KVM-over-IP Switch Raritan Dominion KX IV-101

Brief Instructions





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1 Introduction

In this quick installation guide, the configuration of the VisuNet RM Shell 5.2 (or newer) and the Raritan Dominion® KX IV-101 KVM-over-IP switch is described.

The Raritan KX IV-101 #70118493 is available as an accessory and must be ordered separately.

With the VisuNet RM Shell 5.2 (or newer) the embedded software client that allows connection to Raritan® KVM-over-IP switches got further improved and the setup process of the connection highly simplified.

The KVM-over-IP client allows a point-to-point connection between a VisuNet Remote Monitor and a host PC to be set up in the safe area.

The local host PC can be shared and remotely operated by a second user on the remote monitor in the hazardous location.

2 Raritan Dominion KX IV-101

2.1 Device Interfaces

The Raritan Dominion KX IV-101 KVM-over-IP switch has multiple interfaces that are used to connect a VisuNet Remote Monitor (RM) / Box Thin Client (BTC) to a local Host PC:

Front View



Figure 2.1

(1) Local Port HDMI Out to local monitor

- (2) Local Port USB Keyboard/Mouse
- (3) Input/Output Ports
- (4) Reset

(5) Power Status LED:

- Green ON: Power on
- Green BLINKING: Remote target connection

Rear View



Figure 2.2

(1) Power 5V/4A from power adapter

(2) RJ-45 LAN Network Port with 2 LEDs for network speed and activity:

Amber OFF/Green OFF: Link Inactive



- Amber ON/Green OFF: 1000 MBps Link/No Activity
- Amber BLINKING/Green OFF: 1000 MBps Link/Activity(RX, TX)
- Amber OFF/Green ON: 100 MBps Link/No Activity
- Amber OFF/Green BLINKING: 100 MBps Link/Activity (RX, TX)
- Amber ON/Green ON: 10 MBps Link/No Activity
- Amber BLINKING/Green BLINKING: 10 MBps Link/Activity (RX, TX)
- (3) Serial Admin Port
- (4) USB In from target server
- (5) HDMI In from target server

There are multiple setup options for the KVM switch:





Connection with Local Monitor (connected to host PC):

Use this setup if you want to operate the host PC locally and via an RM that is connected via LAN. (recommended setup)



Figure 2.4

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Connection without Local Monitor:

Use this setup if you do not want to locally operate the host PC but only want to operate the host PC via an RM that is connected via LAN.

2.2 Application Setup

In addition to the local setup of the KVM switch and the host PC, there are also multiple options for connecting the KVM switch to an RM and integrating the KVM switch into a network:



Figure 2.5 Point to Point connection of an RM and a KVM-over-IP switch

The explanation on how to setup the connection of the RM and the KVM-over IP switch is described in this brief instruction.



Figure 2.6 RM and KVM-over-IP switch connection via Ethernet switch

If you require further information on how to setup the connection via Ethernet switch, refer to the Raritan and the VisuNet RM Shell manual.



3 Preparing VisuNet RMs

In this section, the steps for a direct connection between an RM and a KVM switch are described. Before you can connect a VisuNet RM Shell KVM profile to a host PC, you must configure the KVM switch.

Note

Note: The following steps describe the configuration of the KVM switch from an RM. The setup can also be performed from a standard PC.

Required Setup:

Connect the Raritan Dominion KX IV-101 KVM's USB and HDMI cables to a host PC.

Connect the LAN cable of the KVM directly to the Remote Monitor or the box thin client from which you want to configure your Raritan Dominion KX IV-101 KVM switch.



VisuNet RM Shell Settings

Note

The KVM-over-IP client requires an VisuNet RM Shell PRO License to be unlocked. Refer to the VisuNet RM Shell manual for further information.

Note

Disable Write Filter for persistent storage of configurations to persistently store configuration changes, disable the Unified Write Filter (UWF). Once you have implemented the configuration changes, enable the UWF again to persistently store the changes.

Enable DHCP

Switch the user role to Administrator. Enable the DHCP Settings in the System Settings of the RM/BTC.

← Back to Home	Network Settings 🖧
System Settings	Configuration of the local Network Adapters
🗱 General	Ethernet 2
P Desktop Sharing	Network Adapter Information
Dialog Filter	Network Connected Ethernet 2
Display	Intel(R) I210 Gigabit Network Connection #2 00:05:87:04:87:54
📟 Keyboard	Network Adapter Settings
_ Network	Network Adapter Name
Pointing Devices	Ethernet 2
Proxy	DHCP
Scheduler	IP Address
B Security	0.0.0.0
[*] Undate	Subnet Mask
th oberte	255.0.0.0
CO VisuNet CC	Default Gateway
S Wedge Configuration	
	Automatic DNS
Figure 3.1	

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Whitelist the required processes for the dialog filter

Whitelist the processes for the dialog filter:

Open the System Settings and select "Dialog Filter". Add the processes "iexplore" and "dfsvc" to the whitelist by typing in the process names.

← Back to Home	Dialog Filter 🖨	log Filter	
General	Main Settings		^
Dialog Filter	dfsvd		Add .
Display Keyboard	Add Window Title to Whitelist Type in your Window Title		Add
and Network	Open Processes and Windows Scan for Windows		
Pointing DevicesProxy	No Entry	window lities	(A) (V)
Scheduler	whitelist Processes		â
Update	Whitelist Window Titles No Entry		
CO VisuNet CC		Apply 0	Changes Revert
30 wedge configuration			

Figure 3.2

Save the changes by clicking "Apply Changes" and close the window.

Create a new profile with the Profile Management App

Opening the Profiles Management App

To open the profiles management app, click the appropriate icon on the home screen:

Profiles Management		

Creating a New Connection Profile

1. To create a new connection profile, click

+ New profile

2. Select your required connection profile type and click "Ok."





The selected connection profile has been created. The new profile's main settings open.

If the processes Click Once App Deployment Fulfillment Service "dfsvc" and internet explorer "iexplore" are not yet added to the dialog filter, the following warning appears:

Main Settings

0	Raritan KVM requires Internet Explorer. Please add "iexplore" and "dfsvc" as excluded processes to the Dialog Filter in the System Settings. This can only be performed by the Administrator.
---	---

The dialog filter closes all application windows that are not whitelisted and prevents users from accessing the file system or unauthorized programs.

If this warning appears you must Whitelist the required processes for the dialog filter (refer to Whitelist the required processes for the dialog filter).

Configure the new profile with the following parameters:

- 1. Profile Name: Use a meaningful name for the connection (e.g. Raritan KVM)
- 2. KVM Switch Network Name / IP address: kvm.local



Note

After configuring the KVM console the username and password need to be added in a final step. Refer to Chapter 5 regarding username and password settings.

Save the changes by clicking

Apply Changes

and Click

Open Remote Console



← Back to Home	Raritan KVM Settings 🎫	
Profiles Management	Configure general Raritan KVM Settings	
Profiles	Main Settings	^
🗱 Raritan - 1	Profile Name	
	Raritan Dominion KX IV-101	
	KVM Switch Network Name / IP address	
	kvm.local	
	Open Remote Console	
	Username	
	Password	
	No password set	•
	Port Number Port Name	
	1:	
	Ping server before connect	
	OFF	
	Block user from closing the connection	
	Display Settings	~
	Apply Changes	Revert

Figure 3.3

Certificate Mismatch

Before a connection to the KVM switch will be established, the following warning appears:

Back to Home Profiles Management Profiles Raritan - 1	Raritan KVM Settings Configure general Raritan KVM Settings Main Settings Profile Name Raritan Dominion KX IV-101 KVM Switch Network Name / IP address kvm.local Open Remote Console
	Certificate name mismatch The certificate with the common name "Raritan KVM" doesn't match the network name "kvm.local". You can either disable this warning or create a self-signed certificate on the KVM adaptet see manual for details. Do you want to permanently disable the warning for the certificate name mismatch and restart the system? Yes No Cancel
	Block user from closing the connection ors: Display Settings ~ Apply Changes Revert

Figure 3.4

You can choose how to proceed:

a) Disable permanently the warning for the certificate mismatch and restart the system

b) Create a self-signed certificate or use a custom certificate on the KVM adapter

3.2 Disable permanently the warning for the certificate mismatch ((a) recommended)

Note

A web service's certificate provides identification of the server or KVM switch. If the certificate names mismatch the address, it might indicate that your connection has been intercepted or that the server is misrepresenting its identity. By default the Raritan KVM switch uses a certificate with the common name "Raritan KVM" and therefore the name mismatch warning occurs. For point-to-point connections or local intranets the risk is low.

Disabling the warning also affects the internet explorer settings.

For higher security needs create or import your own certificate where the common name matches the KVM switch address. Refer to option (b) "Create a self-signed certificate or use a custom certificate on the KVM adapter" (chapter 3.3).



Click yes in the occurred warning

The certificate name mismatch is disabled and the RM/BTC reboots. After rebooting the RM/BTC switch again to the administrator user role, open the Raritan KVM Settings again.

Click:

Open Remote Console

To proceed further, accept the import of the "Raritan KVM" certificate into the "Trusted People" certificate store.

In	mp	ort	ce	rtifi	cate	e?									
4	2	The Do	e cei you	rtific u wai	ate v nt to	ith th impo	ie comm rt it to ti	ion n ne "Tri	ame usteo	*Rar d Peo	ritar ople	n KVM e" certi	is fica	unknown. ite store?	
									,	/es		No	U	Cancel	Ľ



Click yes

A notification pops up, that the certificate is successfully imported Continue with the configuration in Chapter 4.



3.3 Create a self-signed certificate or use a custom certificate on the KVM adapter (b)



Figure 3.5

Click No in the occurred warning

Karitan Dominion KX IV-101
KVM Switch Network Name / IP address
kvm.local
Open Remote Console
Username
Import certificate?
The certificate with the common name "Raitan KVM" is unknown. Do you want to import it to the "Trusted People" certificate store?
Yes No Cancel
Ping server before connect OFF Block user from dosing the connection OFF
Display Settings \vee
Apply Changes Revert

Figure 3.6

Another security alert pops up and asks you if you want to import the "Raritan KVM" certificate to the "Trusted People" certificate store.

Click no and either create a self-signed certificate or import a certificate provided by your IT department.



Log in to the Remote Console for the KVM as described in chapter 4



Create your own key and certificate

Note

i

This step is only required if you do not have a valid "company certificate" that can be used on the KVM switch.



Navigate to Security SSL Certificate



Caution!

The times on the RM/BTC and Raritan Dominion KX IV-101 KVM switch must match before creating a self-signed certificate!

Refer to Set Time and Date

Raritan	Dominion [®] KX	IV-101	9:3533	DKX4-101			01/19/2020 21:34:20
	Group Based Access Control	Model: DKX4-101 • Firmware:	4.0.1.5.46189				
Port Access Port Configuration Device Information User Management	IP Access Control KVM Security Login Settings Password Policy SSL Certificate	Subject Country State or Province Locality Organization Organizational Unit Common Name Email Address Miscellaneous Not Valid Before Not Valid After	US NJ Somerset Raritan Americas, Inc. Engineering Raritan KVM not set	Feb 13 21:35:57 2015 GB Feb 9 21:35:57 2030 GM	Issuer Country State or Province Locality Organization Organizational Unit Common Name Email Address	US NJ Somerset Raritan Americas, Inc. Engineering Raritan CA not set	
Device Settings	Agreement	Serial Number Key Length		03 2048 bits Download Key	Download Certificate		
Ø		New SSL Certificate Subject			Key Creation Parameter	rs	
Maintenance		Country State or Province Locality Organization Organizational Unit Common Name Email Address	required required required required required required		Key Length Self Sign Validity in days	2048 bits	

Figure 3.7

1. Fill in the required information of the red lined boxes and create a new certificate with your organization information.

2. If all required information is available, you are able to click "Create New SSL Key".



Caution!

Important!

The common name must be equivalent to the (future) Network name or IP address.



Raritan.	Dominion [®] KX	(IV-101	3:2523	DKX4-101			01/19/2020 21:32:50	?				
모	Group Based	Model: DIO(4-101 • Firmware: 4.0.1.5.46189										
Port Access	Access Control	Locality	Somerset		Locality	Somerset		^				
-	IP Access Control	Organizational Unit	Engineering Baritan KVM		Organizational Unit	Engineering Baritan CA						
Port Configuration	KVM Security	Email Address	not set		Email Address	not set						
()	Login Settings	Miscellaneous Not Valid Before		Feb 13 21:35:57 2015 G	ıτ							
Device Information	Password Policy	Not Valid After		Feb 9 21:35:57 2030 GM	г							
(S)	SSL Certificate	Key Length		2048 bits								
Management	Service Agreement			Download Key	Download Certificate							
Ŷ		New SSL Certificate										
Device Settings		Subject	DE		Issuer	DE						
Â		State or Province	BW		State or Province	BW						
Consulta		Locality	Mannheim		Locality	Mannheim						
Security		Organization	not set		Organization	not set						
Ŗ		Organizational Unit	not set		Organizational Unit	not set						
Maintenance		Common Name	kvm.local		Common Name	kvm.local						
		Email Address	not set		Email Address	not set						
-^-		Miscellaneous										
Diagnostics		Not Valid Before		Jan 20 02:30:44 2020 GM	IT							
		Not Valid After		Jan 27 02:30:44 2030 GM	п							
		Serial Number		A03DC86F9AA5664C								
		Key Length		2048 bits								
		-	Install Key and Cer	tificate Download Key	Download Certificate Delet	te Key and Certificate						
								~				

Figure 3.8

3. Click "Install Key and Certificate" to finalize the installation.

4. Ignore the popping up Windows $\ensuremath{\mathbb{B}}$ warning and continue with the configuring steps in chapter 4

Import a Certificate provided by your IT-department

Enable "Upload Key and Certificate" and follow the guided steps.

Ø	State of Province	required		Validity in days	required	
Security	Locality	required			Create New SSL Key	
	Organization					
Maintenance	Organizational Unit					
~	Common Name	required				
	Email Address					
Diagnostics	Upload Key and Certificate					
		Browse	Key File			
		Browse	Certificate File			
				Ipload		
						~

Figure 3.9



4 Configuring the KVM Switch

Log in to Remote Console for the KVM

C km/scal-Login-Active KM Cleat	-	×
Devites		
Utersame		
Passend		
Login using Active KMH Gleet		
Copyright 2519 + All Rights Roservel + Runtan Soc.		
Free		

Figure 4.1 Use the following default Login: Username: admin Password: raritan

4.1 Adjust the login password

As Administrator you are immediately forced to change the default login password.

assword char	nge forced for User	'admin'
Password	required	
Confirm password	required	
		Ok

Figure 4.2

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4.2 Setup Time and Date

Check the KVM switch time.

Navigate to "Device Settings Date/Time" and update the date and time.

Raritan.	Dominion [®] KX	IV-101	DKX4-101	01/20/2020 16:56:30
8	Date/Time	Model: DKX4-101 • Firmware: 4.0.1.5.46189		
Port Access	Event	Date/Time		
-Bo	Management	Common Settings		
Port Configuration	Keycode List	Time Zone	(UTC-05:00) Eastern Time (US & Canada)	\$
\bigcirc	Network		 Automatic Daylight Saving Time Adjustment 	
Device	Network	Time Setup Method	User Specified Time Synchronize with NTP Server	
Information	Jervices	NTP Settings		
8	Serial Port	First Time Server		
User Management	Terminal Block Control	Second Time Server		
Ô	Virtual Media		Check NTP Servers	
Device Settings	Shared Images			✓ Save
Ø				
Security				
ß				
Maintenance				
-4y-				
Diagnostics				





Caution!

The times on the RM/BTC and Raritan Dominion KX IV-101 KVM switch must match.

4.3 Enable Direct Port Access (DPA)

The VisuNet RM Shell requires DPA to be activated on the KVM switch. Navigate to "Security -> KVM Security and enable "Enable Direct Port Access via URL." Save the Settings

Raritan	Dominion [®] KX	S IV-101	DKX4-101	01/19/2020 20:44-23		
읆	Group Based	Model: DKX4-101 • Firmware: 4.0.1.5.46189				
Port Access	Access Control	KVM Security				
20	IP Access Control	SSL Encryption Mode	Auto	\$		
Port Configuration	KVM Security	Apply Encryption Mode to KVM and Virtual Media	<u>ح</u>			
0	Login Settings	PC Share				
Device		PC Share Idle Timeout	5	seconds		
Information	Password Policy	Virtual Media Share				
Ø	CCI Cartificata	Disable Local Port Output				
User	SSC Certificate	Local Device Reset Mode	Enable Local Factory Reset	\$		
Management	Service Agreement	Enable Direct Port Access via URL				
¢				✓ Save		
Device Settings						
Ø						
Security						
ß						
Maintenance						
-						
4						
Diagnostics						

Figure 4.4



Note

The DHCP is enabled per default. If a static IP address is required, refer to the Raritan's manual as well as the VisuNet RM Shell manual to set the static IP address there as well.



Note

For further information regarding the configuration of the Dominion KX IV-101 and the entire Raritan refer to the Raritan's website (www.raritan.com).



Establish the Connection

Setting Username and Password in the VisuNet RM Shell Raritan KVM Settings

Note

Г

5

It is recommended to create a user within the Raritan Dominion KX IV-101 KVM console with limited rights. Refer to the Raritan documentation.

Enter the Raritan KVM Settings again via profiles management. Add the Username (factory default: admin) and Password (factory default: raritan) to the Raritan KVM Settings of the VisuNet RM Shell and click:

Apply Changes		
Back to Home Profiles Management Profiles	Raritan KVM Settings	^
Raritan Dominion KX IV-101	Profile Name Raritan Dominion KX IV-101 KVM Switch Network Name / IP address kvm.local Username admin Password Post Number Port Number 1 Ping server before connect orF Block user from closing the connection orF	
	Display Settings	~
		Apply Changes Revert



The KVM switch and KVM profile are now configured, and operators can start them by clicking the profile on the home screen of the VisuNet RM Shell.

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Figure 5.2



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