		
	< <u>Previous</u> <u>Next</u> > Enish Cancel		

(4) In [Specify Destination Computer], click the [Browse] button, and then click the [Advanced] button.

	Move "HyperV-LM" Wizard	x		
Specify Destination Computer				
Before You Begin	Specify the name of the destination computer.			
Choose Move Type	Name:	Browse		
Choose Move Options				
Summary	Select Computer	×		
	Select this object type:			
	Computer	Object Types		
	From this location:			
	hyperv.local	Locations		
	Enter the object name to select (examples):			
		Check Names		
	Advanced OK	Cancel		
	< Previous Next > Finis	h Cancel		

(5) Click the [Find Now] button. From the displayed search results, select the migration-destination host, and then click the [OK] button. When the window returns to (4), click the [OK] button, and then click the [Next] button.

Select Computer	x
Select this object type:	
Computer Dt	oject Types
From this location:	
hyperv.local [_ocations
Common Queries	
Name: Starts with V	<u>C</u> olumns
Description: Starts with V	Find <u>N</u> ow
Disa <u>b</u> led accounts	Stop
Non expiring password	
Days since last logon:	P
Search results:	Cancel
Name In Folder	
WIN-M84PINNG1EP hyperv.local/Computers	
WIN-0KBM3PKA009 hyperv.local/Domain Controllers	
WIN-124UEILU6UH hyperv.local/Computers	

(6) In [Choose Move Options], select [Move the virtual machine's data to a single location], and then click the [Next] button.

	Move "HyperV-LM" Wizard		
Choose Move Options			
Before You Begin Choose Move Type Specify Destination Choose Move Options Virtual Machine Summary	What do you want to do with the virtual machine's items? Move the virtual machine's data to a gingle location This option allows you to specify one location for all of the virtual machine's items. Move the virtual machine's data by selecting where to move the items. This option allows you to specify one location of each item to be moved. Move the virtual machine's data by selecting where to move the items. This option allows you to select the location of each item to be moved. Move qu'p the virtual machine This option allows you to move the virtual machine without moving its virtual hard disks. The virtual machine's virtual hard disks must be on shared storage.		
	< Previous Next > Einish Cancel		

(7) In [Choose a new location for virtual machine], enter the storage-destination location of the virtual machine data to be moved in [Folder], and then click the [Next] button.

ie a	N	Move "HyperV-LM" Wizard
Choose a	new location for	virtual machine
Before You Begin Choose Move Type Specify Destination Choose Move Options	Specify a location Destination loc Folder:	on on the destination computer for the virtual machine's items. aation C:\users\public\Documents\hyper-v\Virtual hard disks\Im\ Browse
Virtual Machine Summary	Source location Size:	n 63.01 GB
		< Previous Next > Einish Cancel

(8) In [Completing Move Wizard], click the [Finish] button to start live migration.

	Move "HyperV-LM" Wi	zard	x
Completing	Move Wizard		
Before You Begin	You are about to perform the following operation	on.	
Choose Move Type	Description:		
specilly beschauon	Virtual machine:	HyperV-LM	^
Choose Move Options	Move type:	Virtual Machine And Storage	
Virtual Machine	Destination computer:	WIN-UKBRISPKAUU9 Dectination Location	
Summary	Attached virtual bard disk IDE Controller 0	C:\users\nublic\Documents\byper-v\Virtual bard di	-
	Attached virtual hard disk. SCSI Controller	C:\users\public\Documents\hyper-v\Virtual hard di	
	Attached virtual hard disk. SCSI Controller	C:\users\public\Documents\hyper-v\Virtual hard di	5
	Current configuration	C:\users\public\Documents\hyper-v\Virtual hard di	-
	Checknoints	C:\users\nublic\Documents\byner-y\Virtual bard di	×
	To complete the move and close this wizard, cl	ck Finish.	
	< <u>P</u> rev	ous Mext > Einish Cancel	

(9) When the Performing the move window disappears, the live migration is complete.

8. Troubleshooting

See the attached troubleshooting procedure.

9. Support coverage

$Support\ coverage\ of\ VMA$

If you use specifications other than those in the following table, correct operation is not guaranteed.

	T	0 11	Q 1:::	D 1
#	Item	Supported/	Conditions	Remarks
		Unsupported	(restrictions)	
1	Addition of LUs	Supported	Locations unallocated by the standard SCSI controller	
2		Unsupported	Allocation to additional SCSI	HDI does not perform device
-		Clibupporteu	controllers	allocation
3			Allocation of LUN = 1 to IDE	Same as above
			controller 0	
4			Allocation to IDE controller 1	Same as above
5	Reduction of LUs	Unsupported		Because HDI does not
				support the operation
6	Virtual hard disk format: VHD	Supported		
7	Virtual hard disk format:	Unsupported		Because HDI does not
	VHDX			support the operation
8	Virtual hard disk	Supported	OS: 26 GB or more	
	capacity:		Shared: 36 GB or more	
	Fixed capacity		User: 2 GB to 2 TB	
9	Virtual hard disk	Unsupported		Because HDI does not
	capacity:			support the operation
	Variable capacity			
10	Virtual hard disk	Unsupported		Same as above
	capacity:			
	Differential			
11	Generation-1 virtual	Supported		
	machine			
12	Generation-2 virtual	Unsupported		Because lilo boot is not
	machine			available
13	Internal HDD	Supported		
14	CSV	Unsupported		Because HDI does not
	(Cluster Sharing			support the operation
	Volume)			
	sharing			
15	Cluster configuration	Unsupported		Because HDI does not
	(including failover)			support the operation
16	SMP file sharing	Unsupported		Because HDI does not
				support the operation
17	Live migration	Supported		

Table 9-1 Support coverage of VMA

Hitachi Vantara

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