## V2406C Windows Software User's Manual

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www.moxa.com/product



### V2406C Windows Software User's Manual

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# **System Initialization**

In this chapter, we describe how to initialize the system settings on the V2406C computer when you boot up the computer for the first time. When you turn on the computer, you will see the Windows Out of Box Experience (OOBE) wizard. OOBE consists of a series of screens that require customers to accept the license agreement, connect to the internet, log in with, or sign up for a Microsoft Account, and share information with the OEM.

The following topics are covered in this chapter:

- Initializing User Settings
- Initializing the System

### **Initializing User Settings**

The following is a non-exhaustive list of OOBE screens that you will see in the order that they are listed here:

1. Select a region.

	Basics	
Let's	start with region. Is this right?	
	_	
	Uganda	
	Ukraine	
	United Arab Emirates	
	United Kingdom	
	United States	
	Uruguay	
	Uzbekistan	
	Vanuatu	
	Vatican City	
		Ves
		les
Ģ		

2. Select a keyboard.

	Basics	
ls	this the right keyboard layout? If you also use another keyboard layout, you can add that next.	
	us	
	Canadian Multilingual Standard	
	English (India)	
	Irish	
	Scottish Gaelic	
	United Kingdom	
	United States-Dvorak	
	United States-Dvorak for left hand	
	United States-Dvorak for right hand	
		Yes

3. Select a second keyboard.

← Basics	
Want to add a second keybo	ard layout?
¢	Add layout Skip

4. Connect to a network.

Network
Let's connect you to a network
Ethernet 3
Skip for now
CG-



5. Sign in to or create a local account or a Microsoft account (MSA).

Account	
Who's going to use this PC? What name do you want to use?	
(8)	
Name	
	Next
G	

6. Create a password.



7. Do more across device with activity history.

			Services
Do	more across devices with a	ctivity his	tory
lf you want timelin activity history, wh	e and other Windows features to help you continue what you were doing, eve ich includes info about websites you browse and how you use apps and service products and services use this data to personalize experiences while re-	n when you switch devices, es. Select <b>Learn more</b> to fir specting your privacy.	send Microsoft your Id out how Microsoft
		N	No.
Learn more		No	165

8. Choose your privacy settings.

<section-header><text><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></text></section-header>	<del>~</del>	Services
Online speech recognition       Use your voice for dictation and to talk to Cortana and other apps that use this improve our speech services.       Contain       Get Ideation-based experiences like directions and weather. Let Windows and apps request your location and allow Microsoft to use your location data to improve location services.       Contain       East to improve our speech services.       Contain       East to improve location and allow Microsoft to use your location data to improve location services.       Contain       Contain and allow Microsoft to use your location data to help you with your divice if you lose it. You must sign in to Windows with your Microsoft cocount to use this feature.       Contain       Contain       Contain       Contain       Contain       Contain       Contain       Contain and allow Microsoft to use your location data to help you with your divice if you lose it. You must sign in to Windows with your Microsoft cocount to use this feature.       Contain       Contain <thc< th=""><th>Choose privacy set</th><th>tings for your device , then select 'Accept' to save them. You can change these settings at any time.</th></thc<>	Choose privacy set	tings for your device , then select 'Accept' to save them. You can change these settings at any time.
<ul> <li>Find my device and use your device's location data to help you for device if you lose it. You must sign in to Windows with your divice if you lose it. You must sign in to Windows with your divice for account to use this feature.</li> <li>Yes</li> <li>Inding &amp; typing</li> <li>Ato Microsoft to Microsoft to improve the language recognition and suggestion capabilities of apps and services running of your advice if you lose it. You must sign in to Windows with your divice heat the device heat the device activity, and enhanced error reporting.</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Advertising D</li> <li>Apps can use advertising 10 to provide more personalized advertising account cave with the privacy policy of the app provider.</li> <li>Yes</li> <li>Yes</li> <li>Marking and the methand more personalized advertising account cave advertising 10 to provide more personalized advertising and the privacy policy of the app provider.</li> <li>Yes</li> <li>Methand Marking and the privacy policy of the app provider.</li> <li>Yes</li> <li>Yes</li> <li>Methand Marking And Marking</li></ul>	Online speech recognition Use your voice for dictation and to talk to Cortana and other apps that use Windows cloud-based speech recognition. Send Microsoft your voice data to help improve our speech services.	Location Get location-based experiences like directions and weather. Let Windows and apps request your location and allow Microsoft to use your location data to improve location services.
<ul> <li>Yes</li> <li>Inking and typing data to Microsoft to improve the language recognition and suggestion capabilities of apps and services running windows.</li> <li>Yes</li> <li>Advertising ID Apps can use advertising ID to provide more personalized advertising in accordance with the privacy policy of the app provider.</li> <li>Yes</li> </ul>	Tind my device Turn on Find my device and use your device's location data to help you find your device if you lose it. You must sign in to Windows with your Microsoft account to use this feature.	Diagnostic data Send all Basic diagnostic data, along with info about the websites you browse and how you use apps and features, plus additional info about device health, device activity, and enhanced error reporting.
Inking & typing         Send inking and typing data to Microsoft to improve the language recognition and suggestion capabilities of apps and services running of Windows.       Tailored experiences based on the diagnostic data personalized bips, ads, and recommendations to enhance Microsoft products and services for your needs.         • Yes       • Yes         • Advertising ID Apps can use advertising ID to provide more personalized advertising accordance with the privacy policy of the app provider.       • Yes         • Yes       • Yes	Yes	Full
Advertising ID         Apps can use advertising ID to provide more personalized advertising in accordance with the privacy policy of the app provider.         Image: Provide more personalized advertising in accordance with the privacy policy of the app provider.         Image: Provide more personalized advertising in accordance with the privacy policy of the app provider.         Image: Provide more personalized advertising in accordance with the privacy policy of the app provider.         Image: Provide more personalized advertising in accordance with the privacy policy of the app provider.         Image: Provide more personalized advertising in accordance with the privacy policy of the app provider.         Image: Provide more personalized advertising in accordance with the privacy policy of the app provider.         Image: Provide more personalized advertising in accordance with the privacy policy of the app provider.         Image: Provide more personalized advertising in accordance with the privacy policy of the app provider.         Image: Provide more personalized advertising in accordance with the privacy policy of the app provider.         Image: Provide more personalized advertising in accordance with the personalized advertising personalized advert	Inking & typing Send inking and typing data to Microsoft to improve the language recognition and suggestion capabilities of apps and services running on Windows. Yes	Tailored experiences Let Microsoft offer you tailored experiences based on the diagnostic data you have chosen (either Basic or Full). Tailored experiences mean personalized tips, ads, and recommendations to enhance Microsoft products and services for your needs. Yes
Yes      Learn more      Accept	Advertising ID Apps can use advertising ID to provide more personalized advertising in accordance with the privacy policy of the app provider.	Select 'Learn more' for info on the above settings, how Windows Defender SmartScreen works, and the related data transfers and uses.
Learn more Accept	Yes	
		Learn more Accept
G	с	

#### **Initializing the System**

1. When you sign in to the system for the first time, the Windows Command Processor will run and show the message **Do you want to allow this app to make changes to your device?** Click **Yes**.



2. Wait until the process is complete.

SetupComplete	×—		×
C:\Windows\system32>start/wait c:\windows\system32\SetOEMModel.exe			î
C:\Windows\system32>start/wait c:\windows\system32\SortNetName.exe			
C:\Windows\system32>reg delete "HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Run" /v "Setu The operation completed successfully.	pComp	lete",	/f

After the process completes, the system initialization is done.

This chapter describes the BitLocker setup process.

The following topics are covered in this chapter:

- Enabling the BitLocker
- Disabling the BitLocker

### **Enabling the BitLocker**

1. In the **Windows Devices and drives**, right-click on the drive and select **Turn on BitLocker**.

💻   📝 📕 🖛	Drive Tool:	s This PC				-	ПX
File Computer	View Manage						~ 🕐
← → ~ ↑ □ > T	This PC →				ٽ ~	Search This PC	Q
Image: A constraint of the constra	V Folders (6)	ktop	Documents		Iownloads		
📰 Pictures 🛛 🖈		sic	Pictures	V V	Ideos		
💻 This PC	✓ Devices an	d drives (1)					
i Network	Loc. 125	al Disk (C:)  Open Open in new window Pin to Quick access  Turn on BitLocker  Share with Restore previous versions Pin to Start Format Copy Create shortcut Rename Properties	f				
7 items 1 item selected	í) s						

 Select an option to back up the recovery key. For example, select **Save to a file**.

		$\times$
←	Real BitLocker Drive Encryption (C:)	
	How do you want to back up your recovery key?	
	A recovery key can be used to access your files and folders if you're having problems unlocking your PC. It's a good idea to have more than one and keep each in a safe place other than your PC.	
	$\rightarrow$ Save to your <u>M</u> icrosoft account	
	$\rightarrow$ Save to a file	
	$\rightarrow$ Print the recovery key	
	How can I find my recovery key later?	
	<u>N</u> ext Cancel	

-

3. Select the path to store the file in.

🍕 Save BitLocker rec	overy key as						×
$\leftarrow$ $\rightarrow$ $\checkmark$ $\uparrow$	→ This PC → NEW	VOLUME (D:)			√ Č	Search NEW VOLUME (D:)	م (
Organize 👻 Ne	w folder						- ?
<ul> <li>Quick access</li> <li>Desktop</li> <li>Downloads</li> <li>Documents</li> <li>Pictures</li> <li>This PC</li> <li>NEW VOLUME</li> <li>Network</li> </ul>	(D:)	~	Date modified No items mat	Type ch your search.	Size		
File name:	BitLocker Recovery K	ey 06A92F47-93AA-4514-1	BB5F-D6B2C6F43C03				~
Save as <u>t</u> ype:	Text Files (*.txt)						~
∧ Hide Folders						<u>S</u> ave C	ancel

4. Follow the onscreen instructions to specify the drive encryption options.

		×
÷	Real BitLocker Drive Encryption (C:)	
	Choose how much of your drive to encrypt	
	If you're setting up BitLocker on a new drive or a new PC, you only need to encrypt the part of the drive that's currently being used. BitLocker encrypts new data automatically as you add it.	
	If you're enabling BitLocker on a PC or drive that's already in use, consider encrypting the entire drive. Encrypting the entire drive ensures that all data is protected–even data that you deleted but that might still contain retrievable info.	
	Encrypt used disk space only (faster and best for new PCs and drives)	
	O Encrypt entire drive (slower but best for PCs and drives already in use)	
	<u>N</u> ext Cancel	

		$\times$
←	Real BitLocker Drive Encryption (C:)	
	Choose which encryption mode to use	
	Windows 10 (Version 1511) introduces a new disk encryption mode (XTS-AES). This mode provides additional integrity support, but it is not compatible with older versions of Windows.	
	If this is a removable drive that you're going to use on older version of Windows, you should choose Compatible mode.	
	If this is a fixed drive or if this drive will only be used on devices running at least Windows 10 (Version 151 or later, you should choose the new encryption mode	1)
	New encryption mode (best for fixed drives on this device)	
	$\bigcirc$ Compatible mode (best for drives that can be moved from this device)	
	<u>N</u> ext Cance	1

5. Click Continue.

÷

		Х
←	Real BitLocker Drive Encryption (C:)	
	Are you ready to encrypt this drive?	
	Encryption might take a while depending on the size of the drive.	
	You can keep working while the drive is being encrypted, although your PC might run more slowly.	
	✓ <u>R</u> un BitLocker system check	
	The system check ensures that BitLocker can read the recovery and encryption keys correctly before encrypting the drive.	
	BitLocker will restart your computer before encrypting.	
	Note: This check might take a while, but is recommended to ensure that your selected unlock method works without requiring the recovery key.	ł
	<u>Continue</u> Cancel	

6. Restart the computer.

RitLocker Drive Encryption	Х
The computer must be restarted	
Restart now Restart late	r (
Manage BitLocker	

7. Wait for the encryption process to complete and then click **Close**.



#### **Disabling the BitLocker**

1. In the Windows Devices and drives, right-click on the drive and select Manage BitLocker.

🧢 🖌 🗧 🛛	Manage This PC			- 🗆 ×
File Computer V	iew Drive Tools			~ 🕜
← → • ↑ 💄 > T	his PC		v U	Search This PC 👂
Quick access	✓ Folders (7)			
Desktop a	3D Objects	Desktop	Documents	
Downloads				
🗎 Documents 🛪	Downloads	Music	Pictures	
E Pictures 🕫	• •			
🤰 This PC	Videos			
🥪 USB Drive (D:)				
Example	✓ Devices and drives (2)			
Platform	Windows (C:)	Open		
Interview Network	13.0 GB free of 28.5 G	B Open in new window		
		Pin to Quick access		
		Manage BitLocker		
		Scan with Windows Defender		
		Give access to		
		Restore previous versions		
		Pin to Start		
		Format		
		Сору		
		Create shortcut		
		Rename		
9 items 1 item selecte	d	Properties		
				and the second

2. Click on Turn off BitLocker.

BitLocker Drive Encryption				- 0	×		
$\leftarrow \rightarrow \vee \uparrow$ ] > Contro	I Panel → System and Security → BitL	ocker Drive Encryption	v U	Search Control Panel	Ą		
Control Panel Home	BitLocker Drive Encryp	tion			9		
	Help protect your files and folders from unauthorized access by protecting your drives with BitLocker.						
	For your security, some security.	settings are managed by your system administrator.					
	Operating system drive	e					
	Windows (C:) BitLock	BitLocker Drive Encryption X Turn off BitLocker Your drive will be decrypted. This might take a long time, but you can keep using your PC during the decryption process.		$\overline{\bigcirc}$			
	Fixed data drives	- BitLocker To Go					
	D: BitLocker off			$\odot$			
See also TPM Administration							
Privacy statement							

3. Wait for the decryption process to complete and click **Close** to exit the program.

Image: Bit Coder: Dave       > System and Security > BitLocker: Dave Encryption       Image: BitLocker: Dave Encryption         Control Panel Home       BitLocker: Drive Encryption       Image: BitLocker: Drive Encryption       Image: BitLocker: Drive Encryption         Windows (C): BitLocker: Drive Encryption       Image: BitLocker: Drive Encryption       Image: BitLocker: Drive Encryption         Fixed: data drives - BitLocker: Drive Encryption       Image: BitLocker: Drive Encryption       Image: BitLocker: Drive Encryption         Image: BitLocker: Drive Encryption       Image: BitLocker: Drive Encryption       Image: BitLocker: Drive Encryption         See alio       Image: BitLocker: Drive Encryption       Image: BitLocker: Drive Encryption         Image: BitLocker: Drive Encryption       Image: BitLocker: Drive Encryption       Image: BitLocker: Drive Encryption         Image: BitLocker: Drive Encryption       Image: BitLocker: Drive Encryption       Image: BitLocker: Drive Encryption         Image: BitLocker: Drive Encryption       Image: BitLocker: Drive Encryption       Image: BitLocker: Drive Encryption         Image: BitLocker: Drive Encryption       Image: BitLocker: Drive Encryption       Image: BitLocker: Drive Encryption         Image: BitLocker: Drive Encryption       Image: BitLocker: Drive Encryption       Image: BitLocker: Drive Encryption         Image: BitLocker: Drive Encryption       Image: BitLocker: Drive Encryption       Image: BitLocker: Drive Encrypti
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Operating system       Introdews (c) is         Windows (c) is       image Bit oder         Fixed data drives - BitLocker To Go       image Bit oder         D: BitLocker off       image Bit oder         See also       image BitLocker of for unauthorized acress by protecting your drives with BitLocker.         Image Distocker Drive Encryption       image BitLocker of image bitLocker of image bitLocker Drive Encryption         Image Distocker Drive Encryption       image bitLocker Drive Encryption         Image Distocker Drive Encryption       image Distocker Drive Encryption         BitLocker Drive Encryption       image BitLocker Drive Encryption         Control Panel Home       BitLocker Drive Encryption         BitLocker Drive Encryption       image BitLocker Drive Encryption         Windows (c) Bit       BitLocker Drive Encryption of C: is complete.         Image BitLocker Drive Encryption       image BitLocker Drive Encryption         Image BitLocker Drive Encryption       image BitLocker Drive Encryption         Image BitLocker Drive Encryption       image BitLocker Drive Encryption         Image BitLocker Drive Encryption       image BitLocker
Windows (C) Bi       Pecrypting         Windows (C) Bi       Dire C: 46.2% Completed         Image Bit ocker       Close         Fixed data drives - Bit Locker To Go       D: Bit locker off         Disk Management       Privacy statement         Privacy statement       Image Bit locker         State Locker Drive Encryption       Image Bit locker Drive Encryption         Height protect your files and folders from unauthorized access by protecting your drives with Bit locker.       Image Bit locker Drive Encryption         Height protect your files and folders from unauthorized access by protecting your drives with Bit locker.       Image Bit locker Drive Encryption         Windows (C) Bi       Windows (C) Bi       Pecryption of C: is complete.         Windows (C) Bit       Pecryption of C: is complete.       Image Bit locker
See alor:   TPM Administration   Disk Management:   Privey statement     BitLocker Drive Encryption     Control Panel Home   BitLocker Drive Encryption     Help protect your files and folders from unauthorized access by protecting your drives with BitLocker.     Operating system     Windows (C), Bit
See also     The data drives - BitLocker To Go   D: BitLocker off  See also D: BitLocker off    See also Control Panel + System and Security > BitLocker Drive Encryption Entropy statement  BitLocker Drive Encryption Control Panel + System and Security > BitLocker Drive Encryption Control Panel Home Decryption of C: is complete. Control Panel BitLocker Windows (c:) BitLocker Windows (c:) BitLocker Diver BitLocker
Fixed data drives         Removable data drives - BitLocker To Go         D: BitLocker off         ©         * TPM Administration         © TPM Administration         * Disk Management         Privacy statement         * Oricel Panel > System and Security > BitLocker Drive Encryption         Control Panel Home         BitLocker Drive Encryption         Heip protect your files and folders from unauthorized access by protecting your drives with BitLocker.         Operating system         Windows (C; B)         Windows (C; B)         * Undows (C; B)         * Decryption of C: is complete.         * Operating system         * Windows (C; B)         * Decryption of C: is complete.         * Operating system         * Undows (C; B)         * Decryption of C: is complete.         * Operating system         * Operating system         * Operating system
Fixed data drives Removable data drives - BitLocker To Go D: BitLocker off  Fixed data drives Fixed da
Manage BitLocker     Removable data drives - BitLocker To Go   D: BitLocker off   ©     * TPM Administration   * Dick Management   Privey statement     * BitLocker Drive Encryption   * • • • • • • • • • • • • • • • • • • •
Removable data drives - BitLocker To Go         D: BitLocker off         It Madministration         It Madministration         BitLocker Drive Encryption         + → ↑ ↑ > Control Panel > System and Security > BitLocker Drive Encryption         Control Panel Home         BitLocker Drive Encryption         Help protect your files and folders from unauthorized access by protecting your drives with BitLocker.         Operating system         Windows (C;) Bit         Windows (C;) Bit </th
D: BitLocker off See also TPM Administration Divery statement BitLocker Drive Encryption - ○ × Control Panel Home BitLocker Drive Encryption Help protect your files and folders from unauthorized access by protecting your drives with BitLocker. Operating system Windows (C;) Bit Windows (C;) Bit Windows (C;) Bit Manage BitLocker
See also         Image: TPM Administration         Disk Management         Privacy statement         BitLocker Drive Encryption         ← → ◇ ↑ → Control Panel > System and Security > BitLocker Drive Encryption         Control Panel Home         BitLocker Drive Encryption         Help protect your files and folders from unauthorized access by protecting your drives with BitLocker.         Operating system         Windows (C:) BitLocker Drive Encryption of C: is complete.         Windows (C:) BitLocker         Image BitLocker
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See also © TPM Administration © Disk Management Privacy statement BitLocker Drive Encryption
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Privacy statement
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Control Panel Home BitLocker Drive Encryption Help protect your files and folders from unauthorized access by protecting your drives with BitLocker. Operating system Windows (C:) Bit Manage BitLocker
Help protect your files and folders from unauthorized access by protecting your drives with BitLocker.  Operating system Windows (C:) Bi Close Manage BitLocker
Operating system
Operating system     Image BitLocker
Windows (C:) Bit Close
Close Manage BitLocker
Manace BitLocker
Manage BitLocker
Fixed data drives
Removable data drives - BitLocker To Go
D: BitLocker off
See also
See also

4. Check the disk status after the decryption process is completed.

💻   🕑 📗 🖛	Drive Tools This PC			-	D X
File Computer	View Manage				~ 🕐
← → * ↑ ,	This PC >		~	ی Search This PC	Q,
🖈 Quick access	V Folders (6)				
E Desktop	A Desktop	Documents	Downloads		
👆 Downloads	*				
Documents	* Murie	Distures	H mH Videor		
Pictures	*	Pictures	Videos		
💻 This PC	V Devices and drives (1)				
Network	Local Disk (C:)				
-	125 GB free of 139 GB				
7 items 1 item select	ed				III 📰

**Configuring RAID** 

This chapter describes the setup process for RAID.

The following topics are covered in this chapter:

- Changing the RAID Mode
  - > Changing the SATA Mode From AHCI to RAID
- **Creating a RAID Disk in the BIOS**
- Replacing a Disk
- Removing a RAID Volume From the BIOS

### **Changing the RAID Mode**

- 1. Power on the computer and press **F2** to enter the BIOS menu.
- 2. Select the **Setup Utility** option.



3. Select the **SATA Configuration** option.

		InsydeH20 Setup Utility	Rev. 5.0
Main Advanced Security	Power Boot Exit		
Hain Advanced Security HBoot Configuration HSATA Configuration HCPU Configuration HACtive Hanagement Technolog HVideo Configuration HChipset Configuration HSTO ITE8786E HCOnsole Redirection	Power Boot Exit	*	Select the SATA controller and hard disk drive type installed in your system
F1 Help	1/4 Select I tem	E5/F6 Change Values	F9 Setup Defaults
FI Help Esc Exit	17↓ Select Item +/→ Select Item	F5/F6 Change Values Enter Select ► SubMenu	F9 Setup Defaults F10 Save and Exit

- 4. Select the SATA Mode Selection followed by the Intel RST Premium option.
- 5. Enable the **Hot Plug** function on all ports.

	Insyd	eH20 Setup Utility	Rev. 5.0
Advanced			
SATA Configuration			Determines how SATA controller(s) operate.
SATA Mode Selection	<intel pre<="" rst="" td=""><td>mium&gt;</td><td></td></intel>	mium>	
PSerial ATA Port 0 Hot Plug PSerial ATA Port 1 Hot Plug PSerial ATA Port 2 Hot Plug PSerial ATA Port 3 Hot Plug PSerial ATA Port 4 Hot Plug PSerial ATA Port 5 Hot Plug	INot installed] (Not installed) (Installed) (INTEL SSOSC2001506701 (FUJITSU HH221600H 621 (Not installed) (Not installe	A Hode Selection I R el RST Premium	
F1 Help Esc Exit	1/↓ Select Item +/→ Select Item	F5/F6 Change Values Enter Select ► SubMenu	F9 Setup Defaults F10 Save and Exit

6. Press **F10** to save the settings and then press **ESC** to return to the main page.

		InsydeH2	20 Setup Utility	Rev. 5.
Advanced				
SATA Configuration				Determines how SATA controller(s) operate.
SATA Mode Selection			m>	
▶Serial ATA Port 0 Hot Plug ▶Serial ATA Port 1 Hot Plug	[Not Installed] [Not Installed]	<enabled></enabled>		
▶Serial ATA Port 2 Hot Plug ▶Serial ATA Port 3 Hot Plug	[INTEL_SSDSC2BB15 [FUJITSU_MHZ2160B	0G70] <enabled> H G2] <enabled></enabled></enabled>		
▶Serial ATA Port 4 Hot Plug ▶Serial ATA Port 5	[Not Installed] [Not Installed]	<enabled></enabled>		
			×	
F1 Help For Fxit	1/1 Select	I ten I ten	F5/F6 Change Values	F9 Setup Defaults F10 Save and Exit

7. Select Exit Saving Changes, and then select Yes to save the settings.

		InsydeH20 Setup Utility	Rev. 5.0
Main Advanced Security	Power Boot Exit		
Exit Saving Changes Save Change Without Exit Exit Discarding Changes Load Optimal Defaults Load Custon Defaults Save Custon Defaults Discard Changes			Exit system setup and save your changes.
		×	
F1 Help Esc Exit	1/↓ Select Item +/→ Select Item	F5/F6 Change Values Enter Select 🕨 SubMenu	F9 Setup Defaults F10 Save and Exit

#### **Changing the SATA Mode From AHCI to RAID**

The Moxa OS image is created using the AHCI mode. If you need to set up the RAID mode in the default Moxa OS image, you must reinstall the Intel® Rapid Storage Technology (RST) driver.

To reinstall the Intel  $\ensuremath{\mathbb{R}}$  RST driver, do the following:

1. Run the Intel® Rapid Storage Technology tool.



If the system displays the following message, you must reinstall the Intel® RST driver.



- 2. Uninstall the current Intel® RST driver.
- 3. Download the latest driver from Moxa's website or Intel's driver download page.
- 4. Install the latest Intel® RST driver.
- 5. Run the Intel® Rapid Storage Technology tool to see the current disk status.

Intel® Rapid Storage Technology	– 🗆 ×
Status Manage Intel® Optane <sup>™</sup> Memory Performance Preferences Help	(intel)
Vour system is functioning normally.         Manage         Click on any element in the storage system view to manage its properties.         Image         Optane <sup>TM</sup> memory status: disabled. Enable         Image         Image:         Image:	Storage System View (C) SATA_Array_0000 C) C) C) C) C) C) C) C) C) C) C) C) C)
	More help on this page

## **Creating a RAID Disk in the BIOS**

- 1. Power on the computer and press **F2** to enter the BIOS menu.
- 2. Select the Device Management option.



3. Select Intel® Rapid Storage Technology.

	Devic	e Manager	
Devices List ⊁Intel(R) Rapid Storage Technology			This formset allows the user to manage RAID volumes on the Intel(R) RAID Controllor
Primary Video B10S	<pc1></pc1>		Controller
Press ESC to exit.			
		R	
F1 Help Esc Exit		t/↓ Select Item Enter Select ▶ SubM	enu

4. Select Create RAID Volume.

Intel(R) Rapid Storage Technology			
Intel(R) Rapid Storage Techno	logy		
Intel(R) RST 15.8.0.3010 RAID ▶Create RAID Volume	Driver		This page allows you to create a RAID volume
Non-RAID Physical Disks: ▶SATA 0.2, INTEL SSDSC20B150G7 ▶SATA 0.3, FUJITSU NHZ2160BH G	10 dv651405d5150hgn, 139.7gb 12 k60ht9a3y6aw, 149.0gb		
		×	
F1 Help Esc Exit	1/↓ Select Item +/→ Select Item	F5/F6 Change Values Enter Select ► SubMenu	F9 Setup Defaults F10 Save

5. Select the **RAID Level** option and then press **Enter** to select the raid level; for example, **RAID1(Mirror)**.

	Intel (R	Rapid Storage Technology	
Intel(R) Rapid Storage Techn	ology		
Create RAID Volume		s	elect RAID Level
Name: RAID Level:	<mark>Volume1</mark> <raido(stri< th=""><th>ipe)&gt;</th><th></th></raido(stri<>	ipe)>	
Select Disks: SATA 0.2, INTEL SSDSC2BB150G7 DV651405D5150MGN, 139.7GB SATA 0.3, FUJITSU MHZ2160BH G K60HT9A3Y6AW, 149.0GB	0 <> 2 <>		
Strip Size: Capacity (HB):	<16KB> [0]		
▶Create Volume		RAID Level:	
Select at least two disks		RA100(Stripe) RA101(HiXror) Recovery	
F1 Help Esc Evit	1/↓ Select Item	F5/F6 Change Values	F9 Setup Defaults

Intel(R) Rapid Storage Technol	Intel(R) Rapio	d Storage Technology	
Create RAID Volume			Select RAID Level
Name: RAID Level:	Volume1 <raid1(hirror)></raid1(hirror)>		
Select Disks: SATA 0.2, INTEL SSDSC2BB150G70 DV651405D5150HON, 139,76B SATA 0.3, FUJITSU HHZ2160BH 62 K60HT9A3Y6AW, 149.06B	<>		
Capacity (HB):	[0]		
▶Create Volume			
Select two disks			
		B	
F1 Help Esc Exit	1/∔ Select Item +/→ Select Item	F5/F6 Change Values Enter Select ► SubMenu	F9 Setup Defaults F10 Save

6. Select the disk.

Intel(R) Rapid Storage Technology		
Create RAID Volume		X - to Select Disk
Name: Vo RAID Level: <r< th=""><th>olume1 AlD1(Hirror)&gt;</th><th></th></r<>	olume1 AlD1(Hirror)>	
Select Disks: SATA 0.2, INTEL SSDSC2BB150670 < : DV6514050515046N, 139, 76B SATA 0.3, FUJISU HHZ2160BH 62 < : K60H19A3Y6AW, 149,06B	>	
Capacity (HB): [0	)]	
▶Create Volume		
Select two disks		
	A	
F1 Help t/4 Select Its	tem F5/F6 Change Values	F9 Setup Defaults

7. Enter x and then press **Enter**.

	Intel(R) Rapid	Storage Technology	
Intel(R) Rapid Storage lechnol	ogy		
Create RAID Volume			X - to Select Disk
Name: RAID Level:	Volume1 <raid1(hirror)></raid1(hirror)>		
Select Disks: SATA 0.2. INTEL SSDSC2BB150G70 DV651405D5150HGN, 139.7GB SATA 0.3. FUJITSU HH2160BH 62 K60HT9A3Y6AW, 149.0GB	< >		
Capacity (HB):	[0]		
▶Create Volume			
Select two disks	SATA 0.2, INTEL SSDSC2BB1	50G70 DV651405D5150MGN, 13	9. 76B
	x	*	
	*		
F1 Help	t/↓ Select Item	F5/F6 Change Values	F9 Setup Defaults
Esc Exit	+/→ Select Item	Enter Select 🕨 SubMenu	FIU Save

The disk is now marked with an x next to it to indicate the selection.

Intel(R) Rapid Storage Technolog	Intel(R) Rap	id Storage Technology	
Create RAID Volume			X - to Select Disk
Name: RAID Level:	Volume1 <raid1(mirror)></raid1(mirror)>		
Select Disks: SATA 0.2, INTEL SSDSC200500 DV651405D5150HGN, 139.7GB SATA 0.3, FUJITSU HHZ21600H G2 K60HT9A3Y6AW, 149.0GB	< <>>		
Capacity (MB):	[143086]		
▶Create Volume		×	
	1 Coloris Marc	15/12 Change Malane	
Finerp II	Calent Item	Forfor Change Values	Fill Cours

8. Select the **Create Volume** option.

	Intel(R) Rapid	Storage Technology	
Intel(R) Rapid Storage Technolo	ogy		
Create RAID Volume	Volumol		Create a volume with the settings specified above
RAID Level: Select Disks:	<raid1(hirror)></raid1(hirror)>		
SATA 0.2, INTEL SSDSC2BB150G70 DV651405D5150MGN, 139.7GB SATA 0.3, FUJITSU MHZ2160BH G2 K60HT9A3Y6AW, 149.0GB	<x> <x></x></x>		
Capacity (MB):	[143086]		
▶Create Volume			
		K	
F1 Help Esc Exit	1/J Select Item +/→ Select Item	F5/F6 Change Values Enter Select ▶ SubMenu	F9 Setup Defaults F10 Save

A RAID volume is created based on the settings specified.

Intel(R) Rapid Storag	e Technology	Rapid Storage Technology	
Intel(R) RST 15.8.0.30	10 RAID Driver		Select to see more information about the RAID Volume
RAID Volumes: ⊁Volume1, RAID1(Hirror	), 139.76B, Normal		
		×	
F1 Help Esc Exit	1/↓ Select Item +/→ Select Item	F5/F6 Change Values Enter Select ► SubMenu	F9 Setup Defaults F10 Save

9. Press  $\ensuremath{\textbf{F10}}$  to save the settings.

### **Replacing a Disk**

1. Unplug the current SSD.

😥 Intel® Rapid Storage Technology	- 🗆 X
Status Manage Intel® Optane <sup>®</sup> Memory Pgrformance Ereferences Help	(intel)
Current Status Vour system is functioning normally. Manage Click on any element in the storage system View to manage its properties.  The Windows* write-cache buffer fushing policy can be enabled for all RAID array drives to ensure data integrity or disabled to improve data performance. Click the Hep icon for more information on setting the write-cache buffer fushing policy based on your needs.  Intel® Optane** memory status disabled. [Instem]	Storage System View () SATA, Array, 0000 116 GB 238 GB Volume 1 Volume 1 116 GB 116 GB 116 GB 116 GB 116 GB
	Internal empty port 2
	More help on this page
Intel® Rapid Storage Technology       Status     Marage       Intel® Optane™ Memory     Pgrformance       Perferences     Help	- • ×
Current Status Vour system is reporting one or more events, and data may be at risk. Befer to the details below for more information. Manage Citics on any element in the storage system view to manage its properties. Citics on any element in the storage system view to manage its properties. The Windowst write-cache buffer flushing policy can be enabled for all RAID array drives to ensure data integrity or disabled to improve data performance. Click the Help icon for more information on setting the write-cache buffer flushing policy based on your needs. SATA_Array_0000 SATA_Array_0000 Volume1: Degraded Deballine first any problems reported on the array disk, or rebuild the volume to a new disk.	Strage System View (%) SATA, Array, 0000 238 GS Vulpue ALD 116 GB Internal empty port 0 (%) Internal empty port 1
Unknown disk on Controller Unknown, Port Unknown: Missing S Intel® Optane <sup>®</sup> Memory Intel® Optane <sup>®</sup> memory status disabled. <u>Enable</u>	Internal empty port 2
	More help on this page

2. Install the new SSD.

֎ Intel® Rapid Storage Technology	– 🗆 X
Status Manage Intel® Qptane" Memory Pgrformance Preferences Help	(intel)
Current Status Vour system is reporting one or more events, and data may be at risk. Refer to the details below for more information. Manage Cick on any element in the storage system view to manage its properties. The Windows' write-cache bulker flushing policy can be enabled for all RAID array drives to ensure data integrity or disabled to improve data performance. Cick the Heip icon for more information on setting the write-cache Duffer flushing policy based on your needs. Stat_Array_0000 Stat_Array_0000 Nounet: Degraded Rebuild to another disk Debatis in Kar yn problems reported on the array disk, or rebuild the volume to a new disk. Uintrown disk on Controller Unknown: Musing  Intel® Optane® memory status: disabled. Enable	Storage System View
	More help on this page

#### 3. Click on the **Manage** tab.

Rapid Storage Technology	- 0 >	×
Status Manage Intel® Optane <sup>w</sup> Memory Performance Preferences Help	inte	Ģ
Manage Disk Controller Urknown Part loadio: Urknown Salau: Maing Tyse: SAA hard disk Uwger: Arry disk Sale d MB Sei in number: 20AA0831000050 Modee: Firmware: * Advanced	Storage System View	Status: Systems
	More help on this par	22

4. Select the new SSD and then click **Rebuild**.

😥 Intel® Rapid Storage Technology		- 🗆 X
Status Manage Intel® Optane™ Memory Performance	Preferences Help	(intel)
Manage Volume           Name: Volume1           Status: Degraded <sup>©</sup> Rebuilt to another disk           Details: Fix any problems reported on the array disks, or rebuilt the volume to a r Type RAID 1           Size: 118,226 MB           I Advanced	Rebuild Volume       Image: Comparison of the colume to maintain redundancy and keep your data protected.         Sect the disk you want to rebuild the volume to:       Image: Comparison of the colume to:         Image: SATA SSD on Controller 0, Port 3 (140 G8)       Image: Completing this action will permanently delete existing data on the selected disk. Back up data before continuing.         Image: WARNING: Completing this action will permanently delete existing data on the selected disk. Back up data before continuing.         Image: Wou can continue using other applications during this time.         Image: Mark being       Rebuild	Storage System View SATA, Array,0000 Volume 1 Volume
		More help on this page

5. Wait for the rebuild process to complete.

🗞 Intel® Rapid Storage Technology	- 🗆 ×
Status Monage Intel® Optane® Memory Performance Breferences Hep	(intel)
Manage Volume Name: Volume1 Statu: Revulang 21% complete Type: RAD 3 Size: 118.384 M8 ↑ Advanced	Storage System View
	More help on this page

2 Intel® Rapid Storage Technology	- 🗆 X
<u>Status</u> Manage Intel® Optane™ Memory Pgrformance Preferences Help	intel
Current Status         Your system is reporting one or more events, and data may be at risk.         Refer to the details below for more information.         Manage         Click on any events in the storage system view to manage its properties.         I Click on any events in the storage system view to manage its properties.         I Click on any events in the storage system view to manage its properties.         I Click on any events in the storage system view to manage its properties.         I methodows* write-cache buffer flushing policy can be enabled for al RAID array drives to ensure data integrity or disabled to improve data performance. Click the Help icon for more information on setting the write-cache buffer flushing policy based on your needs.         SARA_Array_0000 ?         Volume1: Rebuilding 4% complete         Unknown disk on Controller Unknown; Missing ?         Intel® Optane** Memory         Intel® Optane** memory status: disabled. Enable:	Storage System View
	More help on this page



#### **Removing a RAID Volume From the BIOS**

- 1. Power on the computer and press **F2** to enter the BIOS menu.
- 2. Select Device Management.



3. Select the Intel® Rapid Storage Technology option.

	Devic	e Manager	
Devices List Metwork Device List Fintel(R) Rapid Storage Technology Driver Health ▶ The platform is healthy			This formset allows the user to manage RAID volumes on the Intel(R) RAID Controller
Primary Video B10S	<pc1></pc1>		
Press ESC to exit.			
		6	
		~	
F1 Help Esc Exit		t/↓ SelectItem EnterSelect►SubMe	enu

4. Select the RAID volume that you want to remove.



5. Select **Delete** and then press **Enter**.

Intol(D) Danid Storago	Intel(R) Rapi	d Storage Technology	
Inter(k) kapid Storage	Technology		
RAID VOLUME INFO			
Volume Actions ⊁Delete			
Name: RAID Level: Strip Size: Size: Status: Bootable: ESATA 0.3 INTEL SSDSC20	Volume1 RAIDICHIrror) N/A 115,5G8 Norma1 Yes 88150670 DV65140505160404 138,7G8		
►SATA 0.4, HRSAL5C256GN	25100 A256N53E210003, 238.4GB		
		ß	
F1 Help	1/4 Select Item	F5/F6 Change Values	F9 Setup Defaults

6. Select **Yes** to confirm and then press **Enter**.

	Intel(R)	Rapid Storage Technology	
Intel(R) Rapid Storage Te	echno logy		
Delete Delete the RAID volume? ALL DATA ON VOLUME WILL BE	e lost!		Deleting a volume will reset the disks to non-RAID.
ÞYes ÞNo			
		R	
F1 Help Fsc Evit	1/1 Select Item	F5/F6 Change Values	F9 Setup Defaults

7. Press **F10** to save the settings.

# **4** Teaming

This chapter describes the setup process for the  $\ensuremath{\mathsf{Intel}}\xspace{\mathbb{R}}$  Teaming function.

The following topics are covered in this chapter:

- Creating an Intel® Net Team
- □ Adding a New Intel® Net Team Member
- Removing an Intel® Net Team Member
- Removing an Intel® Net Team

#### Creating an Intel® Net Team

- 1. Run the Windows PowerShell console as an Administrator.
- 2. Run the following command:

```
Import-Module -Name "C:\Program Files\Intel\Wired Networking\IntelNetCmdlets"
```



3. Run the New-IntelNetTeam command.

This command creates a new Intel ANS team consisting of one or more adapters. A team may consist of both Intel and non-Intel adapters. Adapter objects obtained using the **Get-IntelNetAdapter** command can be passed to the **New-IntelNetTeam** command using the **TeamMembers** parameter.

Administrator:	Vindows PowerShell	-		×
PS C:\Windows\sy tel(R) I210 Giga	stem32> New-IntelNetTeam -TeamName "Team 0" -TeamMemberNames "Intel(R) Ethernet Connect bit Network Connection" -TeamMode AdapterFaultTolerance	ion I2	19-LM",	"In
TeamName TeamMembers TeamMode PrimaryAdapter SecondaryAdapter	: TEAM: Team 0 : {Intel(R) I210 Gigabit Network Connection, Intel(R) Ethernet Connection I219-LM} : AdapterFaultTolerance : Intel(R) Ethernet Connection I219-LM : NotSet			
PS C:\Windows∖sy	stem32> _			

4. Check the Network adapters in the Windows Device Manager.



### Adding a New Intel® Net Team Member

1. Run the **Add-IntelNetTeamMember** command.

This command adds a new team member to an existing Intel® Advanced Network Services (Intel® ANS) Team. The new team member's name can be piped to this command or passed to it using the adapter name. An Intel® ANS team can contain a maximum of eight members.

🔁 Administrator: W	findows PowerShell	-		×
PS C:\Windows\sys	:tem32> Add-IntelNetTeamMember -TeamName "Team 0" -Name "Intel(R) I210 Gigabit Network	Connec	tion #2"	^
TeamName TeamMembers	: TEAM: Team 0 : {Intel(R) I210 Gigabit Network Connection, Intel(R) Ethernet Connection I219-LM, Int Gigabit Network Connection #2}	el(R)	1210	
TeamMode PrimaryAdapter SecondaryAdapter	: AdapterFaultTolerance : Intel(R) Ethernet Connection I219-LM : NotSet			
PS C:\Windows\sys	:tem32>			
				×

2. Check the Windows Device Manager to confirm the network adapter status.

📠 Device Manager	_	$\times$
<u>File Action View H</u> elp		
V 🗄 WINDOWS-GEISQNQ		^
> 🖬 Audio inputs and outputs		
> 💻 Computer		
> 👝 Disk drives		
> 🔙 Display adapters		
> 🎬 Firmware		
> 🛺 Human Interface Devices		
> 📷 IDE ATA/ATAPI controllers		
> 🥅 Keyboards		
> 🕼 Mice and other pointing devices		
> 🛄 Monitors		
> 🖵 MOXA Embedded Drivers		
🗸 📮 Network adapters		
🖵 Intel(R) I210 Gigabit Network Connection #3		
👳 Intel(R) I210 Gigabit Network Connection #4		
💭 Intel(R) I210 Gigabit Network Connection #5		
🚅 TEAM: Team 0		
🚅 TEAM: Team 0 - Intel(R) Ethernet Connection I219-LM		
👳 TEAM: Team 0 - Intel(R) I210 Gigabit Network Connection		
TEAM: Team 0 - Intel(R) I210 Gigabit Network Connection #2		
🚅 WAN Miniport (IKEv2)		
🕎 WAN Miniport (IP)		
🚽 WAN Miniport (ΙΡνδ)		
🕎 WAN Miniport (L2TP)		
🚅 WAN Miniport (Network Monitor)		
WAN Mininort (PPPOF)		~

#### **Removing an Intel® Net Team Member**

1. Run the **Remove-IntelNetTeamMember** command.

This command removes a team member from an Intel ANS team. The team member's name to be removed can be piped to this command or passed to it.

🔁 Administrator: V	Vindows PowerShell	-	×
PS C:\Windows\sy:	<pre>stem32&gt; Remove-IntelNetTeamMember -Name "Intel(R) I210 Gigabit Network Connection #2"</pre>		^
TeamName TeamMembers TeamMode PrimaryAdapter SecondaryAdapter	: TEAM: Team 0 : {Intel(R) I210 Gigabit Network Connection, Intel(R) Ethernet Connection I219-LM} : AdapterFaultTolerance : Intel(R) Ethernet Connection I219-LM : NotSet		
PS C:\Windows\sy:	stem32>		
			<b>.</b>

2. Check the Windows Device Manager to confirm the network adapter status.


# Removing an Intel® Net Team

Run the **Remove-IntelNetTeam** command. This command removes the specified Intel ANS team.

Z Administrator: Windows PowerShell	-	×	
PS C:\Windows\system32> Remove-IntelNetTeam -TeamName "Team 0" PS C:\Windows\system32>		^	•
		×	,

# **Unified Write Filter**

This chapter describes how to use the Unified the Write Filter (UWF).

To use the UWF, you must first install the feature and enable (optionally configure) it.

The first time you enable UWF on your device, UWF makes the following changes to your system to improve its performance:

- Paging files are disabled.
- System restore is disabled.
- SuperFetch is disabled.
- File indexing service is turned off.
- Fast boot is disabled.
- Defragmentation service is turned off.
- BCD setting bootstatuspolicy is set to ignoreallfailures.

After UWF is enabled, you can select a drive that you want to protect and start using UWF. UWF can help you manage PCs and devices remotely using WMI.

The following topics are covered in this chapter:

- Turning on UWF on a Running PC
- Installing UWF Using WMI

# **Turning on UWF on a Running PC**

- 1. Install UWF.
  - a. In the Windows Start window, type Turn Windows features on or off.
  - b. Open the Windows Features window and expand the **Device Lockdown** node.
  - c. Select Unified Write Filter and click OK.

Windows searches for the required files and displays a progress bar. Once the files are found, Windows applies the changes. When the changes are complete, a message to this effect is displayed.

d. Click Close.

📷 Windows Features	_		Х		
Turn Windows features on or off					
To turn a feature on, select its check box. To turn check box. A filled box means that only part of t	n a feature o he feature is	off, clear i s turned o	its on.		
🖃 🔳 🔂 Device Lockdown			^		
Custom Logon					
Keyboard Filter					
Shell Launcher					
Unbranded Boot					
Unified Write Filter					
Guarded Host					
🕀 🛄 Hyper-V					
Internet Explorer 11					
Internet Information Services Hostabl	e Web Core				
I Legacy Components			¥		
	ОК	Cano	cel		

2. Enable the following filter as an Administrator:

cmd uwfmgr filter enable

an Administrator: Command Prompt	-	×
C:\Windows\system32>uwfmgr filter enable Unified Write Filter Configuration Utility version 10.0.17763 Copyright (C) Microsoft Corporation. All rights reserved.		^
Unified Write Filter will be enabled after system restart.		
C:\Windows\system32>		

3. Enable write protection for a drive:

cmd uwfmgr.exe volume protect C:



4. Restart your computer.

5. Confirm that UWF is running:

cmd uwfmgr.exe get-config

Administrator: Command Pro	npt	15	- (	
C:\Windows\system32>uwf Unified Write Filter Co Copyright (C) Microsoft	ngr.exe get-config Ifiguration Utility version 10.0.17763 Corporation. All rights reserved.			
Current Session Setting				
FILTER SETTINGS				
Pending commit: N/ Shutdown pending:No				
SERVICING SETTINGS				
Type: Maximum size:	RAM 1024 MB			
Warning Threshold: Critical Threshold: Ereespace Passtbrow	512 MB 1024 MB b): OFF			
Persistent: OFF Reset Mode: N/A				

## Installing UWF Using WMI

If you have already installed Windows on your computer and you do not want to use a provisioning package, you can configure UWF by using Windows Management Instrumentation (WMI) providers. To turn on UWF using WMI, use the **UWF\_Filter** function, specifically the **UWF\_Filter.Enable** method in one of the following ways:

- Use the WMI providers directly in a PowerShell script
- Use the WMI providers directly in an application
- Use the command line tool, uwfmgr.exe

**NOTE** You must restart your computer after you turn on or turn off UWF for the changes to take effect.

You can also change the settings after you turn on UWF. For example, you can move the page file location to an unprotected volume and re-enable paging files.



#### IMPORTANT!

If you add UWF to your image by using SMI settings in the unattend.xml file, turning on UWF only sets the bootstatuspolicy BCD setting and turns off the defragmentation service. You have to manually turn off the other features and services if you want to increase the performance of UWF.

After the device is restarted, UWF maintains configuration settings for the current session in a registry. UWF automatically excludes these registry entries from its filter. Static configuration changes do not take effect until after a device restart; the changes are saved in registry entries for use in the next session. Dynamic configuration changes occur immediately and persist after a device restart.

# **Disk Hot Swap Function**

This chapter describes the setup process for the disk hot swap function.

The following topics are covered in this chapter:

- Setting Up the Disk Removal Policy
- Setting Up the Drive Actions
  - Default Actions
- Unmounting and Mounting Disks
  - > Unmounting a Disk Drive
  - > Mounting a Disk Drive
- Hot Swap Function Notifications

## **Setting Up the Disk Removal Policy**

1. Right-click on the Windows Start icon and select Device Manager.



2. Expand the **Disk drives** node.



3. Right-click on the target drive and select **Properties**.



4. In the **Policies** tab, select **Quick removal** and click **OK**.

512GB SATA Flash Drive Properties	×							
General Policies Volumes Driver Details Events								
Removal policy								
Quick removal     Disables write caching on the device and in Windows, but you can     disconnect the device safely without using the Safely Remove     Hardware notification icon.								
Better performance (default) Enables write caching in Windows, but you must use the <u>Safely Remove Hardware</u> notification icon to disconnect the device safely.								
Write-caching policy								
Enable write caching on the device								
Improves system performance by enabling write caching on the device, but a power outage or equipment failure might result in data loss or corruption.								
Turn off Windows write-cache buffer flushing on the device								
To prevent data loss, do not select this check box unless the device has a separate power supply that allows the device to flush its buffer in case of power failure.								
OK Cance	əl							

5. Click **Yes** to restart the computer and apply the new settings.

Your hardware settings have changed. You must restart your computer for these changes to take effect.
Do you want to restart your computer now?

# **Setting Up the Drive Actions**

1. Right-click on the Disk Hot Swap application icon on the Windows taskbar and select **Settings**.



2. Select the target drive and click **Edit Setting**.

Da	Physical Disk	Logical Disk	Disk Size	Free Disk Space	
1	512GB SATA F	(E·)	(488383MB)	(478000MB)	
1	MRV022A064G	(G; )	(61054MB)	(40449MB)	
		()	(	,,	Edit Setting
					Apply Log Option

- 3. Open an event tab (Button Pressed, Disk Plugged, Disk Unplugged, or Disk Usage) and select Custom Action.
- Associate the application that you want to run as the custom action when the event is triggered. The application will run in the background. The new settings will take effect the next time you run the **Disk Hot Swap** program.

🖳 Mxhtsp Setting		- 0	×				
Physical Drive : 512GB SATA Rash Drive Button Pressed Disk Plugged Disk Unplugged Disk Usage							
Custom Action     Default Action (It will blink the LED three times)		Apply					
© Custom Action	Browse « Windows (C:) > Program	ram Files → Wind	ows Photo Viewer	~	ن Search Window	rs Photo Viewer	× م
Organize 👻 Nev	w folder					H • 🔲	0
↓ Quick access		^	Date m	odified	Type File folder	Size	
■ Desktop 3 ↓ Downloads 3 ≧ Documents 3 ■ Pictures 3	inagingDevi InagingEngi PhotoAcq.dll	ices ine.dll I	9/15/20 9/15/20 7/29/20 9/15/20 9/15/20	18 5:10 PM 19 11:33 AM 18 5:10 PM 18 5:10 PM	Application Application extens Application extens Application extens	104 KB 2,204 KB 1,894 KB 46 KB	
os_image_MC TestTool ■ This PC ■ 3D Objects ■ Desktop ⊠ Documents ↓ Downloads ♪ Music ■ Pictures ■ Videos	12 NotoViewer.	File description: Company: Micro File version: 6.2.1 Date created: 9/1 Size: 1.65 MB	9/15/20 Windows Photo Viewe soft Corporation 7763.1 5/2018 3:39 PM	18 5:10 PM	Application extens	1,695 KB	
	File name: ImagingDevic	es			Open	Cancel	



#### **IMPORTANT!**

The action for the **Button Pressed** event is triggered only when the button is pressed for more than 3 seconds.

#### Example

The **Scanners and Cameras** application is run after the event **Disk Plugged** is triggered. A notification message pops up to indicate the change in status of the device.

Scanners and Cameras	×
If you do not see your device in the list, make sure it is connected to the computer and turned on, then choose Refresh.	
Refresh Scan Profiles Properties	
Close	
Info	
Disk T status: unplugged -> plug	gea

## **Default Actions**

If you do not configure a **Custom Action**, the following default actions are triggered by the events.

- 1. Button Pressed: Disk unmount procedure is triggered when the button is pressed for over 3 seconds.
- 2. Disk Plugged: The disk drive list in the Windows Device Manager is refreshed after a few seconds.
- 3. Disk Unplugged: The disk drive list in the Windows Device Manager is refreshed after a few seconds.
- Disk Usage: A notification on the disk usage is displayed.
   This event is triggered if on Check Disk Usage, the disk usage is equal to or higher than the disk usage threshold.

# **Unmounting and Mounting Disks**

## **Unmounting a Disk Drive**

1. Press the button of the target disk for more than three seconds.

The disk unmount procedure will start after the **Button is pressed** notification is displayed.



2. The **Disk has been unmounted** notification is displayed after the disk has been successfully unmounted.



If the disk unmount process fails, you will see the following message. Ensure that the target disk removal policy is set to **Quick removal** and the target disk is not busy before triggering the unmount process again.

Error	
Disk1 unmount fail.	
Device is currently in use or in incorrect removal policy	

3. After the disk has been unmounted, unplug the disk from your computer after you see the following notification.



This completes the disk unmounting process.

## **Mounting a Disk Drive**

1. Insert the disk into the computer.

The following notification is displayed.



2. The disk folder will open automatically after the disk is successfully mounted.

File Home Share View Drive Tools	Local Disk (E:)				- 0	×
Pin to Quick Copy Paste Copy path Move to *	Copy to Organize	New item •	Properties	Select all Select none Invert selection Select		
$\leftrightarrow \rightarrow \neg \uparrow \checkmark$ This PC > Local Disk (E:)					✓ ひ Search Local Disk (E:)	Q
Name	~	Date modified	Type	Size		
🖈 Quick access						
Desktop 🖈			This folder	is empty.		
Downloads *						
🗎 Documents 🖈						
Pictures 🖈						
Moxa MxhtspTray						
New folder						
os_image_MC1200_						
TestTool						
🤰 This PC						
3D Objects						
Desktop						
Documents						
Downloads						
b Music						
F Pictures						
📕 Videos						
😍 Windows (C:)						
Local Disk (E:)						
🕳 Local Disk (G:)						
😞 Local Disk (E:)						
🥧 Local Disk (G:)						
🕩 Network						
0 items						

# **Hot Swap Function Notifications**

Notification	Notification Content	Description		
Туре				
Info	Button is pressed	Displayed when a button is pressed for more than 3		
		seconds.		
Info	Disk has been unmounted	Displayed after a disk is successfully unmounted.		
Info	Disk status: unplugged -> plugged	Displayed after a disk is plugged into the computer.		
Info	Disk status: plugged -> unplugged	Displayed after a disk is unplugged from the computer.		
Info	Partition is over usage, execute user	Displayed when the disk usage is over a predefined		
	program	threshold. A user-specified program is run after this		
		event is triggered.		
Info	Partition is over usage, use system	Displayed when the disk usage is over a predefined		
	default action	threshold. A user-specified program is run after this		
		event is triggered.		
Error	Disk unmount fail. Device is currently	Displayed when disk unmount process fails; disk is in		
	in use or in incorrect removal policy	busy state or the removal policy is incorrect.		
Error	Invalid handle	Displayed when an internal error occurs.		
Application	Starting Moxa Disk Hot Swap	Displayed when the Moxa Disk Hot Swap application		
	Application	starts up.		
Application	Stopping Moxa Disk Hot Swap	Displayed when the Moxa Disk Hot Swap application		
	Application	stops running.		

# **Moxa IO Controller Utility**

This chapter describes how to use the Moxa IO Controller utility.

To use the Moxa IO Controller utility, first install the utility and enable the utility to configure the DIO, UART mode, and SIM settings. After the installation process is complete, run the Windows command prompt as an Administrator and change the path to C:\Program Files\Moxa\Moxa Computer IO Controller.



The following topics are covered in this chapter:

- Setting the DIO Status
- Setting the UART Mode
- Setting the SIM Status

# **Setting the DIO Status**

Type the command **mx-dio-ctl--help** command to see the instructions on using this utility and follow them to get or set the DIO status.



#### IMPORTANT!

The DIN and DOUT indices start at 0. Even though the console output starts at 1, the indices still start at 0.



#### **Example:**



# **Setting the UART Mode**

Type the **mx-uart-ctl** --help command to see instructions on using this utility and follow the onscreen instructions to get or set the UART mode.



#### **IMPORTANT!**

The UART index starts from 0. Even though the console output starts at 1, the index still starts at 0.



#### Example



## **Setting the SIM Status**

Type the **mx-sim-ctl --help** command to see instructions on using this utility and follow the onscreen instructions to get or set the status of the SIM card.



#### **IMPORTANT!**

The SIM card index starts from 0. Even though the console output starts at 1, the SIM card index still starts at 0.



#### Example



# **Moxa Serial Interface Utility**

In this chapter, we describe how to use the Moxa Serial Interface utility to set the UART mode in your computer's serial interface.

# Setting the UART Mode

- 1. Install the Moxa Serial Interface utility.
- 2. From the Windows Start menu, run the Moxa Serial Interface utility.

≡	Recently added
	Moxa Serial Interface
	Intel(R) PROSet Adapter Configurati
	Intel(R) Rapid Storage Technology
	Expand ~
	Intel ~
	M
	Moxa Serial Interface ^
	Moxa Serial Interface New
	S
8	Search
<b>L</b> J	🔅 Settings
	w
5	Windows Accessories ~
٢	Windows Administrative Tools 🛛 🗸
( <sup>1</sup> )	Windows Ease of Access 🗸 🗸
	Windows PowerShell V
	P H H

3. Select the target COM port and UART mode and click **Apply** to save the settings.

M	oxa Serial Ir	nterface		$\Theta \otimes$
ſ	COM Port -			Status
	COM	Mode	$\sim$	
	COM1	RS-232		K5-232
	COM2	RS-232		RS-485
	COM4	RS-232		RS-422
	COM5	RS-232		10 422
	COM6	RS-232		
	COM7	RS-232		
	COM8	RS-232	$\sim$	
			_	Apply Cancel

# 9 IO Control API

This chapter describes how to use the IO Control API.

The following topics are covered in this chapter:

#### Downloading the API

#### 🛛 mxdgio

- GetDinStatus
- GetDoutStatus
- SetDoutStatus

#### 🛛 mxsp

- GetUartMode
- SetUartMode

#### 🛛 mxwdg

- mxwdg\_open
- mxwdg\_refresh
- mxwdg\_close

#### 🛛 mxsim

- > GetSIMSlot
- > SetSIMSlot

# **Downloading the API**

- 1. Access the Moxa support page: <u>https://www.moxa.com/en/support</u>
- 2. Select the product series (example: DA-820).

					Contact Us	Partner Zone   My Moxa	Sign In	
MOXA	Products	Solutions	Support	How to	Buy	About Us	٩	
Home > Support								
Support Find product resources, reques	t support, or s	end in your product	for repair.					
Select a Product Se	eries		٦					
Select		•						
DA-820 Series DA-820-Ethernet Series Expansi	ion Modules		anty ervice/RMA	Re	esources Literature Lib	orary		
Easily find drivers, software, and documentation for a specific product.	$\checkmark$	Moxa's product rep centers provide qu service with compl of your product.	cair service ick, quality ete traceability		Moxa offers a w to help you find nformation on o solutions as we technologies the	realth of resources in-depth our products and Il as the at drive them.		

	DA-82	0 Series		
	3U 19-ind Intel® Cel	IEC 61850 native PRP/HSR computer with work, Core <sup>VIII</sup> 3 or /7 CPU		
Software & Documentation Product FAQs Secu	rity Advisories			
Related Software, Firmware, and Drivers				
FILTER Operating System -	All Driver(8) Firmware	2) Library(4) Ubility(7)		
NAME	TYPE	VERSION V OPERATING SYSTEM	RELEASE DATE Y	
Library for DA-820 Series (Windows 7 Example) 459.9 KB	.↓ Library	v1.0	Jan 29, 2015	
Driver for DA-820 Series (Peripheral for Linux) 651.6 KB	.↓. Driver	v1.0	Jan 22, 2015	
Driver for DA-820 Series (Linux) 318.5 KB	↓ Driver	v1.0	Jan 22, 2015	
Library for DA-820 Series (Windows 7 Example) 493 8 K3 Driver for DA-820 Series (Peripheral for Linux) 691 8 K3 Driver for DA-820 Series (Linux) 218 8 K3	ط Library بط Driver	v1.0 v1.0 v1.0	Jan 29, 2015 Jan 22, 2015 Jan 22, 2015	

## mxdgio

The mxdgio library operates on the digital I/Os and consists of the following:

- GetDinStatus
- GetDoutStatus
- SetDoutStatus

## GetDinStatus

#### <u>Syntax</u>

int GetDinStatus(int port);

#### **Description**

Gets the status of a digital input port.

#### **Parameters**

*port*: The index of the digital input port (starts at 0).

#### **Return Value**

The status of the digital input port; 0 for low and 1 for high.

#### Error codes

The following error codes can be retrieved by the **DIO\_STATUS** function.

Name	Value	Meaning
LIB_INITIALIZE_FAIL	-1	The mxdgio library initialization failed. Can't open json profile.
PORT_OUTOF_INDEX	-2	Target port index is out of range.

#### **Requirements**

Name	Items
Header	mxdgio.h
Library	mxdgio.lib
DLL	mxdgio.dll
Profile	MxdgioProfile[ <i>ModelName</i> ].json

## GetDoutStatus

#### <u>Syntax</u>

int GetDoutStatus(int port);

#### **Description**

Gets the status of a digital output port.

#### Parameters

*port*: The index of the digital output port; starts at 0.

#### **Return Value**

The status of the digital output port; 0 for low and 1 for high.

#### Error codes

The following error codes can be retrieved by the **DIO\_STATUS** function.

Name	Value	Meaning
LIB_INITIALIZE_FAIL	-1	The mxdgio library initialization has failed. Cannot open the json profile.
PORT_OUTOF_INDEX	-2	Target port index is out of range.

#### **Requirements**

Name	Items
Header	mxdgio.h
Library	mxdgio.lib
DLL	mxdgio.dll
Profile	MxdgioProfile[ <i>ModelName</i> ].json

### SetDoutStatus

#### <u>Syntax</u>

int SetDoutStatus(int port, int status);

#### **Description**

Sets the status of a digital output port.

#### **Parameters**

*port*: The index of the digital output port; starts at 0.

status: The status of the digital output port; 0 for low and 1 for high.

#### **Return Value**

Returns the value 0 if the digital output status is successfully set.

#### Error codes

The following error codes can be retrieved by the **DIO\_STATUS** function.

Name	Value	Meaning
LIB_INITIALIZE_FAIL	-1	The mxdgio library initialization failed. Can't open json profile.
PORT_OUTOF_INDEX	-2	Target port index is out of range.
SET_STATUS_ERR	-3	Set the status fail. Status is defined with a bad format.

#### **Requirements**

Name	Items
Header	mxdgio.h
Library	mxdgio.lib
DLL	mxdgio.dll
Profile	MxdgioProfile <i>[ModelName]</i> .json

## mxsp

The mxsp library operates on the serial port and consists of the following:

- GetUartMode
- SetUartMode

## GetUartMode

#### <u>Syntax</u>

int GetUartMode(int port);

#### Description

Gets the status of the UART port.

#### Parameters

port: The index of the UART port; starts at 0.

#### **Return Value**

The mode of a UART interface; 0 for RS-232, 1 for RS-485-2w, and 2 for RS-422.

#### Error codes

The following error codes can be retrieved by the **UART\_STATUS** function.

Name	Value	Meaning
LIB_INITIALIZE_FAIL	-1	The mxsp library initialization failed. Can't open json profile.
PORT_OUTOF_INDEX	-2	Target port index is out of range.

#### **Requirements**

Name	Items
Header	mxsp.h
Library	mxsp.lib
DLL	mxsp.dll
Profile	MxspProfile[ <i>ModelName</i> ].json

## SetUartMode

#### <u>Syntax</u>

int SetUartMode(int port, int mode);

#### **Description**

Sets the status of the UART port.

#### **Parameters**

port: The index of the UART port; starts at 0.

mode: The mode of a UART interface; 0 for RS-232, 1 for RS-485-2w, and 2 for RS-422.

#### **Return Value**

Returns 0 if the UART mode is successfully set.

#### Error codes

The following error codes can be retrieved by the UART\_STATUS function.

Name	Value	Meaning		
LIB_INITIALIZE_FAIL	-1	The mxsp library initialization failed. Can't open json profile.		
PORT_OUTOF_INDEX	-2	Target port index is out of range.		
SET_STATUS_ERR	-3	Set the status fail. Status is defined with a bad format.		

#### **Requirements**

Name	Items
Header	mxsp.h
Library	mxsp.lib
DLL	mxsp.dll
Profile	MxspProfile[ <i>ModelName</i> ].json

## mxwdg

The mxwdg library operates on the watchdog and consists of the following:

- mxwdg\_open
- mxwdg\_refresh
- mxwdg\_close

## mxwdg\_open

#### <u>Syntax</u>

PVOID mxwdg\_open(unsigned long time);

#### Description

Initializes the watchdog timer.

#### **Parameters**

time: The interval at which the watchdog timer is refreshed; the unit is seconds.

#### **Return Value**

Returns the pointer to the watchdog handle; returns -1 on failure to initialize the watchdog timer.

#### **Requirements**

Name	Items
Header	mxwdg.h
Library	mxwdg.lib
DLL	mxwdg.dll

## mxwdg\_refresh

#### <u>Syntax</u>

int mxwdg\_refresh(PVOID fd);

#### **Description**

Refreshes the watchdog timer.

#### Parameters

*fd*: The handle of the watchdog timer.

#### Return Value

Returns o on success; otherwise the function has failed.

#### **Requirements**

Name	Items
Header	mxwdg.h
Library	mxwdg.lib
DLL	mxwdg.dll

## mxwdg\_close

#### <u>Syntax</u>

void mxwdg\_close(PVOID fd);

#### Description

Disables the watchdog timer.

#### Parameters

*fd*: The handle of the watchdog timer.

#### **Return Value**

This function does not return a value.

#### **Requirements**

Name	Items
Header	mxwdg.h
Library	mxwdg.lib
DLL	mxwdg.dll

# mxsim

The mxsim library operates on the SIM slot index and consists of the following:

- GetSIMSlot
- SetSIMSlot

## GetSIMSlot

#### <u>Syntax</u>

int GetSIMSlot(int port);

#### **Description**

Gets the SIM card slot index number.

#### **Parameters**

port: The index of the SIM card slot; starts at 0.

#### **Return Value**

The SIM card slot number; 0 for SIM 0 slot, 1 for SIM 1 slot.

#### Error codes

The following error codes can be retrieved by the **SIM\_STATUS** function.

Name Value		Meaning		
LIB_INITIALIZE_FAIL	-1	The mxsim library initialization failed. Can't open json profile.		
PORT_OUTOF_INDEX	-2	Target port index is out of range.		

#### **Requirements**

Name	Items
Header	mxsim.h
Library	mxsim.lib
DLL	mxsim.dll
Profile	MxsimProfile[ <i>ModelName</i> ].json

## SetSIMSlot

#### <u>Syntax</u>

int GetSIMSlot(int port);

#### **Description**

Sets the SIM card slot index.

#### Parameters

*port*: The index of the SIM card slot; starts at 0.

slot: The SIM card slot of a SIM number; 0 is SIM 0 slot, 1 is SIM 1 slot .

#### **Return Value**

Returns 0 if the SIM card slot of the SIM number is successfully set.

#### Error codes

The following error codes can be retrieved by the **SIM\_STATUS** function.

Name	Value	Meaning		
LIB_INITIALIZE_FAIL	-1	The mxsim library initialization failed. Can't open json profile.		
PORT_OUTOF_INDEX	-2	Target port index is out of range.		
SET_STATUS_ERR	-3	Set the status fail. Status is defined with a bad format.		

#### **Requirements**

Name	Items
Header	mxsim.h
Library	mxsim.lib
DLL	mxsim.dll
Profile	MxsimProfile[ <i>ModelName</i> ].json

# **Windows Recovery**

This chapter describes the setup process of the Windows Recovery function.

The following topics are covered in this chapter:

- Preparing the USB Device
- Booting From a USB Recovery Disk
- System Image Backup
- Restoring the System From an Image File

# **Preparing the USB Device**

1. Ensure that your computer has the Diskpart version 10.0.17134.0 or higher installed.

You can check the version of the Diskpart tool using the following methods:

a. In the Windows start menu, type **winver** to check the OS build.

The OS version should be 1803 or higher and the corresponding OS build will be 17763 or later.

	All	Apps	Documents	Settings	Photos	More 🗸	Feedback	
ŵ	Best m	atch						
		winver Run comr	nand		$\rightarrow$			
Ø	Setting	IS (1)				winver Run command		
	,∕ wi	inver						
	Q		<b>=</b> Ø					

About Windows	×
Windows 10	
Microsoft Windows Version 1809 (OS Build 17763.379) © 2018 Microsoft Corporation. All rights reserved.	
The Windows 10 Enterprise LTSC operating system and its user interface are protected by trademark and other pending or existing intellectual property rights in the United States and other countries/regions.	
This product is licensed under the <u>Microsoft Software License</u> <u>Terms</u> to: moxa	
ОК	

- All Apps Documents Settings Photos More  $\checkmark$ Feedback ···· Best match ŵ Command Prompt Desktop app Settings (1) **Command Prompt** Desktop app 🖬 Open Run as administrator Dopen file location - Pin to Start - Pin to taskbar ŝ Ŧ Q Ξi 1 3 × Administrator: Command Prompt - diskpart Microsoft Windows [Version 10.0.17763.379] (c) 2018 Microsoft Corporation. All rights reserved. ::\windows\system32≻diskpart Microsoft DiskPart version 10.0.17763.1 Copyright (C) Microsoft Corporation. On computer: WINDOWS-B7Q4MH5 DISKPART>
- b. Run the command line as an **Administrator** and type **diskpart** to check the diskpart version.

2. Run the **BuildWindowsRecoveryUSB.exe** program from the **<USB** drive>\recovery folder.

📕   🛃 📕 🖛   Bu	iildUSB					
File Home	Share	View				× 🕐
$\leftrightarrow \rightarrow \cdot \uparrow$	> Bu	ildUSB		ٽ ~	Search BuildUSB	Q
	^	Name	Date modified	Туре	Size	
🖈 Quick access		BuildWindowsRecovervUSB	4/2/2019 8:53 AM	Application	39 KB	
Desktop	*	Microsoft.Wim.dll	10/21/2016 10:44	Application extens	49 KB	
🕂 Downloads	*	WindowsRecovery_V1.0.wim	4/2/2019 8:47 AM	WIM File	748,537 KB	
Documents	*					
Pictures	*					
BuildUSB	4					
3 items						

3. Click on the "..." button to select the \*.wim file from the *USB drive* folder.

🖳 BuildRecoveryUSB		_		$\times$
Select USB and file				
Windows Recovery File:				_
USB Drive:				
Y: - Patriot Memory USB Device	~ OK		Cancel	

Chose the WindowsRecover	ry file					×
	his PC > Desktop > BuildUSB			∨ Ö Se	arch BuildUSB	Q
Organize 🔻 New fold	der					
PackageCounter ^	Name	Date modified	Туре	Size		
PRP_HSR	WindowsRecovery_V1.0.wim	4/2/2019 8:47 AM	WIM File	748,537 KB		
- WindowsRecove						
💻 This PC						
3D Objects						
E. Desktop						
Documents						
🖶 Downloads						
b Music						
Pictures						
Videos						
Windows (C:)						
WINPE (W:)						
👝 Data (Y:)						
~						
File <u>r</u>	name: WindowsRecovery_V1.0.wim			~ W	IM files	$\sim$
					<u>O</u> pen   <del>▼</del> Can	cel

4. Select the **USB Drive** option and click **OK**.

🔛 BuildRecoveryUSB	_		×
Select USB and file			
Windows Recovery File:			
\Users\moxa\Desktop\BuildUSB\WindowsRecovery_V1.0.	wim		
USB Drive:			
Y: - Patriot Memory USB Device V OK		Cancel	
Y: - Patriot Memory USB Device			

The program will format the USB disk. Two volumes are created on the USB disk and the boot file is copied to the USB disk.

**NOTE** Additional pop-up windows may open during this process. You can close these windows after the process is completed.

5. Click **Exit** to close the program.

🖳 BuildRecoveryUSB	_		×
Build Recovery USB 1. Partition Disk (Done) 2. Apply File (Done)			
100 % Process Complete !		Exit	

After the process is completed, two volumes are created on the USB disk, as follows:

		💀 BuildRecoveryUSB		- 0	×	
		Build Recovery USB 1. Partition Disk (Done) 2. Apply File (Current) 49 %				
	and I on a start of the start	Manage WINP	E (W:)			
🚍   📝 📑 ╤   File Home Share View	← → × ↑ → WIN	VIEW Drive loois		ن م	Search WINPE (W:)	٩
← → × ↑ 🖬 > Data (Y:)	WindowsRecove ^	Name	Date modified	Туре	Size	^
<ul> <li>PRP_HSR</li> <li>WindowsRecove</li> <li>WindowsRecove</li> <li>This PC</li> <li>30 Objects</li> <li>Desktop</li> <li>Documents</li> <li>Documents</li> <li>Music</li> <li>Pictures</li> <li>Videos</li> <li>Windows (C:)</li> <li>WINPE (W:)</li> <li>Data (Y:)</li> </ul>	This PC  SD Objects  Decktop  Documents  Downloads  Music  Videos  Videos  WiNPE (W:)  Data (Y:)  UNINPE (W:)  WINPE (W:)	b bybg Bot cs-cz d-d-dk d-d-de EFI e-ryg e-r-us e-s-es e-res e-res e-res f-f-f f-r-ca f-r-fr	6/13/2018 10:01 AM 6/13/2018 10:01 AM	File folder File folder		
Data (Y:)	40 items	nr-nr	0/13/2018 10:01 AM	Hile Tolder		
0 items						

a. The first volume includes a **home** folder, which can be used to store the OS image.

🕳   🛃 📙 🖛			Manage	Data (D:)			·	×
File Home	Share	View	Drive Tools					~ 🕐
$\leftrightarrow$ $\rightarrow$ $\checkmark$ $\uparrow$	∎ > Dat	a (D:)				√ Ū	Search Data (D:)	P
<ul> <li>Quick access</li> <li>Desktop</li> <li>Downloads</li> <li>Documents</li> <li>Pictures</li> <li>This PC</li> </ul>	* * * *	Name	^		Date modified 5/9/2019 4:50 PM	Type File folder	Size	
👝 Data (D:)								
WINPE (E:)								
💣 Network								
1 item								

b. The second volume includes multiple folders that contain data that is required for booting into WinPE to run the recovery program.

**NOTE** This volume may not be visible in systems running Windows 7 or Windows 10 versions prior to 1803.

➡   💆 📑 ╤   File Home Sh	Manage Drive Tools	WINPE (E:)		-	
$\leftarrow \rightarrow \checkmark \uparrow \blacksquare \rightarrow$	WINPE (E:)		√ ঊ	Search WINPE (E:)	م
✓	Name	Date modified	Туре	Size	^
Deskton	🖕 📙 bg-bg	6/13/2018 10:01 AM	File folder		
	Boot	6/13/2018 10:01 AM	File folder		
Uownloads	🗶 cs-cz	6/13/2018 10:01 AM	File folder		
Documents	🖈 🔚 da-dk	6/13/2018 10:01 AM	File folder		
Pictures	🖈 🔚 de-de	6/13/2018 10:01 AM	File folder		
This DC	EFI	6/13/2018 10:01 AM	File folder		
> 💻 This PC	📙 el-gr	6/13/2018 10:01 AM	File folder		
> 👝 Data (D:)	en-gb	6/13/2018 10:01 AM	File folder		
	en-us	6/13/2018 10:01 AM	File folder		
> a WINPE (E:)	es-es	6/13/2018 10:01 AM	File folder		
> 💣 Network	es-mx	6/13/2018 10:01 AM	File folder		
	et-ee	6/13/2018 10:01 AM	File folder		
40 items	_				

 Copy the os\_image\_ModelName directory from the <USB drive>\recovery folder to the \home\partimag\ folder on the USB drive.

📙   🛃 📙 🖛   partir	mag				_	×
File Home S	hare View					~ 🕐
← → • ↑ <mark> </mark> ,	Data (D:) > hom	e > partimag >		~ Ū	Search partimag	<i>م</i>
Ouick access	Name	^	Date modified	Туре	Size	
Desktop	🖌 📙 os_imag	e_DA820C_V1.0	5/10/2019 9:20 AM	File folder		
Downloads	*					
Documents	*					
Pictures	*					
💻 This PC						
🔜 Data (D:)						
WINPE (E:)						
💣 Network						
1 item 1 item select	ed					

The USB disk is now ready for use in the recover process.

## **Booting From a USB Recovery Disk**

To boot up from a USB recovery disk, do the following:

- 1. Turn on the computer and press **F2** when you hear a beep.
- 2. In the BIOS setup menu, select Boot Manager and press Enter to continue

	Front Page
Front Page	
Continue	
▶Boot Manager	
▶Device Management	
▶Boot From File	
▶Setup Utility	
▶Intel(R) Management Engine Bl0S Extension	

3. Select the EFI USB Device option and press Enter to continue to boot from the USB device.



## System Image Backup

To back up the system image on to a USB disk, do the following:

- Boot the system from the USB disk.
   You will see the Windows Preinstallation Environment (WinPE) and the Windows Recovery utility.
- 2. In the Windows Recovery utility, click on the Backup icon.



- 3. Select the **Source** disk to backup and the **Destination** USB to store the OS image.
- 4. Specify a **Build ID** and an **Image Description** for the image file.
- 5. Click Start to backup.

	Windows Backup	23	
	Source	_	
	Disk - 0	×	
O a	Model: MRSAJAA064GTW25C00 Used Space: 19.3 GB (20,719,685,632) Bytes Free Space: 36.59 GB (39,284,023,296) Bytes	0	
	Destination	010	
	E	~	
10	Patriot Memory USB Device, Partition#0 Used Space: 12.09 GB (12,985,724,928) Bytes Free Space: 42.97 GB (46,136,131,584) Bytes		
UTUNIT			
	Build ID:		
	Windows_Image_01		1
	Image Description:		
	DA-820C 20190325 Test Image		
Backup	R	on	Exit Program
	os_image_Windows_Image_01		Windows
	Okadan kashar		ecoverv

6. Click **Yes** to continue the process.



7. Wait for the backup process to finish.

X:\windows\system32\cmd.e.	ve				
X:\Windows\Moxa\Window ows_Image_01.wim" /Cap	usRecovery>Dism /Cap otureDir:C:\ /Name:"	ture-Image /ImageFile:"E:\home Image"	\partimag\os_image_Windows_Imag	ge_01\os_image_Wind	
Deployment Image Servi Version: 10.0.17134.1	cing and Management	tool			
Saving image [-	3.0%			Ś	
			Loading		
		<b>X</b>	Image Cap	pturing	-1
				,	
		Backup	R os_image_Windows_Image_0	n kup	Exit Program

8. After the backup process is completed, click  $\mathbf{OK}$ .



 Click on the Shutdown button in the Windows Recovery utility and then click OK. The utility will shut down the computer.


The OS image is saved in the USB disk in the **home\partimag\** folder. The backup information and the image files can be found in the **os\_image\_\*** folder.

📙 🛛 🚽 🚽 🛛 os_image_	Windows_Image_01				
File Home Share	View				
$\leftarrow$ $\rightarrow$ $\checkmark$ $\uparrow$ $\square$ $\rightarrow$ Data (D:) $\rightarrow$ home $\rightarrow$ partimag $\rightarrow$ os_image_Windows_Image_01 $\checkmark$ $\circlearrowright$					
MxPrpSetup	Name	Date modified	Туре	Size	
PRP_HSR	a comm	3/26/2019 7:52 AM	Configuration sett	1 KB	
SoftwareInstallai	os_image_Windows_Image_01.wim	3/26/2019 8:07 AM	WIM File	6,827,545 KB	
Startup	Windows_Image_01	3/26/2019 7:52 AM	Configuration sett	1 KB	
💻 This PC	Windows_Image_01	3/26/2019 7:52 AM	Text Document	1 KB	
3D Objects					

## **Restoring the System From an Image File**

To restore the system image from a USB disk, do the following:

- Boot the system from the USB disk.
  You will see the Windows Preinstallation Environment (WinPE) and the Windows Recovery utility.
- 2. In the **Windows Recovery** utility, click on the **Recovery** button.



3. Select the **Source** USB device and the folder for the image file and select the image information.

4. Select the **Destination** disk to restore the system image to and click **Apply**.

	Windows Recovery	
	DA-820C 20190325 Test Image I Destination	
Backup R	Disk - 0 (MRSAJAA064GTW25C00) Model: MRSAJAA064GTW25C00 Used Space: 55.9 GB (60.019.868,160) Bytes N Exit Progra	am
		vs rv

5. Click **Yes** to start the recovery process.

🗿 Windows Recovery		
	•	
	Windows Recovery	
	Source Device	
So D	E: (Patriot Memory USB Device)	
No The second		
	Delete	
	Build ID:Windows_Image_01	
	Question X	
1010	20	
0101011	Recovery the system now?	
10101010101		
	Yes No Cancel	
in market		
	Model: MRSAJAA064GTW25C00	
Backup	Used Space: 55.9 GB (60,019,868,160) Bytes ation	Exit Program
	Apply	Nindowe
		COVORV
		covery
1		

6. Click **Yes** to confirm.

	Windows Recovery    Image: Source      Source    Device      E: (Patriot Memory USB Device)    Select Folder File      select Folder File    Select Folder File      build ID:Windows_Image_01    Delete      Build ID:Windows_Image_01    Delete      Image_Size 6.51 (GB    Image_02      Image_02    Image_02	
Backup R	Perindicion drive will be overwritten !!! Do you want to continue? Ves No Disk - 0 (MRSAJAA064GTW25C00) Model: MRSAJAA064GTW25C00 Used Space: 55.9 GB (60.019.868,160) Bytes	Exit Program
		ecovery

7. Wait for the restore process to complete.

D Windows Recovery				
<b>NACOX</b>	A*			
MOX				
0				
- 22		01010 010 010	noto a	
		0110101010		
2010	Apply Image			
1 1010		Apply Image 9 %		
010101010				
		Cancel		-1
		101		
S.		Stat -		
Backup	Recovery	Option	Information	Exit Program
				Windowo
				ecoverv
				<u> </u>
1				

8. Click **OK**.



 Click on the **Shutdown** button and then click **OK**. The utility will shut down the computer.



10. Reboot the computer.



## **IMPORTANT!**

When you restart the computer, you will need to wait for around 5 minutes for the computer to go through two cycles of reboots. The system configuration files will be initialized during the first boot-up process. Do not turn off the power or shut down the computer while the system is rebooting.