V2406A Windows Embedded Standard 7 Software Manual

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www.moxa.com/product



V2406A Windows Embedded Standard 7 Software Manual

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Thank you for purchasing a Moxa V2406A panel computer running the Windows 7 Embedded operating system. The Windows 7 Embedded OS provides a simple and familiar development environment for a variety of industrial applications.

G Software Components

Software Components

The following software components of the Windows Embedded Standard 7 OS come pre-installed on the V2406A computer.

Windows Embedded Standard 7

Core OS:

- 32/64-bit support
- Remote Client
- Remote Procedure Call

Applications and Services Development:

- .Net Framework 4.5
- Remote Desktop Protocol 7.1
- COM OLE Application Support
- COM+ Application Support
- MSMQ

Internet Services:

- Internet Explorer 8.0
- IIS 7.0

Diagnostics:

- Common Diagnostic Tools
- Problem Reports and Solutions

Fonts: Chinese (Trad. and Simp.), Japanese, Korean, Western, Middle Eastern, South East Asian, and South Asian Fonts

Graphics and Multimedia:

- MPEG DTV-DVD Audio Decoder (MPEG-2, AAC)
- MPEG Layer-3 Audio Codecs (MP3)
- MPEG4 Decoders
- Windows Media Video VC-1 (WMV) Codecs
- DirectX and Windows Device Experience
- Windows Media Player 12

Management:

- Group Policy Management
- Windows Management Instrument (WMI)
- Windows Update

Networking:

- Extensible Authentication Protocol (EAP)
- Internet Authentication Service
- Telnet Server
- Bluetooth
- Domain Services
- Network Access Protection
- Network and Sharing Center
- Quality of Service
- Remote Access Service (RAS)
- Telephony API Client
- Windows Firewall
- Wireless Networking

Security:

- Credential Roaming Service
- Credentials and Certificate Management
- Windows Authorization Manager (AZMAN)
- Windows Security Center
- Active Directory Rights Management
- Security Base
- Encrypted File System (EFS)
- Embedded Features:
- Enhanced Write Filter (EWF)
- File-Based Write Filter (FBWF)
- Message Box Default Reply
- Registry Filter
- WSDAPI for .NET

File Systems and Data Store:

- Windows Data Access Components
- Windows Backup and Restore

Embedded Self-Health Diagnostic Software: SNMP-based remote scripting layer for monitoring, reporting, and control

Linux

OS: Linux Debian 7

File System: EXT 4

Internet Protocol Suite: TCP, UDP, IPv4, SNMPv1/v2c/v3, ICMP, ARP, HTTP, SSH 1.0/2.0, SSL, DHCP, NTP, NFS, Telnet, FTP, TFTP, PPP, PPPoE

Internet Security: OpenVPN, iptables firewall

Web Server (Apache): Allows you to create and manage web sites; supports PHP and XML

Secure Shell for Remote Access: SSH allows remote logins to a secure encrypted console from any connected network

Dial-up Networking: PPP Daemon for Linux that allows Unix machines to connect to the Internet through dialup lines, using the Point-to-Point Protocol (PPP). Works with 'chat', 'dip', and 'dialu dip', and 'diald', among (many) others. Supports IP, TCP, UDP, and (for Linux) IPX (Novell).

File Server: Enables remote clients to access files and other resources over the network

Watchdog: A watchdog timer that triggers a system reset upon software freezes, for both specific applications and system-wide failures.

Application Development Software:

- Moxa API Library
- GNU C/C++ cross-compiler
- GNU C library
- Perl

Software Package:

- SNMP
- SafeGaurd technology

Terminal Server (SSH): Provides secure encrypted communications between two un-trusted hosts over an insecure network

Tailored MIB File for SNMP Control: SNMP allows centralized network monitoring and control. With Moxa's proprietary MIB file, trap notifications keep network overhead low while providing monitoring and control of key BIOS settings; internal hardware sensors; interface connectivity for DI/DO, USB, and UART; and other peripheral devices.

System Initialization

In this chapter, we describe how to initialize the system settings on the V2406A embedded computer when booting up for the first time.

The following topic is covered in this chapter:

- Overview
- Initializing User Settings

Overview

Similar to using a laptop computer for the first time, you need to specify a user name and create a user account to start using the V2406A embedded computer. Follow the procedure described in the next section.

NOTE If you perform a system recovery on the V2406A embedded computer, the system automatically resets to the factory defaults. You must initialize the user settings again.

Initializing User Settings

1. When you turn on the embedded computer for the first time, enter a user name for the computer.

🕞 👩 Set Up Windows	
Choose a user name for your account. Your computer's name is managed by your organization's choose a user name for your account. Your computer's name is managed by your organization's choose a user name (for example, John):	
Copyright © 2010 Microsoft Corporation. All rights reserved.	

2. Type a password and retype the password to confirm.

You may also type a password hint that you can refer to if you forget your password. If you do not want to set a password, leave all three fields blank. Click **Next** to continue.

) of Set Up Windows	
	Set a password for your account Creating a password is a smart security precaution that helps protect your user account from unwanted users. Be sure to remember your password or keep it in a safe place. Type a gassword (recommended):	
	Betype your password: Type a password bint. Choose a word or phrase that helps you remember your password.	
	if you forget your password, Windows will show you your hint.	
L	Net]

3. Select a Windows update option.

Help protect your computer and improve Windows automatically Image: Use recommended settings Use recommended settings Install important and recommended updates, help make Internet browsing safer, check online for solutions to problems, and help Microsoft improve Windows.
Install important updates only Only install security updates and other important updates for Windows. Image: Security updates and other important updates for Windows. Image: Security updates and other important updates could be update. Learn more about each option When you use recommended settings or install updates only, some information is sent to Microsoft. There information is not used is deterily our or contrat you. To turn off these settings later, search for Turn off recommended setting in Help and Support. Each the procedy statement

4. Select the computer's current location.

Windows automatically applies the appropriate network settings based on the type of network you select.

C	😝 😝 Set Up Windows	
	Select your computer's current location This computer is connected to a network. Windows will automatically apply the correct network steatings based on the network's location. Work network Home network Bit the computers on this network are at your home, and you recognize them, this is a trusted home network. Don't choese this for public places such as coffee shops or approx. Work network Work network Bit the computers on this instruction are at your workplace, and you recognize them, this is a trusted work network. Den't choese this for public places such as coffee shops or approx. Work network Bit bit computers on this instruction are at your workplace, and you recognize them, this is a trusted work network. Den't choese this for public places such as coffee shops or approx. Work network Bit the computers on the network (for example, you're in a coffee hopp or append, you're inpact, comparise at the computers on the network (for example, you're in a coffee hopp or append, you're inpact, comparise at the computers on the network (for example, you're in a coffee hopp or append, you're inpact, comparise at the computers on the network (for example, you're in a coffee hopp or append, you work workplace, and you recognize them, this is a public network and is not interviewed and in the specific network and is not interviewed and interviewed and in the interviewed and interviewed andinterviewed and interviewed and interviewed and interviewed and in	
	Hyou aren't sure, select Public network.	

5. When the Windows desktop screen appears, you can start using your V2406A embedded computer.



Configuring the Serial Interface

This chapter describes how to configure the serial interface on the V2406A embedded computer.

The following topics are covered in this chapter:

- Overview
- Configuring the Serial Interface Mode

Overview

The V2406A supports the following serial modes: **RS-232**, **RS-485-2-wire** and **RS-422/485-4-wire**. These modes can be configured from COM1 to COM4.

Configuring the Serial Interface Mode

Complete the following steps to configure the serial interface mode:

- 1. Open Device Manager.
- Under Multi-port serial adapters, right-click MOXA CP-114EL Series (PCI Express Bus) and select Properties.

🚔 Device Manager		
File Action View Help		
🔶 🤿 📅 🔛 🔛 🖬 📢 😭 🎭 🕯	5	
Jisk drives		
General DE ATA/ATAPI controllers General Controllers General Control Contro Control Control Control Contr		
MOXA Embedded Drivers	ere Burg)	
Network adapters Network adapters Ports (COM & LPT) Processors Randisk	Update Driver Software Disable Uninstall	
	Properties	
Opens property sheet for the current selection.		

 Click the Ports Configuration tab and select the COM port to configure (for example, COM1); then, click Port Setting.

neral	Ports Conf	iguration Driver	Details Reso	urces	
Port	COM No	Bx FIFO Level	Tx FIFO Level	Interface	Termination Besistor
1	COM 1	High	High	RS-232	Disable
2	COM 2	High	High	HS-232	Disable
3	COM 3	High	High	RS-232 DC 222	Disable
	<u>H</u> elp]		Port Info	Port Setting

4. From the **Interface** drop-down list, select a serial mode and click **OK**.

NOTE By default, the serial mode setting applies to all ports on the V2406A computer. If you want to configure the serial mode for a port, clear the **Set the change to all port** check box.

Port Number	COM1 (current)
🔽 Auto	Enumerating <u>C</u> OM Number
<u>R</u> x FIFO Level	High 💌
🔽 Set th	e change to <u>a</u> ll ports
<u>I</u> x FIFO Level	High 💌
✓ Set th	e change to all ports
nterface	RS-485 4W 💌
<mark>.</mark> Set th	ne ch RS-232 RS-422
T <u>e</u> rmination Resisto	RS-485 4W
G Cat H	e change to all ports

5. Check that the serial interface is correct.

Port COM No. Rx FIFO Level Tx FIFO Level Interface Termination Resistor 1 COM 1 High High RS-485 4W Disable 2 COM 2 High High RS-485 4W Disable 3 COM 3 High High RS-485 4W Disable 4 COM 4 High High RS-485 4W Disable	neral	Ports Confi	guration Driver	Detaile Reco	urces	
Port COM No. Rx FIFO Level Tx FIFO Level Interface Termination Resistor 1 COM 1 High High RS-485 4W Disable 2 COM 2 High High RS-485 4W Disable 3 COM 3 High High RS-485 4W Disable 4 COM 4 High High RS-485 4W Disable	Incrai		Serence Dilver	Details	urces	
1 COM 1 High High RS-485 4W Disable 2 COM 2 High High RS-485 4W Disable 3 COM 3 High High RS-485 4W Disable 4 COM 4 High High RS-485 4W Disable	Port	COM No.	Rx FIFO Level	Tx FIFO Level	Interface	Termination Resisto
2 COM 2 High High RS-485 4W Disable 3 COM 3 High High RS-485 4W Disable 4 COM 4 High High RS-485 4W Disable	1	COM 1	High	High	RS-485.4W	Disable
3 COM 3 High High RS-485 4W Disable 4 COM 4 High High RS-485 4W Disable Help Port Setting	2	COM 2	High	High	RS-485 4W	Disable
4 COM 4 High High RS-485 4W Disable	3	COM 3	High	High	RS-485 4W	Disable
Help Port Info	4	COM 4	High	High	RS-485 4W	Disable
		Help	1		Port Info	Port Setting
						OK Car

Enabling Embedded Filters

In this chapter, we describe how to enable the V2406A's embedded filters.

The following topics are covered in this chapter:

Enhanced Write Filter

- > Overview
- > Enabling Enhanced Write Filter
- > Committing Data and/or Disabling EWF

□ File-Based Write Filter

- > Configuring File-Based Write Filter
- Excluding Files from FBWF Protection
- > Managing Temporary Files Cached in the Overlay

Enhanced Write Filter

Overview

Enhanced Write Filter (EWF) enables you to protect a volume from unauthorized writes by making the main operating system (OS) drive a write-protected volume, effectively making the system a read-only system for most users. This provides much stronger protection against malicious computer attacks (such as trojans, worms, and viruses).

Enhanced Write Filter (EWF) allows Windows 7 users to protect data on their storage drive from permanent changes of any sort, at the lowest level of hardware protection available: the bit level. **EWF** allows the OS to boot from the hard disk, but protects the system by creating a virtual file system called an **overlay**. All writes to an EWF-protected volume (the **hard disk** in the following figure) are only recorded on this virtual overlay (the **EWF Volume** in the following figure), which is stored independently in random access memory (RAM).

Because EWF does not write data directly to the hard disk but instead only records system writes to this virtual RAM overlay, any data that is "written" during system operation will disappear upon the next re-boot. This approach allows the system to operate as if it is writeable when in reality all OS and user-space file systems are stored in a permanent, read-only state.

If required, data written to the overlay can be committed to the protected volume, but this requires additional setup and permissions that can only be granted by the administrator.



The following figure shows an overview of the EWF structure.

For more detailed information about EWF configuration and usage, refer to the following resources:

- Visit Microsoft's <u>EWF Volume Configuration</u> help pages.
- See Microsoft's <u>EWF overview</u> on the official Microsoft EWF help pages.
- See Microsoft's detailed description of <u>EWF modes</u> on the EWF help pages.
- See Microsoft's detailed description of the EWF API.
- For EWF commands, refer to the MSDN web site: <u>http://msdn.microsoft.com/en-us/library/ms940853%28v=winembedded.5%29.aspx</u>

Enabling Enhanced Write Filter

Follow these steps to enable Enhanced Write Filter (EWF):

- 1. To open EWF, double-click the padlock icon in the system tray.
- 2. You may need to show hidden icons in the system tray.



3. In the **Volume Information** area, select the partition you want to enable write-protection on and click **Configure...**.

Name	Overlay Type	State	Pending Command
Volume 1	RAM (Reg)	Disabled	No command
C:	RAM (Reg)	Disabled	No command
			Show <u>v</u> olume details
IORM information	Disabled	Overla	Show <u>v</u> olume details, ay information
IORM information	Disabled	Overla	Show <u>v</u> olume details ay information ay size:
IORM information	Disabled	Overla Overla Space	Show <u>v</u> olume details ay information ay size: available:

4. The Configuration dialog box appears. Select **Enable** from the **Pending command** drop-down list and click **OK**.

nfiguration			
Name	Overlay Type	State	Pending Command
Volume 1	RAM (Reg)	Disabled	No command
C:	RAM (Reg)	Disabled	Enable
ending commar	nd: Enable		
ending commar	nd: Enable		

- 5. Reboot the system.
- 6. Log into the system and verify that the padlock icon in the system tray indicates that the drive volume is locked with EWF.



Committing Data and/or Disabling EWF

Perform the following steps to write (or commit) data to an EWF-enabled drive.

NOTE You must have administrator privileges to commit data to the drive.

1. Double-click the padlocked drive in the system tray.

You may need to show hidden icons in the system tray.



2. In the **Enhanced Write Filter: Overview** dialog box, select the drive you want to configure and click **Configure**.

Name	Overlay Type	State	Pending Command
Volume 1	RAM (Reg)	Disabled	No command
C:	RAM (Reg)	Enabled	No command
			Show <u>v</u> olume details
ORM information ORM state:	Disabled	Overla Overla Space	Show <u>v</u> olume details ay information ay size: available:

- 3. In the Enhanced Write Filter Configuration screen, select a drive volume; then, select an option from the **Pending Command** drop-down list:
 - No Command
 - Disable: Disables EWF on the selected drive. The system automatically reboots if you select this
 option.
 - **Commit:** Writes all current system changes to the hard drive.
 - **Commit and Disable Live:** Writes all current data and changes to the system, and also turns off EWF on the selected drive (so that all future data and system changes will also be committed to the drive). The system does not automatically reboot if you select this option.

Overlay Type RAM (Reg) RAM (Reg)	State Disabled Enabled	Pending Command No command No command
RAM (Reg) RAM (Reg)	Disabled Enabled	No command No command
RAM (Reg)	Enabled	No command
No command		5
No command Disable Commit Commit and d	isable live	HORM support
	Disable Commit Commit and d	Disable Commit Commit and disable live

NOTE For detailed information, go to the Microsoft website at <u>http://msdn.microsoft.com/en-us/library/ff794092(v=winembedded.60).aspx</u>.

File-Based Write Filter

This section describes how to use the File-Based Writer Filter (FBWF). Note that when Enhanced Writer Filter is enabled, the File-Based Writer Filter function will not work.

According to Microsoft:

"File-Based Write Filter (FBWF) allows the Windows Embedded platform to maintain the appearance of read and write access on write-sensitive or read-only storage. FBWF makes read and write access transparent to applications.

Writing to storage media may be undesirable or impossible in embedded devices. FBWF redirects all writes targeted for protected volumes to a RAM cache called an overlay. Used in this context, an overlay is similar to a transparency overlay on an overhead projector. Any change made to the overlay affects the picture as seen in the aggregate, but if the overlay is removed, the underlying picture remains unchanged."

FBWF supports an advanced ESF feature, which allows users to specify which directory to write data to. The default directory is c:\temp. The advanced feature allows you can read/write data to disk without committing an action.

Configuring File-Based Write Filter

Complete the following steps to enable the File-Based Write Filter (FBWF) feature. Note that although FBWF and EWF may both be enabled on the same machine, FBWF does not protect a volume that is already protected by EWF. Similarly, EWF does not protect a volume that is already protected by FBWF.

NOTE Before using FBWF, make sure that you disable EWF.

- Double-click the padlock icon in the system tray. You may need to show hidden icons in the system tray.
- **NOTE** When disabled, the EWF and FBWF icons in the system tray look the same. To verify that you have opened the correct writer filter program, check the screen title.



2. In the File Based Writer Filter: Overview screen, click Configure.

File Based Write Filter:	Overview		×
	Current	After restart	
State Cache compression Cache pre-allocation Cache threshold Protected volumes	Disabled Disabled Disabled 128 MB	Disabled Disabled Disabled 128 MB	
Show <u>e</u> xclusion	ist	Cor	nfigure
Show cache cont	ent]	
Runtime information:			
Runtime information:	ry structur	e:	0 bytes
Runtime information: RAM used for directo RAM used for file dat	ry structur a:	e:	0 bytes 0 bytes

- 3. To enable FBWF protection on a storage drive, perform the following actions:
 - a. Select Filter state enabled and Cache pre-allocation enabled.
 - b. In the Volume Configuration area, select the storage drive you want to protect and click Protect.
 - c. Click Apply or OK.

A Virite Filter	sion List Cach	e Content B	×
Filter configuration	bled sion enabled	Currently: Disabled	
Cache pre-alloc	ation enabled	Currently: Disabled	
Volume configuration	on State	After reboot	
bbf71292-a Volume 1	Unprotected Unprotected Unprotected	Unprotected Unprotected Unprotected	
	OK	E Cancel Apply	Help

- NOTE To minimize memory usage on the overlay cache, select Cache compression enabled. However, cache compression decreases performance when accessing protected volumes.
 Select Cache pre-allocation enable to set the memory space available for the overlay cache when the system starts up, instead of adjusting it as needed.
 You cannot enable cache pre-allocation and cache compression at the same time.
 The cache threshold field sets the amount of memory that can be used by the write filter for the overlay cache. The default value and size limits for the overlay cache vary depending on the operating system.
 - 4. Reboot the system.
 - 5. Log into the system and verify that the padlock icon in the system tray displays a number and indicates that FBWF is enabled on a drive. The following figure shows an example.



Excluding Files from FBWF Protection

- Double-click the FBWF icon in the system tray. You may need to show hidden icons in the system tray.
- 2. In the File Based Write Filter: Overview window, click Configure.

Fi	le Based Write Filter:	Overview			×
		Current	After restart		
	State Cache compression Cache pre-allocation Cache threshold Protected volumes	Enabled Disabled Enabled 128 MB C:	Enabled Disabled Enabled 128 MB C:		
	Show exclusion l	ist	Con	figure	
	Show c <u>a</u> che cont	ent]		
	Runtime information:				
	RAM used for directo	ry structur	e:	8.47 MB	
	RAM used for file dat	a:		13.5 MB	
				Close	•

- 3. Click the **Exclusion List** tab and configure the following fields:
 - Volume name Select a drive volume from the drop-down list.
 - Add path click the ellipsis (...) button to select a directory or file you want to exclude from FBWF protection; then click the + button. The system displays the selected directory or file in the Path table.

File Based Write	e Filter
Configuration	Exdusion List Cache Content
Volume name	: C: •
Path	
VProgram F	iles\CMAK\cmak.exe Excluded after reboot
Add paths	Drogram Eiles/CMAK/cmak eve
Add path.	
	OK Cancel Apply Help

4. Click the Cache Content tab and click Apply and OK.

File Based Write Filter		×
Configuration Exclusion List Cache Content		
Volume name: C:		
Path	Cache size	-
\inetpub\temp\appPools\APC2F78.tmp	72.0 KB	=
\ProgramData\Micro\SystemIndex.1.Crwl	4.00 KB	
\ProgramData\Micro\SystemIndex.1.gthr	4.00 KB	
\ProgramData\Microsoft\Search\MSS.chk	8.00 KB	
\ProgramData\Microsoft\Search\MSS.log	8.00 KB	
\ProgramData\Microsoft\Se\Windows.edb	512 KB	
\ProgramData\Microsoft\Search\tmp.edb	8.06 MB	
\Windows\bootstat.dat	4.00 KB	
\Windows\inf\setupapi.dev.log	56.0 KB	
\Windows\prefetch\AgGIFaultHistory.db	4.00 KB	-
Add to exclusion list	Re <u>s</u> tore Co	o <u>m</u> mit
OK Cancel	<u>Apply</u>	Help

5. Reboot the system to make the changes take effect.

Managing Temporary Files Cached in the Overlay

- 1. On the **Cached Content** tab, you will see all the files currently cached in the RAM overlay. Three commands are available:
 - **Commit**: Save a file from the cache to permanent storage, delete the file from the overlay, and overwrite the original file.
 - **Restore**: Return the file to its original state, remove the file from the overlay cache and discard the changes that added the file to the cache.
 - Add to exclusion list: Adds the file to the exclusion list after the next restart. This will delete the file from the cached overlay and replace the current file in permanent storage with the modified cache file.

File Based Write Filter	×
Configuration Exclusion List Cache Content	
Volume name: C:	
Path	Cache size
\inetpub\temp\appPools\APC2F78.tmp	72.0 KB
\ProgramData\Micro\SystemIndex.1.Crwl	4.00 KB
\ProgramData\Micro\SystemIndex.1.gthr	4.00 KB
\ProgramData\Microsoft\Search\MSS.chk	8.00 KB
\ProgramData\Microsoft\Search\MSS.log	8.00 KB
\ProgramData\Microsoft\Se\Windows.edb	512 KB
\ProgramData\Microsoft\Search\tmp.edb	8.06 MB
\Windows\bootstat.dat	4.00 KB
\Windows\inf\setupapi.dev.log	56.0 KB
\Windov s\prefetch\AgGlFaultHistory.db	4.00 KB 👻
Add to exclusion list	Restore Commit
OK Cancel	Apply Help

 The most common usage of the Cache Content filter will likely be to permanently write content to the hard drive. To do this, select the file you wish to write to permanent memory and click on the **commit** button. This will delete the file from the cached overlay and replace the current file in permanent storage with the modified cache file. Keep in mind that committing a configuration or application file will permanently alter the setup and/or performance of the application or system.

File Based Write Filter		×
Configuration Exclusion List Cache Content		
Volume name: C:		
Path	Cache size	*
\V2406WES7_FBWFManagementTool_Oper	4.00 KB	
\V2406WES7_FBWFManagementTool_Oper	988 KB	
\V2406WES7_FBWFManagementTool_Oper	16.0 KB	
\V2406WES7_FBWFManagementTool_Oper	48.0 KB	
\V2406WES7_FBWFManagementTool_Oper	16.0 KB	-
<	۰.	
Add to exclusion list Restore	Commit	
OK Cancel Apply	Hel	p

For more details about FBWF configuration and usage, refer to the Microsoft help file that came with your computer, or go to the following websites:

- Microsoft's <u>FBWF Installation and Configuration</u> help pages.
- Microsoft's <u>FBWF overview</u> on the official Microsoft FBWF help pages.
- Microsoft's detailed description of <u>FBWF features</u> on the FBWF help pages.
- Microsoft's detailed description of the FBWF API.

4-11

Moxa Diagnostic Package

In this chapter, we describe the software package that can be used to monitor the system status of the V2406A computer.

The following topics are covered in this chapter:

- Installing Moxa Diagnostic Utility
- Using Moxa Diagnostic Utility

Installing Moxa Diagnostic Utility

To use Moxa Diagnostic Utility on the V2406A computer, first install the Moxa Diagnostic package.

Complete the following steps to install the Moxa Diagnostic package.

- 1. In the \utility\mxdiagnostic\ folder on the software DVD, double-click mxDiagnosticTool.msi.
- 2. A Welcome screen appears. Click Next.



3. Accept the default folder location or click Browse to select an installation folder; then, click Next.

岁 Moxa Predictive Maintenance Diagnostic Tool	
Select Installation Folder	
The installer will install Moxa Predictive Maintenance Diagnostic Tool to the To install in this folder, click "Next". To install to a different folder, enter it be Folder:	following folder. slow or click "Browse".
C:\Program Files\M0XA\Moxa Predictive Maintenance Diagnostic Tc	Browse Disk Cost
Install Moxa Predictive Maintenance Diagnostic Tool for yourself, or for a computer:	nyone who uses this
Cancel < <u>B</u> ack	Next >

4. Click **Next** to continue.



5. Click **Close** to complete the installation process.

📅 Moxa Predictive Maintenance Diagnostic Tool	×
Installation Complete	
Moxa Predictive Maintenance Diagnostic Tool has been successfully installed.	
Click "Close" to exit.	
Please use Windows Update to check for any critical updates to the .NET Framework.	
Cancel < <u>B</u> ack C	lose

Using Moxa Diagnostic Utility

This section describes how to use the Moxa Diagnostic Utility on the V2406A.

1. From the Start menu, click All Programs > Moxa > Moxa Predictive Maintenance Diagnostic Tool > Moxa Predictive Maintenance Diagnostic Tool.

🧒 Default Programs	
😰 Desktop Gadget Gallery	
🏉 Internet Explorer	moxa
Windows Fax and Scan	
🖸 Windows Media Player	Documents
Windows Update	
🛹 XPS Viewer	Pictures
Accessories	
퉬 Intel	Music
🎉 Maintenance	
📕 Moxa	Computer
Moxa Hot Swap Function For Disk Drive	
🎉 Moxa Predictive Maintenance Diagnost	Control Panel
😥 Moxa Predictive Maintenance Diagn	ostic Tool
📕 Startup	Devices and Printers
Subsystem for UNIX-based Applications	Default Programs
	Help and Support
	Windows Security
1 Back	
Search programs and files	Log off

2. The **System Temperature** tab shows the current and threshold values of the CPU and system temperatures (in degrees Celsius).

When the current temperature exceeds the threshold value, the screen displays "warning" in the **Status** field and logs the status change.

SystemTemp	perature SystemVot	tage SystemFreque	Incy SystemResource	De Settings	
	Item Name	Threshold Value	Current Temperature	Status	
•	CPU Temperature	100	52	Normal	
	System Temperat	80	35	Normal	

3. To change the threshold value, double-click the value in the Threshold Value field and enter a number.

	74-2-2-		-271		and the second	
retom To	magneture C i 1/					
stennie	System Vo	ltage SystemFre	equency SystemReso	urce Settings		
vaterin ne	inperature System Vo	ltage SystemFre	quency SystemReso	urce Settings		
	Item Name	Itage SystemFre Threshold Value	equency SystemReso Current Temperature	urce Settings Status		
	Item Name CPU Temperature	Itage SystemFre Threshold Value	Current Temperature	Urce Settings Status Normal		

4. Click **Yes** to save the changes.

l	Confirm	(Annual	X
	Threshold value has been	changed, do you want to	save it?
		Yes	No

5. Click the **System Voltage** tab to view the current system voltages (in V).

💀 Moxa P	redictive Mainten	ance Diagnostic Too	bl		
SystemTem	nperature SystemV	oltage SystemFreque	ency SystemRe	source Settings	
	Item Name	Threshold Value	Current Voltage	Status	
•	V_CPU	1000	624	Normal	
	VTT_CPU	1000	992	Normal	
	VCCSA_CPU	1000	880	Nomal	
	V1_0_5	1050	1040	Normal	
	V5_0	5000	4960	Nomal	

NOTE V_CPU = Voltage for processor core

VTT_CPU = Voltage for L3 shared cache, memory controller, and processor I/O power rail (Uncore) VCCSA_CPU = Voltage for CPU System Agent V1_0_5 = (VCCIO) = Voltage for processor uncore

 $V5_0 = Voltage$ for other chips

6. Click the **System Frequency** tab to view the current system frequency.

🖳 Moxa Pi	redictive Maintena	nce Diagnostic Too	L			
SystemTem	perature SystemVol	tage SystemFreque	ncy SystemResourc	ce Settings		
	Item Name	Threshold Value	Current Frequency	Status		
•	F_CPU	1000	2701	Normal]	
	F_Memory	1000	1066	Normal]	

7. Click the **System Resource** tab to view the current resource usage.

 Moxa	a Predictive Mair	ntenance Diagnostic To	bl		
 ystemT	emperature Syst	emVoltage SystemFrequ	ency SystemRe	source Settings	
	Item Name	Threshold Value	Current Frequency	Status	
•	Memory Usag	je 1000	2116	Normal	
	Disk Usage	200	639	Normal	

- 8. Click the **Settings** tab to set the polling interval and log options.
- **NOTE** If the folder you specify in the **Log Path** field does not exist, the system automatically creates the folder when new logs are recorded.

Moxa Predictive Maintenance Diagnostic Tool
SystemTemperature SystemVoltage SystemFrequency SystemResource Settings
Polling Interval : 30000 (seconds)
🛛 Enable Log
Log Path: C:\Program Files\Moxa\Moxa Predictive Maintenance Diagnostic Tool\Log SelectFile
Apply

- 9. To save the settings, click **Apply**.
- 10. Click **Yes** to confirm.

Confirm	x
It will apply the settings immediately, are you sure?	
Yes <u>N</u> o	

Moxa SynMap Package

In this chapter, we describe the software package that can be used to easily control and monitor V2406A computers.

The following topics are covered in this chapter:

- Moxa SynMap Package
 - > Overview
 - > Moxa SynMap OID List
- Installing CrystalDiskInfo
- Installing the Moxa SynMap Package
- Installing MXview
- Configuring MXview
- Loading the Moxa SynMap MIB File
- Loading the Host Resource MIB File
- Using Moxa SynMap OIDs
- Using HOST RESOURCE OIDs

Moxa SynMap Package

Overview

SynMap is Moxa's revolutionary software virtualization tool, which adapts SNMP into a fully portable remote procedure interface. SynMap allows engineers to automate remote processes using SNMP object identifiers (OIDs) rather than device-specific addresses, making a scripted SynMap procedure fully interoperable with any other SynMap device. This means that a script created for one SynMap device may be directly copied to another, immediately conferring the same functionality. This eliminates the need to rewrite and compile code for newly configured devices, significantly reducing maintenance and deployment times.

SNMP is lightweight and easy-to-configure, and has long been popular with IT professionals. SNMP also enjoys comprehensive native support in high-level languages, including .NET, Java, Python, and Ruby. For these reasons, the SynMap framework has re-purposed SNMP into a universal configuration and control interface for remote procedures, adapting it to not only monitor and control device internals like temperature, BIOS parameters, and local interfaces, but also to report on and automate tasks at the process layer, as well. Easily integrated into any existing Network Management System (NMS), SynMap devices are a flexible and cost-effective upgrade that returns obvious benefits to any IA network.

SynMap currently allows you to use SNMP for remote monitoring and control of a select set of computer processes, but its list of features is rapidly growing. Using SynMap's fully portable scripts, engineers will soon be able to:

- Access, monitor, control, and report on digital I/O at both the process and hardware layers.
- Use OIDs to monitor, configure, and give process control over serial ports and other interfaces.
- Monitor and control system attributes and process events via any NMS.
- Build automated remote procedures using SynMap OIDs called by simple shell scripts, or a preferred high-level language like Python, Perl, or VBScript—all without any need for low-level C APIs, or platform-specific libraries.
- Significantly simplify and reduce development times for custom utilities and automated executables.
- Gain scripting and automation independence from OS-dependent libraries.

All of this may be achieved using the simple, reliable, and familiar SNMP, the easily accessible standard every IT engineer knows. Discover how Moxa is expanding automation frontiers with the innovation we call SynMap.

Moxa SynMap OID List

For a complete listing of Moxa SynMap OIDs, refer to Appendix A: Moxa SynMap OID Table.

Installing CrystalDiskInfo

Complete the following steps to install CrystalDiskInfo, a disk health diagnostics tool that allows you to monitor the health of a disk.

- 1. On the software DVD, click **CrystalDiskInfo6_1_9a-en.exe** in the **\utility\mxSynMap** folder.
- 2. A Welcome screen appears. Click Next.



3. Select I accept the agreement and click Next.

🔣 Setup - CrystalDiskInfo 📃 🗖	• •
License Agreement Please read the following important information before continuing.	
Please read the following License Agreement. You must accept the terms of this agreement before continuing with the installation.	
A. CrystalDiskInfo - Simplified BSD License B. OpenCandy End User License Agreement	Â
A. CrystalDiskInfo - Simplified BSD License	
Copyright (c) 2008-2014 hiyohiyo. All rights reserved.	
Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:	*
I accept the agreement	
I do not accept the agreement	
CrystalDiskInfo 6.1.9a	
< <u>Back</u>	Cancel

4. Accept the default destination folder or click **Browse** to select one; then, click **Next**.

🔂 Setup - CrystalDiskInfo	
Select Destination Location Where should CrystalDiskInfo be installed?	
Setup will install CrystalDiskInfo into the following folder.	
To continue, click Next. If you would like to select a different folder, clic	k Browse.
C:\Program Files\CrystalDiskInfo	Browse
At least 6.3 MB of free disk space is required.	
	Cancel
	Concer

5. Accept the default Start menu folder or click **Browse** to select one; then, click **Next**.

🧱 Setup - CrystalDiskInfo	
Select Start Menu Folder Where should Setup place the program's shortcuts?	
Setup will create the program's shortcuts in the following Start I	Menu folder.
To continue, click Next. If you would like to select a different folder, click	Browse.
CrystalDiskInfo	Browse
Don't create a Start Menu folder	
CrystalDiskInfo 6,1,9a —	Cancel

6. Click Next.

👿 Setup - CrystalDiskInfo	- • •
Select Additional Tasks Which additional tasks should be performed?	
Select the additional tasks you would like Setup to perform while installing CrystalDiskInfo, then click Next.	
Additional icons:	
Create a desktop icon	
CrystalDiskInfo 6,1,9a	
< <u>B</u> ack <u>N</u> ext >	Cancel

7. Click Install.

🛐 Setup - CrystalDiskInfo	
Ready to Install Setup is now ready to begin installing CrystalDiskInfo on your computer.	R
Click Install to continue with the installation, or click Back if you want to review or change any settings.	
Destination location: C:\Program Files\CrystalDiskInfo Start Menu folder: CrystalDiskInfo Additional tasks: Additional icons: Create a desktop icon	*
٠	Ŧ
CrystalDiskInfo 6,1.9a	Cancel

8. Click Finish.



9. Add a shortcut in the **startup** folder to execute the program when system boots up.

Installing the Moxa SynMap Package

Before you install the Moxa SynMap Package, disable the Windows SNMP server. Complete the following steps:



1. From the Start menu, right-click **Computer** and select **Manage**.

2. In the Computer Management screen, select Services under Service and Applications.
| E Computer Management | | | | | | | - x |
|----------------------------------|---|---------------------|---------------|----------|---------------------------|--------------|------------|
| File Action View Help | | | | | | | |
| | | | | | | | |
| 🜆 Computer Management (Local | O Services | | | | | Actions | |
| System Tools | | | | 1 | 1 | Services | |
| Iask Scheduler Event Viewer | SNMP Service | Name | Description | Status | Startup Type | More Actions | • |
| Shared Folders | Stop the service | Remote Desktop | Remote Des | | Manual | | |
| Local Users and Groups | Restart the service | Remote Desktop S | Allows user | | Manual | SNMP Service | - |
| Performance | | Remote Desktop S | Allows the r | Charles | Manual | More Actions | • |
| Device Manager | Description: | Remote Procedur | In Windows | Starteu | Manual | | |
| Storage Disk Management | Enables Simple Network | Remote Registry | Enables rem | | Manual | | |
| Services and Applications | requests to be processed by this | RIP Listener | Listens for r | Started | Automatic | | |
| Internet Information Sei | computer. If this service is stopped, | 🍓 Routing and Rem | Offers routi | | Disabled | | |
| Services | the computer will be unable to | 🔍 RPC Endpoint Ma | Resolves RP | Started | Automatic | | |
| WMI Control | is disabled, any services that explicitly | Secondary Logon | Enables star | | Manual | | |
| Message Queuing | depend on it will fail to start. | Secure Socket Tun | Provides su | | Manual | | |
| Indexing Service | | Security Accounts | The startup | Started | Automatic
Automatic (D | | |
| | | Security Center | Supports fil | Started | Automatic (D | | |
| | | Shell Hardware De | Provides no | Started | Automatic | | |
| | | Simple TCP/IP Ser | Supports th | Started | Automatic | | |
| | | 🖏 Smart Card | Manages ac | | Manual = | | |
| | | Smart Card Remo | Allows the s | | Manual | | |
| | | SNMP Service | Enables Sim | Started | Automatic | | |
| | | SNMP Trap | Receives tra | | Manual | | |
| | | Software Protection | Enables the | Chandrad | Automatic (D | | |
| | | Superfetch | Maintains a | Started | Automatic | | |
| | | System Event Noti | Monitors sv | Started | Automatic | | |
| | | Task Scheduler | Enables a us | Started | Automatic | | |
| | | 🔍 TCP/IP NetBIOS H | Provides su | Started | Automatic | | |
| | | * | | | | | |
| < <u> </u> | Extended Standard | | | | | - | |
| | | | | | | | |
| | | | | _ | | | 4-28 DM |
| 🤭 🥭 📑 🕻 | | | | | | · 🕨 📜 🕪 | 11/6/2014 |

- 3. In the **Services** pane, double-click **SNMP Service**.
- 4. In the SNMP Service Properties window, select **Manual** from the **Startup type** drop-down list and set the **Service status** field to **Stopped**.

General Log	On Recovery Agent Traps Security Dependencies
Service name	: SNMP
Display name	SNMP Service
Description:	Enables Simple Network Management Protocol (SNMP) requests to be processed by this computer.
Path to execu C:\Windows\	table: System32\snmp.exe
Startup type:	Manual
1 31	Mariaa .
Help me confi	gure service startup options,
Help me confi Service status	gure service startup options.
Help me confi Service status	aure service startup options. :: Stopped Stop Pause Resume
Help me confi Service status Start You can spec from here.	aure service startup options.
Help me confi Service status Start You can spec from here. Start parameter	aure service startup options, Stopped Stop Pause Resume ify the start parameters that apply when you start the service ers:

5. Click **Apply** and **OK** to disable the Windows SNMP service.

To install the Moxa SynMap package, complete the following steps:

- 1. On the software DVD, double-click **mxSynMap_setup** in the **\utility\mxSynMap** folder.
- 2. A Welcome screen appears. Click Next.



3. Accept the default installation folder or click **Browse** to select one; then, click **Next**.

B Moxa SynMap	x
Select Installation Folder	
The installer will install Moxa SynMap to the following folder.	
To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse"	5
Eolder: C:\Program Files\MOXA\Moxa SynMap\ Disk Cost	
Install Moxa SynMap for yourself, or for anyone who uses this computer:	
◯ Just <u>m</u> e	
Cancel < <u>B</u> ack Next >	

4. Click Next to continue.



5. Click **OK** to continue.



6. When the installation process is complete, click **Close**.

📸 Moxa SynMap	×		
Installation Complete			
Moxa SynMap has been successfully installed.			
Click "Close" to exit.			
Please use Windows Update to check for any critical updates to the .NET Framework.			
Cancel < <u>B</u> ack	Close		

7. When prompted, click **Yes** to restart the V2406A to use the SNMP functions.

×			
You must restart your system for the configuration changes made to Moxa SynMap to take effect. Click Yes to restart now or No if you plan to manually restart later.			
No			

Installing MXview

This section describes how to use the MIB browser (mxView) to monitor or control Moxa SynMap OIDs. If you already have your own MIB browser, skip this section.

Complete the following steps to install the MXview package:

- 1. On the software DVD, double-click **MXView_Trial_V2.4.exe** in the **\utility\mxViewTrial** folder.
- 2. In the Select Setup Language screen, select a language from the drop-down list and click OK.

Select Se	tup Language
12	Select the language to use during the installation:
	English

3. Click Next.

13 Setup - MXview	
	Welcome to the MXview Setup Wizard
	This will install MXview on your computer.
	It is recommended that you dose all other applications before continuing.
	Click Next to continue, or Cancel to exit Setup.
	Next > Cancel

4. Select **I accept the agreement** and click **Next**.

j 🖞 Setup - MXview			
License Agreement Please read the following important information before continuing.			
Please read the following License Agreement. You must accept the terms of this agreement before continuing with the installation.			
MOXA END-USER LICENSE AGREEMENT FOR MXview SOFTWARE			
IMPORTANT: Please Read This Agreement Before Using The Software Indicated Above.			
This End-User License Agreement ("EULA") is a legal agreement between you, the Customer (either as an individual or a single entity), and the Owner concerning this special purpose ("System") computer device that includes certain Owner configures reading ("Software") installed on the System. Installing conving or			
I accept the agreement			
I do not accept the agreement			
< Back Next > Cancel			

5. Click Next.

Setup - MXview	_ _ X
MXview Trail Version License License	
MXview license (20 Devices)	
License	
	< <u>B</u> ack <u>N</u> ext > Cancel

6. Accept the default destination folder or click **Browse** to select one; then, click **Next**.

j [™] Setup - MXview	_ _ x	
Select Destination Location Where should MXview be installed?		
Setup will install MXview into the following folder.		
To continue, click Next. If you would like to select a different folder, click Browse.		
c:\Program Files\Moxa\MXview	Browse	
At least 77.9 MB of free disk space is required.		
< <u>B</u> ack Next >	Cancel	

7. Click **Next** to continue.

🕞 Setup - MXview	
Select Start Menu Folder Where should Setup place the program's shortcuts?	
Setup will create the program's shortcuts in the following Star	rt Menu folder.
To continue, click Next. If you would like to select a different folder, cl	ick Browse.
< Back Next :	> Cancel

8. Click Next to continue.



9. Click Install.

j Setup - MXview	
Ready to Install Setup is now ready to begin installing MXview on your computer.	
Click Install to continue with the installation, or click Back if you want to review or change any settings.	
Destination location: c:\Program Files\Moxa\MXview	*
Start menu toider: Moxa Additional tasks:	
Additional icons: Create a desktop icon	
٠	*
< <u>B</u> ack Install	Cancel

10. Wait until the installation process is complete.

J号 Setup - MXview	×
Installing Please wait while Setup installs MXview on your computer.	
Extracting files c:\Program Files\Moxa\MXview\script\upgradeDB_traffic.sql	
	Cancel

11. Set the HTTP port to 81 and click **Next**.

🔁 Setup - MXview		
Set Service Parameters Please specify the server port settings.		
The server IP Enable HTTP 127.0.0.1 HTTPS Port 443	HTTP Port 81	
	Next >	

12. Select Yes, restart the computer now and click Finish to reboot the system



13. fter the computer is restarted, the **MXview Service** shortcut appears on the computer desktop.



Configuring MXview

Complete the following steps to configure MXview:

1. Double-click the **MXview** shortcut on the desktop.



2. Click Start to continue.

MXview ver 2.4	-	
ver 2.4 Industrial Netwo Moxa Inc. All right	ork Management Softwa	are
Service Info		
HTTP Port 81 HTTPS Port 443	Disable HTTP port	Start
System Status: Stop ↓ Connect to MXview with I	Built-in Browser	
OK Launch Clier	nt	Stop & Quit

3. Wait until the **System Status** field displays **Running**; then, clear the **Connect to MXview with Built-in Browser** check box and click **Launch Client**.

MXview ver 2.4	
ver 2.4 Industrial Networ Moxa Inc. All right	ork Management Software hts reserved 2014.
Service Info	
HTTP Port 81 HTTPS Port 443	Disable HTTP port Start
System Status: Stop	
Connect to MXview with E	Built-in Browser
OK Launch Clien	nt Stop & Quit

 MXview opens Internet Explorer. Follow the on-screen instruction to configure Internet Explorer settings. Click Next to continue.



5. Select No, don't turn on and click Next.



6. Select **Use express settings** and click **Finish** to complete the configuration.

MXView - Windows Ir ○ ○ ▷ http:/	/localhost:81/index_en.htm	•	🖄 😽 🗙 🔽 Bing		× • •
🖕 Favorites 🛛 👍 💽	Suggested Sites 🔻 👩 Web Slice Gal	lery 🕶			
<i>€</i> MXview			🟠 • 🖻 • 🖃 🤅	💂 🔻 Page 🕶 Saf	iety 🕶 Tools 🕶 🔞 🕶
N	et Un Windows Internet Evplorer 8				are
	Choose yo	our settings			
V					
Inc	Pefere you get started	de vou want to:			
	Use express settings)			
	Search provider: Bing	, I provider undster			/
	Accelerators: Blog with W	ndows Live, Map with Bin	g, E-mail with Windows Live		
Copyrig	SmartScreen Filter: Enable	d			
All righ Other I	Compatibility view: use u	nas			
	Review and modify each s	etting individually.			
	Read the Internet Explorer Privacy S	tatement online	<u>B</u> ack <u>F</u> inish	Cancel	
		A .1.		077	

7. Log in using the default username (**admin**). Leave the **Password** field blank. Then, click **Login**.



8. A popup message appears prompting you to install Java Runtime Environment (JRE). Click OK.

🖉 http://localhost:81/index.htm - Windows Internet Explorer	
🚱 🕑 🗢 🖻 http://localhost81/index.htm#monitor 🔹 🗟 😚 🗙 🖸 Bing	+ م
Favorites Go Suggested Sites ▼	Safety 🔻 Tools 🕶 🕢 💌
Intranet settings are now turned off by default. Intranet settings are less secure than Internet settings. Click for options	×
Message from webpage You should refresh this page after successful install the JRE. OK	▲

9. Click the title bar and select **File Download Blocked > Download File**.

Http://localhost:81/index.htm - Windows Inte	rnet Explorer		
← ← Attp://localhost:81/index.htm	#monitor 🔹 💀	🔸 🗙 🖸 Bing	+ م
🖕 Favorites 🛛 🚖 🔁 Suggested Sites 🔻 🖉	Web Slice Gallery 🔻		
6 http://localhost:81/index.htm		🟠 💌 🔝 💌 🖃 🗮 💌 Page 🕶	Safety 🔻 Tools 👻 🔞 👻
To help protect your security, Internet Explore	er has restricted this site from showing certai File Download Blocked Intranet Settings Information Bar Help	n content. Click here for options Download File What's the Risk?	
			-
🕖 Done	Intern	et Protected Mode: Off	🖓 🔻 🔍 100% 👻 🔡

10. Select Run to download and install Java Runtime Environment.

🏉 http://localhost:81/index.htm - Windows Ii	nternet Explorer		×
🕞 🕞 🗢 🙋 http://localhost:81/index.h	tm 👻 😽 🗙 🖸 Bing		ο -
🚖 Favorites 🛛 🚔 🔽 Suggested Sites 🕶	Web Slice Gallery ▼		
Http://localhost:81/index.htm	😭 🔻 🖾 👻 🖷 🕈 Page 🕶 S	afety ▼ Tools ▼ (0 •
Intranet settings are now turned off by def	ault. Intranet settings are less secure than Internet settings. Click for options		×
	0% of jre-6u29-windows-i586-s.exe from localhost Com		~
	File Download - Security Warning		
	Do you want to run or save this file? Image: ire-6u29-windows-i586-s.exe Type: Application, 16.3MB From: localhost Image:		
🕖 Done	S Internet Protected Mode: Off	4 + 100%	•

11. Select Run to continue.



12. Click Install.

→ http://localhost81	index.htm	Q
Favorites 🛛 🚖 🔁 Suggested S	tes 🔻 🙋 Web Slice Gallery 🔻	
http://localhost:81/index.htm	🛅 🔻 🖾 🗮 🖛 🕈 Page 🕶	Safety 🔻 Tools 👻 🔞
Intranet settings are now turned of	by default Intranet settings are less secure than Internet settings. Click for ontions Java Setup - Welcome	Ŋ
	Java	
	Welcome to Java™	
	Java provides safe and secure access to the world of amazing Java content. From business solutions to helpful utilities and entertainment, Java makes your internet experience come to life.	
	Note: No personal information is gathered as part of our install process. Click here for more information on what we do collect.	
	Click Install to accept the license agreement and install Java now.	
	Change destination folder	

13. Wait until Java installation is complete.



14. Click **Close** to complete the installation process.

http://localhost:81/index.htm - Windows Internet Expl index.htm - Windows Internet Expl index.htm index.htm	orer	- • ×
COV	🕶 🗟 😽 🗙 🔽 Bing	+ م
🖕 Favorites 🛛 🚔 🔁 Suggested Sites 👻 🍘 Web Sliv	ze Gallery ▼	
Attp://localhost:81/index.htm	🟠 🔻 🔂 👻 🖃 🖶 🕶 Page 🕶	Safety 🔻 Tools 👻 🔞 👻
Intranet settings are now turned off by default Intrane	t settings are less secure than Internet settings. Click for ontions	×
Java Settip - Com	ORACLE [®]	
Java upd	ates will automatically be downloaded to provide you with the latest features and security improvements. To change this, see http://java.com/autoupdate	
	Close	
		×
🖲 Done	Internet Protected Mode: Off	🖓 🔻 🔍 100% 💌 🔡

15. Click the message bar and select **Enable Intranet Settings**.



16. Click Yes to continue.

Chttp://localhost:81/index.htm - Windows Int	ernet Explorer		- • X
↔ ♥ ♦ http://localhost:81/index.htm	n	🕶 🔯 🔩 🗙 📴 Bing	• ٩
🚖 Favorites 🛛 🚖 🔁 Suggested Sites 🔻 🉋) Web Slice Gallery 👻		
ℰ http://localhost:81/index.htm		🏠 🔻 🔝 👻 🚍 🛨 I	Page 🔻 Safety 👻 Tools 👻 🕢 💌
Intranet settings are now turned off by default	ult. Intranet settings are less secure	than Internet settings. Click for options	×
	Internet Explorer Intranet settings use a you only go to Internet ritranet settings. Are you sure you wan settings?	Less secure level than the Internet. If websites, you should not turn on to turn on intranet-level security No	
😻 Done		😻 Internet Protected Mode: Off	🖓 🔻 🔍 100% 🔻

17. Click Run.



18. Click **Next** to launch the setup wizard to configure basic settings; otherwise, click **Cancel** to launch the program immediately.

Welcome to MXview Industrial Network Management Software Setu	up Wizard
Welcome to the setup wiza	ırd.
This wizard will help you: 1. Add scan range 2. Draw Topology (with devices that support LLE 3. Set SNMP trap server)P)
	Next Cancel

The MXview screen appears.

mop//idcalloccop/index.non - windows internet Export Entry//idcallocst0L/index.htm#monitor			• <u>2</u> •	X 🖸 ðing 🖉 🗸
😭 Favorites 🛛 🏤 😇 Suggested Sites 💌 🔊 Web Slice Gallery 💌				
			<u>ه</u> -	• 🔯 • 🗅 🖶 • Page • Safety • Tools • 🚱 •
Project View Device Link Information Event Tools MIB	Help			<u>_</u>
MXview Industrial Network Mana	agement Software			MOXA
Q - Search Devices	Root			x * n . L . 1. 📶 🚟
Device List				^ _
-,,¥ Rođ	1			. •
Device Properties	A V Recent Events Act All Ibarled Last Fifty Frents			
		Device Max	Description	Time laws
	2 MXNew Server 0.0.0.0	System Information	Mixiew server started	2013-06-05 17:51:54
a privati a	1 (Kee Boor 3888	Bytem Monutos	Skowarow doted	80.694 8.82
No Message	50504799	Managed Devices (Current / Max) : 0 / 20	S Lastintas	e I Rostanted Mada Off
Post No.			Local Instance	ALLOWED

Loading the Moxa SynMap MIB File

Follow these steps to load the Moxa SynMap MIB file.

1. Double-click the **MxView Service** icon on the desktop.



2. Click Start.

MXview ver 2.4	
ver 2.4 Industrial Network Management Software Moxa Inc. All rights reserved 2014.	\bigvee
Service Info	
HTTP Port 81 Disable HTTP port St HTTPS Port 443	art
System Status: Stop	
OK Launch Client	Stop & Quit

3. Wait until the **System Status** field changes to **Running**; then, click **Launch Client** to continue.

ver 2.4 Indu Mox	STRIAL Network All rig	vork Management Softw ghts reserved 2014.	are
Service Info]		
HTTP Port	81	Disable HTTP port	Start
HTTPS Port	443		Stop
System Status:	Running	-	
Connect to	MXview with	Built-in Browser	

4. Click Cancel.

Velcome to MXview Industrial Network Management Software Setup Wizard Welcome to the setup wizard. This wizard will help you: 1. Add scan range 2. Draw Topology (with devices that support LLDP) 3. Set SNMP trap server Next Cancel	
Welcome to MXview Industrial Network Management Software Setup Wizard	
Welcome to the setup wizard.	
This wizard will help you:	
1. Add scan range	
2. Draw Topology (with devices that support LLDP)	
3. Set SNMP trap server	
Next	Cancel

5. Select **MIB** > **MIB** Browser.

🔗 http://localhost:81/index.htm - Windows Internet Explorer		- 0 - X -
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6 http://localhost81/index.htm	🏠 🖛 🔂 🐨 🚍 🖶 🖛 Pi	age 🕶 Safety 🕶 Tools 🕶 🔞 🕶
Project View Device Link Information Event Tools MIB Help		*
Trap Import Manager		
Q Search Devices		
Device List		
Root		
-		
No Message 11:37:27 PM Managed Devices (Current / Max) : 0 / 20		
	💊 Local intranet Protected Mode: Off	√
		▲ 🕨 🗊 🚯 11:37 PM

6. In the MIB Browser window, select **File** > **Load MIB**.

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E http://localhost:81/index.htm			🏠 • 🗟 • 🖂 🖶 •	Page 🕶 Safety 🕶 Tools 🕶 🔞 🕶
Project View Device Link Informa	tion Event Tools MIB Help			*
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700 000	File Lond MIR			
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Device List	Language	OID		
A Root	Exit	Get Get Next Get Subtree Walk	Set	
		Name/OID Value		
A. T.				
No Message 11:37:42				
		0 3 m	Close	
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Done		Q	.ocal intranet Protected Mode: Off	va ▼ 100% ▼
	- 🖅 📷 🗠			• 5/23/2013

7. Go to c:\usr\share\snmp\mibs\ and select MOXA-SYS-MIB.txt; then, click Open.



8. In the MIB Browser screen, verify that the MOXA-SYS-MIB folder displays in the File list.

Image: State Stat		
WIB Browser File RFC1213-MIB MOXA-SYS-MIB OID Get Get Next Get Get Next Value		
RFC1213-MIB MOXA-SYS-MIB	Agent IP 127.0.0.1 SNMP v1	
	OID	
	Get Get Next Get Subtree Walk	Set
	P 127.0.0.1 SNMP v1 Get Get Next Get Subtree Walk Set ND Value	
	pent IP 127.0.0.1 SNMP v1 D Get Get Next Get Subtree Walk Set me/OID Value	
		K Set
	127.0.0.1 SNMP v1 Get Get Next Get Subtree OID Value	
		I I X
	Agent IP 127.0.0.1 SNMP v1 OID Cet Cet Next Get Subtree Walk Name/OID Value	
		SNMP v1
		Close

Loading the Host Resource MIB File

Complete the following steps to load the Host Resource MIB file.

1. Double-click the **MxView Service** shortcut on the desktop.



2. Click Start.

MXview ver 2.4	-
Ver 2.4 Industrial Network Management Softw Moxa Inc. All rights reserved 2014.	are
Service Info HTTP Port 81 Disable HTTP port HTTPS Port 443	Start
System Status: Stop Connect to MXview with Built-in Browser	
OK Launch Client	Stop & Quit

3. Wait until the System Status field becomes Running; then, click Launch Client.

MXview ver 2.4	and the second second	100
ver 2.4	Al Network Management Softw c. All rights reserved 2014.	vare
Service Info		
HTTP Port 81	Disable HTTP port	Start
HTTPS Port 44	3	Stop
System Status: Run	nning	
Connect to MXvi	iew with Built-in Browser	
OK Lau	unch Client	Stop & Quit

4. Click Cancel.



5. Select **MIB** > **MIB** Browser.

C http://localhost81/index.htm - Windows Internet Explorer		- 0 - X -
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http://localhost81/index.htm	🟠 🔻 🖾 🐨 🚍 🖶 🖛	Page 🕶 Safety 🕶 Tools 🕶 🔞 🕶
Project View Device Link Information Event Tools MIB Help		*
MIB Browser		
Trap Import Manager		
Q- Search Devices		
Device List		
Root		
No Message 11:37:27 PM Managed Devices (Current / Max) : 0 / 20		
	🗣 Local intranet Protected Mode: Off	√a ▼ € 100% ▼
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6. In the MIB Browser window, select **File > Load MIB**.

http://localhost:81/index.htm - Windows	Internet Explorer			_ 0 ×
🕒 🕞 🗢 🙋 http://localhost:81/index.	htm		🕶 🗟 🔩 🗙 🔽 Bing	+ م
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6 http://localhost:81/index.htm			🏠 = 🖾 = 🚔 =	Page 🕶 Safety 🕶 Tools 🕶 🔞 🕶
Project View Device Link Informati	ion Event Tools MIB Help			*
MX view Indust	File	AXC -		
Q- Search Devices	Load MIB	Agent IP 127.0.0.1 SNMP v1		
Device List	Unload MIB			
	Language			
	Exit	Get Get Next Get Subtree Walk	Set	
		Name/OID Value		
No Message 11:37:42				
		🔲 🖳 🛍	Close	
L L				
				Ψ.
Done		•	Local intranet Protected Mode: Off	4 ← € 100% ▼
	I 🗐 🌦 🔊			▲ 🖿 🗊 🗣 11:37 PM 5/23/2013

7. In the c:\usr\share\snmp\mibs\ folder, select HOST-RESOURCES-MIB.txt.

	sk(e) / as / share / shirp / hills		coronnas			<i>_</i>
Organize 👻 🦳 Ope	n 🔻 Print New folder					2
🔆 Favorites	Name	Date modified	Туре	Size		
🧮 Desktop	AGENTX-MIB	10/9/2012 3:28 PM	Text Document		18 KB	
鷆 Downloads	BRIDGE-MIB	10/9/2012 3:28 PM	Text Document		50 KB	
📃 Recent Places	DISMAN-EVENT-MIB	10/9/2012 3:28 PM	Text Document		67 KB	
	DISMAN-EXPRESSION-MIB	10/9/2012 3:28 PM	Text Document		42 KB	
詞 Libraries	DISMAN-NSLOOKUP-MIB	10/9/2012 3:28 PM	Text Document		19 KB	
Documents	DISMAN-PING-MIB	10/9/2012 3:28 PM	Text Document		56 KB	
🁌 Music	DISMAN-SCHEDULE-MIB	10/9/2012 3:28 PM	Text Document		25 KB	
Pictures	DISMAN-SCRIPT-MIB	10/9/2012 3:28 PM	Text Document		63 KB	
📑 Videos	DISMAN-TRACEROUTE-MIB	10/9/2012 3:28 PM	Text Document		68 KB	
	EtherLike-MIB	10/9/2012 3:28 PM	Text Document		83 KB	
🖳 Computer	HCNUM-TC	10/9/2012 3:28 PM	Text Document		5 KB	
	HOST-RESOURCES-MIB	10/9/2012 3:28 PM	Text Document		52 KB	
📬 Network	HOST-RESOURCES-TYPES	10/9/2012 3:28 PM	Text Document		11 KB	
	IANA-ADDRESS-FAMILY-NUMBERS-MIB	10/9/2012 3:28 PM	Text Document		5 KB	
	IANAifType-MIB	10/9/2012 3:28 PM	Text Document		32 KB	
	IANA-LANGUAGE-MIB	10/9/2012 3:28 PM	Text Document		5 KB	
	IANA-RTPROTO-MIB	10/9/2012 3:28 PM	Text Document		4 KB	
	•	III		_		Þ

8. In the **MIB Browser** screen, verify that the **HOST-RESOURCES-MIB** folder appears in the **File** list.

MIB Browser		
File		
RFC1213-MIB HOVA_SV8_MID HOVA_SV8_MID HOVA_SV8_MID HOVA_SV8_MID HOVA_SV8_MID HOVA_SV8_MID Hova hova(25) hova(25)	Agent IP 127.0.0.1 SNMP v1 OID	Set
name Holtrage (2) hubevice (3) hubevice (3) hubevice (3) h	Name/OID Value	
		Close

Using Moxa SynMap OIDs

Complete the following steps to use Moxa SynMap OIDs:

1. Check the UART type. Navigate to

MOXA-SYS-MIB\VALUES\moxa\embeddedComputer\moxaSystem\peripheralMgmt and double-click **uartConfigTable**.

2. Click **Get Subtree** and verify that your MxView settings are correct.

MIB Browser	
File	
RFC1213-MIB MOXA-SYS-MIB VALUES moxa (8691) moxa (8691) moxaSystem (1) moxaSystem (1) moxaSystem (1)	Agent IP 127.0.0.1 SNMP v1 OID 1.3.6.1.4.1.8691.17.1.6.3.2.1.2.4
HOST-RESOURCES-MIB	Name/OID Value uartIndex.1 1 uartIndex.2 2 uartIndex.3 3 uartIndex.4 4 uartType.1 0 uartType.2 0 uartType.3 0
III III name uartConfigTable (2) A OID 1.3.6.1.4.1.8691.17.1.6.3.2 III SEQUENCE OF SEQUENCE [ua rindex INTEGER (2147483648). IIII IIII syntax 2147483647), uartType INTEG IIIII	
ERJ access not-accessible VALUE uartConfigTable OBJEC T-TYPE (Syntax: SEQUENCE OF SEQU ENCE [uartIndex INTEGER (-21 474836482147483647), uartTy +	Close

Using HOST RESOURCE OIDs

Complete the following steps to use HOST RESOURCE OIDs.

- Check disk usage. Navigate to HOST-RESOURCES-MIB\VALUES\host\hrStorage\hrStorageTable\ and double-click hrStorageEntry.
- 2. Click Get Subtree and verify that your MxView settings are correct.

MIB Browser		
File		
RFC1213-MIB MXA-SYS-MIB HOST-RESOURCES-MIB HOST-RESOURCES-MIB Host (25) Host (25)	Agent IP 127.0.0.1 SNMP v1 OID 1.3.6.1.2.1.25.2.3.1.7.3 Get Get Next Get Subtree Walk Set	
 hrSystem (1) hrStorage (2) hrStorageTople (3) hrStorageTople (3) hrStorageTople (3) hrStorageTople (2) hrStorageTople (2) hrStorageTople (2) hrStorageSer (3) hrStorageSize (5) hrStorageSize (5) hrStorageLiocationUnits (4) hrStorageLiocationFailures (7) hrStwRunPerf (5) hrSWInstalled (6) 	Name/OID Value hrStorageIndex.1 1 hrStorageIndex.2 2 hrStorageIndex.3 3 hrStorageIndex.3 1.3.6.1.2.1.25.2.1.4 hrStorageType.1 1.3.6.1.2.1.25.2.1.3 hrStorageType.2 1.3.6.1.2.1.25.2.1.3 hrStorageType.3 1.3.6.1.2.1.25.2.1.3 hrStorageDescr.1 C:\Label: Serial Number hrStorageDescr.3 hrStorageDescr.3 Physical Memory hrStorageAllocationUnits.1 4096 hrStorageSize.3 65536 hrStorageSize.3 65236 hrStorageSize.1 3883519 hrStorageSize.3 64220 hrStorageSize.3 64229 hrStorageLize.1 3502447	r 6607fe31
	hrStorageUsed.3 22116	
name hrStorageEntry (1)	hrStorageAllocationFailures.1 0	
OID 1.3.6.1.2.1.25.2.3.1	hrStorageAllocationFailures.2 0	
SEQUENCE [InStorageIndex INTEGER (-214 7433949. 214748347), hrStorageType OBJ ECT IDENTIFIER, InStorageDesor OCTET S TRING (812E (0. 226)), hrStorageAllocationU nits INTEGER (-2147438347), hrStorageAllocationU hrStorageSize INTEGER (-2147439347), hrStorageUsed INTEGER (-214743947), syntax \$3848.2147483047), hrStorageAllocationFa ilures INTEGER (0. 4294907295)]	hrStorageAllocationFailures.3 0	
		Close

- 3. Retrieve the value of hrStorageAllocationUnits.1 (for example, 4096).
- 4. Retrieve the value of **hrStorageSize.1** (for example, 14384127).
- 5. Calculate the total disk size using the following formula: total disk size = hrStorageAllocationUnits x hrStorageSize In this example, the total disk size is 4096 x 14384127= 58917384192 = 54.9 GB
- Check memory usage. Go to the HOST-RESOURCES-MIB\VALUES\host\hrStorage\ folder and double-click hrMemorySize.

7. Click Get.

MIB Browser	an	
File		
RFC1213-MIB MOXA-SYS-MIB HOST-RESOURCES-MIB VALUES Host (25) Host (25) Host (25) Host (25) Host (25) Host (25)	Agent IP 127.0.0.1 SNM OID 1.3.6.1.2.1.25.2.2.0 Get Get Get Next Get Subtree N	Valk Set
hrStorage (2) hrMemorySize (2) hrMemorySize (2) hrMemorySize (2) hrStorageTable (3) hrStwageTable (3)	Name/OID Value hrMemorySize 4110700	
name hr/MemorySize (2) OID 1.3.6.1.2.1.26.2.2 syntax INTEGER (02147483647) access read-only VALUE hr/MemorySize OBJECT- TYPE (Syntax: INTEGER (02147483 647) Units: KBytes Access: read-only Status: oursent		
Description: The amount of ph ysical read-write main memory, typically RAM, contain	•	Close

8. You can also check the physical memory size using Windows Task Manager.

plications Processes	Services	Performance	Networking	Users
CPU Usage	PU Usage r	listory		
1%		- K		
Memory	hysical Mer	nory Usage His	tory	
611 MB		Sustam		
Total	2728	Handles		13454
Cached	162	Threads		704
Available	2116	Processes		59
	1977	Up Time	0:0	0:03:34
Free		Commit (M	B) 72	1 / 2726
Free Kernel Memory (MB)				
Free Kernel Memory (MB) Paged	97			

 Check disk usage. Go to the HOST-RESOURCES-MIB\VALUES\host\hrDevice\hrProcessorTable\ folder and double-click hrProcessorEntry. 10. Click Get Subtree.

MIB Browser	60 mg	
File		
RFC1213-MIB MOXA-SYS-MIB HOST-RESOURCES-MIB HOST-RESOURCES-MIB ⊡	Agent IP 127.0.0.1 OID 1.3.6.1.2.1.25.3.3.1.2.4 Get Get Next Get Subtree	SNMP v1
	Name/OID hrProcessorFrwID.3 hrProcessorFrwID.4 hrProcessorFrwID.4	Value 0.0 0.0
hrProcessorTable (3) hrProcessorTable (3) hrProcessorFintry (1) hrProcessorFintry (1) hrProcessorFinult hrProcessorLoad hrProcessorLoad	hrProcessorLoad.4	9
name hrProcessorEntry (1)		
OLD 1.3.6.1.2.1.25.3.3.1 Syntax SEQUENCE [hrProcessorFnvID OBJECT IDENTIFIER, hrProcess orLoad INTEGER (-2147483648 2147483647)]		
access not-accessible VALUE hrProcessorEntry OBJEC T-TYPE (Syntax: SEQUENCE [hrProcess		
orFrwID OBJECT IDENTIFIER, h rProcessorLoad INTEGER (-214 74836482147483647)]	•	Close

11. You can also check the CPU loading of each CPU core using Windows Task Manager.



This chapter provides examples to illustrate how to use the V2406A computer for a variety of applications.

The following topics are covered in this chapter:

- □ SerialInterface
- Digital Input/Output
- Watchdog

SerialInterface

- Copy the following files from the product software DVD. mxsp.dll: \examples\V2406A_W7E_V1.0_example\lib\mxsp\x86\ sysinfo.dll: \examples\V2406A_W7E_V1.0_example\lib\mxsp\x86\ sysinfo.sys: \examples\V2406A_W7E_V1.0_example\lib\mxsp\x86\ mxGeneralIo.dll: \examples\V2406A_W7E_V1.0_example\lib\MxGeneralIo\x86\ SerialInterface.exe: \examples\V2406A_W7E_V1.0_example\Release\
- 2. Execute SerialInterface.exe.



3. Type 2 to set the serial interface. Follow the on-screen instructions.



4. Type **1** to display the current serial interface settings.

C:\Sample\Ser	ialInterface.exe		J
Serial Inter (Ø) (1) (2) 1	face Test Program Exit Program Display Serial Interface Set Serial Interface	Ē	
COM1 = RS485 COM2 = RS232 COM3 = RS232 COM4 = RS232	-2W		
		+	

Digital Input/Output

- Copy the following files from the product software DVD. mxdgio.dll: \examples\V2406A_W7E_V1.0_example\lib\mxdgio\x86\ mxGeneralIo.dll: \examples\V2406A_W7E_V1.0_example\lib\MxGeneralIo\x86\ DIO.exe: \examples\V2406A_W7E_V1.0_example\Release\
- 2. Execute **DIO.exe**.



3. Type 4 to display the current DI and DO values.



4. Type ${\bf 3}$ to set the DOUT port number. Follow the on-screen instructions.



5. Type **4** to check if the port value was set correctly.



Watchdog

- 1. From the product software DVD, copy the following files:
 - mxdev.dll: \examples\V2406A_W7E_V1.0_example\lib\mxwdg\x86\
 - mxGeneralIo.dll: \examples\V2406A_W7E_V1.0_example\lib\MxGeneralIo\x86\
 - Watchdog.exe: \examples\V2406A_W7E_V1.0_example\Release\
- 2. To prevent the system from rebooting, press [Enter] at least once every 10 seconds; otherwise, the system will reboot automatically.
- 3. To stop the watchdog, press ${\boldsymbol{q}}$ to exit the program

Administrator: C:\Windows\system32\cmd.exe	- D X
Administrator: C:Windows/system32/cmd.exe D:://watchdog Press "ENTER" in 10 seconds , 'q' to exit Press "ENTER" in 10 seconds	
	-

System Recovery

This chapter describes the system recovery process that you can perform if the system is not functioning properly.

The following topics are covered in this chapter:

- Overview
- Setting Up the Recovery Environment
- Setting Up a Factory Default Recovery Image
 - > Step 1: Prepare the USB drive
 - > Step 2: Setting the BIOS to Boot via USB
 - > Step 3: How to Perform a System Recovery
 - > Step 4: Reset the BIOS to its Original State
- Creating a Custom System Image

Overview

This section describes how to prepare your computer for recovery in the event the system becomes unstable. You can perform a system recovery using one of the following system images:

- A clean factory default image.
- A user-generated image created from a fully configured, fully set up system.

Before you perform a system recovery, set up the system environment.

Setting Up the Recovery Environment

To set up the recovery environment on a V2406A computer, prepare a USB drive that has at least 4 GB of memory and a copy of the recovery suite.

The following lists the major steps in the recovery procedure:

- 1. Copy the recovery programs and system image file on to the USB drive. Set up the drive as a live-drive system with an ISO image of the boot environment.
- 2. Reboot the system and configure the BIOS to boot the recovery system from the USB port.
- 3. An image of the current software system will be created on the USB drive. The recovery environment will use this image when restoring the system.
- 4. Reboot the system again and the BIOS is returned to its original state.

Setting Up a Factory Default Recovery Image

Step 1: Preparing the USB drive

- Load the software DVD that came with your V2406A computer and execute tuxboot-windows-23.exe in the \recovery\ folder.
- 2. Select **Pre Downloaded** and click the ellipsis (...) button to browse the file system and locate the boot environment's ISO image.



3. Navigate to the **\recovery** folder on the software DVD and select the boot environment's ISO image.

Favorites	Name	Date modified	Туре	Size
Desktop	🔒 os_image	12/24/2014 12:03	File folder	
🗼 Downloads	🕑 clonezilla-live-2.0.1-15-i686-pae-moxa-2.0.6	7/18/2014 9:43 AM	Disc Image File	107,072 KB
📃 Recent Places	uxboot-windows-23	5/26/2011 8:33 PM	Application	5,729 KB
Jibraries Documents Music Pictures ✓ Videos				

4. Select **USB Drive** from the **Type** drop-down list and select the drive letter that corresponds to the USB drive from the **Drive** drop-down list. Click **OK** to copy the boot environment and bootloader to your USB drive.

Tuxboot				- 🗆 🔀
On-Line Distribution	clonezilla_live_stable	Current		Update
Clonezilla				
Homepage: <u>http://clon</u> Description: CloneZilla are based on Debian Install Notes: CloneZill Download Path: <u>Clone</u>	<u>ezilla.org/</u> live is a distribution used for o a live is booted and run in live zilla Live Stable at SourceForc	lisk backup and imagin mode; no installation e	ig. The stable branch is required to use it.	n of Clonezilla live
Pre Downloaded	ISO D:\2011-06-	15-13\clonezilla-live-1	.2.8-46-i686.iso	
Show <u>All</u> Drives (Use	with Care) 📃 Save ISO fi	le	MD5 Check	
Type: USB Drive	✓ Dri <u>v</u> e: F:\		С	Cancel

5. Click Exit.

Tuxboot	_ 🗆 🔀
1. Downloading Files (Done)	
2. Extracting and Copying Files (Done)	
3. Installing Bootloader (Done)	
4. Installation Complete, Reboot (Current)	
After rebooting, select the USB boot option in the BIOS boot menu. Reboot now?	
Reboot Now	Exit

From the desktop, copy the directory containing the base OS from the software DVD on to the USB drive.
 That is, copy #:\<SoftwareDVD>\recovery\os_image to the partition image directory,
 F:\home\partimag\, on the USB drive.

However, if you want to recover from your own system image, back up a system image first. For more information, refer to the **Creating a Custom System Image** section.

After Step 1 procedure is complete, proceed to the next section, Step 2: Setting the BIOS to Boot via USB.

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Organize 🔻 🛛 😭 Oper	n Share with 🔻	New folder				0
🔶 Favorites	Name	*	Date	modified	Туре	Siz
Nesktop	🔒 os_image		6/15/	/2014 5:58 PM	File folder	
Downloads Recent Places						
↓ Libraries ▶ Documents ▶ Music ■ Pictures ■ Videos						
I♥ Computer 실 Local Disk (C:) → NEW VOLUME (D						
🙀 Network 👻	•		ш			Þ
os_image Dat File folder	te modified: 6/15/2014	5:58 PM				

Step 2: Setting the BIOS to Boot via USB

This step shows you how to reset the BIOS so the system can boot directly from the USB port. You must perform this action before you can continue to configure the system recovery environment.

 Reboot the system, and, during the POST process, press F2 until you hear a long beep. Click SCU to enter the BIOS setup menu.



- 2. Use the left and right arrow keys to navigate to the **Boot** menu.
- 3. Use the up and down arrow keys to navigate to the Legacy field; then, press [Enter].

Main Advanced Sect	urity Power <mark>Boot</mark> Exit		R	5¥. J. (
			1	_
Boot Type PXE Boot to LAN Add Boot Options USB Boot EFI Device First Boot Delay Time KLegacy	 Quai Bo Qisable Qast> Qnabled Qisable Qisable Qisable Qisable Qisable 	ot Type> d> > d> d>	Legacy Boot Order Settings	
F1 Help	11 Select Item	F5/F6 Change Values	F9 Setup Defaults	

4. Use the up and down arrow keys to navigate to the **Boot Type Order** link; then, press [Enter].

		InsydeH20 Setup Utility	Rev. 3.7
	Boot		
Boot Device Priority	/		Change Boot Type Order
Normal Boot Menu	<norma l=""></norma>		
▶Boot Type Order ▶Hard Disk Drive ▶USB			
Help	fU Select Item	F5/F6 Change Values	F9 Setup Defaults
ESC EXIT	🐡 зетест пёпи	Enter select 🕨 Subhenu	FIU Save and Exit

Use the up and down arrow keys to navigate to the USB link; then, use the plus or minus (+/-) key to move USB to the top of boot priority list.

	Boot	InsydeH20 Setup Utility		Rev. 3.7
Boot Type Order			+: Move Up, -: Move Down	
USB Hard Disk Drive CD/DVD-ROM Drive Others				
F1 Help Esc Exit	î↓ Select Item ⇔ Select Menu	F5/F6 Change Values Enter Select ► SubHenu	F9 Setup Defaults F10 Save and Exit	

6. Press **F10** and [Enter] to save and exit the BIOS configuration interface. This sets the system to reboot from the hard drive.

Step 3: Performing a System Recovery

This step describes how to perform a system recovery. We include this as step 3 of the installation so administrators can first perform a test run before deploying the system to the field.

To begin the system recovery process, configure the BIOS settings as described in the previous section **Step 2: Setting the BIOS to Boot via USB**. Then, connect the USB recovery drive to any USB ports on the V2406A and then reboot the computer. If you have successfully prepared the USB and BIOS, the computer will boot into the Clonezilla boot loader from the USB port.

1. Select clonezilla live restore disk to boot into the system recovery environment.

Moxa System Save & Restore Utility (V1.0.0)	
clonezilla live restore disk	
clonezilla live save disk Memtest & FreeDOS	>

2. Wait until the boot process is finished.
5.153522] sd 0:0:0:0: [sda] Attached SCSI disk 5.163726] sd 0:0:1:0: [sdb] Attached SCSI disk 5.287941] sd 0:0:0:0: Attached scsi generic sg0 type 0 5.310750] sd 0:0:1:0: Attached scsi generic sg1 type 0 5.334915] sr 1:0:0:0: Attached scsi generic sg2 type 5 n: Loading essential drivers ... [5.690577] Atheros(R) L2 Ethernet Driver – version 2.2.3 Begin: Loading essential drivers ... [5.690577] Atheros(R) L2 Ethernet Driver – version 2.2.3 [5.692430] Copyright (c) 2007 Atheros Corporation. [5.776770] Broadcom NetXtreme II 5771x 10Gigabit Ethernet Driver bnx2x 1.62.00-6 (2011/01/30) 5.914014] Btrfs loaded 5.955475] device-mapper: uevent: version 1.0.3 5.961407] device-mapper: ioctl: 4.19.1-ioctl (2011-01-07) initialised: dm-devel@redhat.com done. Begin: Running /scripts/init-premount ... done. Begin: Mounting root file system ... [6.178946] Uniform Multi-Platform E-IDE driver [6.186189] ide_generic: please use "probe_mask=0x3f" module parameter for probing all legacy ISA IDE ports 6.913744] FAT: utf8 is not a recommended IO charset for FAT filesystems, filesystem will be cas sensitive! 7.047997] aufs: module is from the staging directory, the quality is unknown, you have been war ned. 7.072516] aufs 2.1-standalone.tree-38-rcN-20110228 Begin: Running /scripts/live-premount ... done. [7.213433] loop: module loaded [7.509770] squashfs: version 4.0 (2009/01/31) Phillip Lougher Begin: Running /scripts/live-realpremount ... done. Begin: Mounting "/live/image/live/filesystem.squashfs" on "//filesystem.squashfs" via "/dev/loop0" . done. lone. aone. Begin: Running /scripts/live-bottom ... Begin: Configuring fstab ... done. Begin: Preconfiguring networking ... done. Begin: Loading preseed file ... done. Begin: Running /scripts/init-bottom ... done. INIT: version 2.88 booting Using makefile-style concurrent boot in runlevel S. live-config: hostname user-setup sudo locales tzdata keyboard-configuration sysvinit sysv-rc initram fs-tools util-linux login openssh-server_

 The screen displays warning messages to remind you that you are about to overwrite your entire operating system with a new drive image, and ask you if you want to continue. When prompted, enter Y (case insensitive) to start the system recovery process.

You can press any key or [Ctrl + C] to cancel the recovery process and exit Clonezilla.



The screen displays another warning message to remind you that you are about to overwrite your hard drive and erase all data on the partition listed (sda1, in the following figure). If you want to continue, enter Y (case insensitive).

- 5. Wait until the process is finished.



6. To complete the recovery process, select (0) Power off to shut down the computer. However, if the Power Switch remains inserted in the front panel of the computer and is left in the ON position, the system will not shut down and will immediately initiate a soft reboot. To avoid this, use the switch to cut off power to the computer immediately following the shutdown command, or simply the power switch from the front panel and use the console to shut down the computer by pressing 0.



7. After the computer is powered down, remove the USB drive and store it in a secure place.

Step 4: Resetting the BIOS

Reset the boot priority to the factory default settings to allow the system to boot from the main system storage drive. This is done for two reasons:

- The first reason is for security, since the computer will not be able to be rebooted from unauthorized USB drives.
- The second reason is because the computer is able to boot up from a non-bootable USB drive. Currently, if the V2406A is set to boot from a USB drive, the V2406A's boot process stops anytime you insert a non-bootable USB data drive into the machine. The V2406A cannot detect USB data drives and boot-capable OS drives.

Complete the following steps to reset the boot priority setting:

 Reboot the system, and, during the POST process, press F2 until you hear a long beep. Click SCU to enter the BIOS setup menu.

Continue	Boot Manager	Boot From File
	*	
SCU		

2. Use the left and right arrow keys to navigate to the **Boot** menu.

3. Use the up and down arrows to navigate to the Legacy link; then, press [Enter].

		InsydeH20 Setup Utility	Rev. 3.7
Main Advanced Secur	ity Power <mark>Boot</mark> Exit		
			Legacy Boot Order Settings
Boot Type	<dual bo<="" td=""><td>ot Type></td><td></td></dual>	ot Type>	
PXE Boot to LAN	<disable< th=""><th>d></th><th></th></disable<>	d>	
Add Boot Options	<last></last>		
USB Boot	<enabled< th=""><th>></th><th></th></enabled<>	>	
EFI Device First	<disable< th=""><th>d></th><th></th></disable<>	d>	
Boot Delay Time	<0 Secon	d>	
▶Legacy			
Help	11 Select Item	F5/F6 Change Values	EQ. Satur Dafaulte
For Exit	C Select Menu		F10 Save and Exit
ESU EXIL	Serectment	enter serect 🖗 Subhenu	FIU Save and EXIL

4. Use the up and down arrow keys to navigate to the **Boot Type Order** link; then, press **Enter**.

		InsydeH20 Setup Utility	Rev. 3.7
	Boot		
Boot Device Priori	ty		Change Boot Type Order
Normal Boot Menu	<norm< th=""><th>al></th><th></th></norm<>	al>	
▶Boot Type Order ▶Hard Disk Drive ▶USB			
F1 Help Esc Exit	14 Select Item ↔ Select Menu	F5/F6 Change Values Enter Select ► SubHenu	F9 Setup Defaults F10 Save and Exit

 Use the up and down arrows to highlight Hard Disk Drive and use the plus or minus (+/-) key to move Hard Disk Drive to the top of the boot priority list.



6. Press **F10** and [Enter] to save and exit the BIOS configuration interface. This sets the system to reboot, and the system should now boot from the hard drive.

For more information about initializing user settings, refer to the **System Initialization** chapter.

Creating a Custom System Image

In this section, we describe how to create a custom system image so that all of your applications can be kept and recovered. Using this procedure, you will save to the USB drive a copy of the entire system **as it is currently configured**, and to be used as a **full system recovery image** if the system crashes. **All files under F:\home\partimag** will be overwritten.

Before proceeding, make sure you have already completed **Step 1: Prepare the USB drive** and **Step 2: Setting the BIOS to Boot via USB**, and then continue with the following steps to create a custom system image.

1. Once the system has launched and the V2406A has booted the recovery environment from the USB drive, navigate to **clonezilla live save disk**, and then select it by pressing Enter. This will take you into the recovery image creation environment, allowing you to copy your full system setup to the USB drive.

Moxa System Save & Restore Utility (V1.0.0)	
clonezilla live restore disk clonezilla live save disk Mewtest & FreeDOS	,

2. The V2406A boots into the image creation environment. Wait until the boot process is complete.

5.141941] sd 0:0:1:0: [sdb] Attached SCSI disk 5.2572771 sd 0:0:0:0: Attached scsi generic sg0 type 0 5.25866911 sd 0:0:1:0: Attached scsi generic sg1 type 0 5.2806681 sr 1:0:0:0: Attached scsi generic sg2 type 5 n: Loading essential drivers ... [5.772551] Atheros(R) L2 Ethernet Driver - version 2.2.3 Begin: Loading essential drivers ... [5.772551] Atheros(R) L2 Ethernet Driver – version 2.2.3 [5.774561] Copyright (c) 2007 Atheros Corporation. [5.863196] Broadcom NetXtreme II 5771x 10Gigabit Ethernet Driver bnx2x 1.62.00-6 (2011/01/30) 6.0059321 Btrfs loaded 6.054951 device-mapper: uevent: version 1.0.3 6.0597371 device-mapper: ioctl: 4.19.1-ioctl (2011-01-07) initialised: dm-devel@redhat.com done. Begin: Running /scripts/init-premount ... done. Begin: Mounting root file system ... [6.289382] Uniform Multi-Platform E-IDE driver [6.301889] ide_generic: please use "probe_mask=0x3f" module parameter for probing all legacy ISA IDE ports 6.801141] NTFS driver 2.1.30 [Flags: R/W MODULE]. 6.914295] NTFS volume version 3.1. begin: Running /scripts/live-premount ... done. [7.331989] FAT: utf8 is not a recommended IO charset for FAT filesystems, filesystem will be cas sensitive! 7.4533691 aufs: module is from the staging directory, the quality is unknown, you have been war ned. 7.4790981 aufs 2.1-standalone.tree-38-rcN-20110228 7.610228] loop: module loaded [7.905144] squashfs: version 4.0 (2009/01/31) Phillip Lougher Begin: Running /scripts/live-realpremount ... done. Begin: Mounting "/live/image/live/filesystem.squashfs" on "//filesystem.squashfs" via "/dev/loop0" . done. done. Begin: Running /scripts/live-bottom ... Begin: Configuring fstab ... done. Begin: Preconfiguring retworking ... done. Begin: Loading preseed file ... done. Begin: Running /scripts/init-bottom ... done. INIT: version 2.88 booting Using makefile-style concurrent boot in runlevel S.

3. Once the image creation environment is booted up, a warning message displays asking whether you want to continue. Note that if you create the recovery image, then any files copied in the /home/partimag directory will be deleted. If you want to save the files in the USB partition image directory, you must exit the recovery environment and copy the files to another disk. Press Y (case insensitive) to continue with the image creation.

Setting the TERM as linux
*>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
Clonezilla image dir: /home/partimag
*>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
Shutting down the Logical Volume Manager
No volume groups found
No volume groups found
Finished Shutting down the Logical Volume Manager
Selected device [sda] found!
The selected devices: sda
\$
Activating the partition info in /proc done!
Selected device [sda] found!
The selected devices: sda
Searching for data partition(s)
Excluding busy partition or disk
Unmouted partitions (including extended or swap): sda1
Collecting info done!
Searching for swap partition(s)
Excluding busy partition or disk
Unmouted partitions (including extended or swap): sda1
Collecting info done!
The data partition to be saved: sda1
The swap partition to be saved:
Activating the partition info in /proc done!
Selected device [sda1] found!
The selected devices: sda1
Getting /dev/sda1 info
x0x3x9x9x9x9x9x9x9x9x9x9x9x9x9x9x9x9x9x9
The following step is to save the hard disk/partition(s) on this machine as an image:

Machine: VirtualBox
sda (2103MB_VBOX_HARDDISKata-VBOX_HARDDISK_VB1c64a0a3-c9+7523d)
sda1 (2065MB_nt†s(In_VBOX_HARDDISK_)_ata-VBOX_HARDDISK_VB1c64a0a3-c9†7523d)

-> "/home/partimag/xpe_savedisk".
Are you sure you want to continue? ? (y/n) y

4. The recovery environment starts to copy the entire hard drive to your USB drive. This may take several minutes. Wait until the process is complete.



WARNING

Do NOT remove the USB drive from the computer during the data copy process.

'sdb1: read failed after 0 of 2048 at 0: Input/output error No volume groups found No volume groups found Finished Shutting down the Logical Volume Manager Checking the integrity of partition table in the disk /dev/sda... Reading the partition table for /dev/sda...RETVAL=0 ***** ****** lone! aving the MBR data for sda... +0 records out 12 bytes (512 B) copied, 0.00347646 s, 147 kB/s Starting saving /dev/sda1 as /home/partimag/xpe_savedisk/sda1.XXX... /dev/sda1 filesystem: ntfs. Checking NTFS integrity in /dev/sda1... done! Checking the disk space... Use ntfsclone with gzip to save the image. Image file will be split with size limit 1000000 MB. If this action fails or hangs, check: * Is the disk full ? VTFS volume version: 3.1 Cluster size : 2048 bytes Current volume size: 2064510976 bytes (2065 MB) Current device size: 2064513024 bytes (2065 MB) Scanning volume ... 100.00 percent completed Accounting clusters ... Space in use : 1770 MB (85.7%) Saving NTFS to image ... _ 0.64 percent completed

Choose whether to power down the computer (press 0), reboot (press 1), access the console terminal (to access a console TTY, press 2), or re-initiate the entire procedure (press 3).



WARNING

Do NOT remove the USB drive from the computer until you have rebooted or powered down the system.

```
Restoring the first 446 bytes of MBR data, i.e. executable code area, for sda... done!
იოთიოთიოთიოთიოთიოთიოთითითითითითითითი.
Now resize the partition for sda1
∩tfsresize –f /dev/sda1
ntfsresize v2.0.0 (libntfs 10:0:0)
ntfsresize v2.0.0 (IIDNTS 10.0.0)
Device name : /dev/sda1
NTFS volume version: 3.1
Cluster size : 2048 bytes
Current volume size: 2064511488 bytes (2065 MB)
Current device size: 2064513024 bytes (2065 MB)
New volume size : 2064511488 bytes (2065 MB)
Nothing to do: NTFS volume size is already OK.
Nothing to do: NTFS volume size is already OK.
The grub directory is NOT found. Maybe it does not exist (so other boot manager exists) or the file 
system is not supported in the kernel. Skip running grub–install.
Found NTFS boot partition among the restored partition(s): /dev/sda1
Head and sector no. of /dev/sda from EDD: 64, 63.
The start sector of NTFS partition /dev/sda1: 63
Adjust filesystem geometry for the NTFS partition: /dev/sda1
Running: partclone.ntfsfixboot –w –h 64 –t 63 –s 63 /dev/sda1
atfsfivboot version 0.9
ntfsfixboot version 0.9
done!
*****
 ****
 *****
This program is not started by Clonezilla server, so skip notifying it the job is done.
 inished!
Now syncing – flush filesystem buffers...
 ocs-live-restore" is finished.
 low you can choose to:
 0) Poweroff
 1) Reboot
     Enter command line prompt
     Start over
```

6. Power down the system and remove the USB drive.

The recovery environment setup is complete and you have created an OS image in the **USB** Folder\home\partimag\os_image folder. Label the USB drive and store it in a safe place.

						0	×
🕞 🕞 🗕 📜 « NEW \	/OLU	UME (D:) ▶ home ▶ partimag ▶	▼ 4	Search partimag			9
Organize 🔻 🛛 😭 Op	en	Share with 🔻 New folder					0
🔆 Favorites	-	Name		Date modified	Туре		Siz
🧮 Desktop		퉬 os_image		6/15/2014 5:58 PM	File folder		
🐞 Downloads 🖳 Recent Places	l						
➢ Libraries i Documents ♪ Music i Pictures Videos	=						
I특 Computer 실 Local Disk (C:) — NEW VOLUME (D							
📬 Network	-	•					•
os_image D File folder)ate	modified: 6/15/2014 5:58 PM					

A

Moxa SynMap OID Table

This appendix provides information on the Moxa SynMap OID table.

The following topics are covered in this appendix:

- Moxa SynMap OID Table
- HOST RESOURCE OID Table

Moxa SynMap OID Table

The following table shows the full list of Moxa SynMap OIDs.

Item Name	OID	MAX-Access	Description	Support
productName	1.3.6.1.4.1.8691.17.1.1.1.0	read-only	Show the product name	\checkmark
productDesc	1.3.6.1.4.1.8691.17.1.1.2.0	read-only	Show the product short	
			description	
productVersion	1.3.6.1.4.1.8691.17.1.1.3.0	read-only	Show the product	\checkmark
			version	
productBuildDate	1.3.6.1.4.1.8691.17.1.1.4.0	read-only	Show the product's last	\checkmark
			build date; the format is	
			YYMMDDHH	
biosVersion	1.3.6.1.4.1.8691.17.1.4.1	read-only	Show the BIOS version	
biosSaveSetting	1.3.6.1.4.1.8691.17.1.4.2	read-write	Write: 1 saves the bios	
			setting	
			Read: 0 means the	
			setting has been applied	
biosSettingStatus	1.3.6.1.4.1.8691.17.1.4.3	read-only	Show a comparison of	
			"bios CMOS setting" and	
			"bios new setting"	
bootDeviceStatus	1.3.6.1.4.1.8691.17.1.4.4.1	read-only	Show the currently	
			active boot devices	
firstBootDevice	1.3.6.1.4.1.8691.17.1.4.4.2	read-write	Read: Show the current	
			first boot device	
			Write: Set the boot	
			device	
pwrOnAfterPwrFail	1.3.6.1.4.1.8691.17.1.4.8.1	read-write	Set the computer to	
			power on after a power	
			failure	
pwrLanWakeUp	1.3.6.1.4.1.8691.17.1.4.8.3	read-write	Enable/Disable wake on	
			LAN functionality	
tempSensorsIndex	1.3.6.1.4.1.8691.17.1.	read-only	Reference index for each	\checkmark
	5.1.1.1.1		observed device	
tempSensorsDevice	1.3.6.1.4.1.8691.17.1.5.1.1.	read-only	The name of the	\checkmark
	1.2		temperature sensor	
			being read	
tempSensorsValue	1.3.6.1.4.1.8691.17.1.5.1.1.	read-only	The temperature of this	\checkmark
	1.3		sensor in mC	
voltSensorsIndex	1.3.6.1.4.1.8691.17.1.5.1.2.	read-only	Reference index for each	\checkmark
	1.1		observed device	
voltSensorsDevice	1.3.6.1.4.1.8691.17.1.5.1.2.	read-only	The name of the device	\checkmark
	1.2		we are reading.	
voltSensorsValue	1.3.6.1.4.1.8691.17.1.5.1.2.	read-only	The voltage in mV	\checkmark
	1.3			
ioDiNumber	1.3.6.1.4.1.8691.17.1.6.1.2.	read-only	Number of digital input	\checkmark
	1.0		pins in the current	
			system	
diIndex	1.3.6.1.4.1.8691.17.1.6.1.2.	read-only	Reference index of each	\checkmark
	2.1.1		digital input pin	
diPort	1.3.6.1.4.1.8691.17.1.6.1.2.	read-only	Port number of the	\checkmark
	2.1.2		digital input pin	
diValue	1.3.6.1.4.1.8691.17.1.6.1.2.	read-only	Digital input status:	\checkmark
	2.1.3		0 is low, 1 is high	

Item Name	OID	MAX-Access	Description	Support
diTrapEnable	1.3.6.1.4.1.8691.17.1.6.1.1.	read-write	Agent will send a trap	
	2.1.4		message when the	
			digital input pin status	
			has changed and this	
			object is enabled	
ioDoNumber	1.3.6.1.4.1.8691.17.1.6.1.2.	read-only	Number of digital output	\checkmark
	3.0		pins in the current	
			system	
doIndex	1.3.6.1.4.1.8691.17.1.6.1.1.	read-only	Reference index of each	\checkmark
	4.1.1		digital output pin	
doPort	1.3.6.1.4.1.8691.17.1.6.1.2.	read-only	Port number of the	\checkmark
	4.1.2		digital output pin	
doValue	1.3.6.1.4.1.8691.17.1.6.1.2.	read-write	Digital output status:	\checkmark
	4.1.3		0 is low, 1 is high	
uartNumber	1.3.6.1.4.1.8691.17.1.6.3.1	read-only	Number of internal	\checkmark
			UARTs in the current	
			system	
uartIndex	1.3.6.1.4.1.8691.17.1.6.3.2.	read-only	Reference index of each	\checkmark
	1.1		UART port	
uartType	1.3.6.1.4.1.8691.17.1.6.3.2.	read-write	UART mode:	\checkmark
	1.2		0 is RS232,	
			1 is RS485 2-wire,	
			2 is RS422,	
			3 is RS485 4-wire	
usbNumber	1.3.6.1.4.1.8691.17.1.6.3.1.	read-only	Number of ports,	
	0		regardless of their	
			current state, in the usb	
			general port table	
usbDeviceIndex	1.3.6.1.4.1.8691.17.1.6.4.1.	read-only	The index is identical to	
	3.1.1		usbPortIndex for the	
			corresponding USB port	
usbDeviceVendorID	1.3.6.1.4.1.8691.17.1.6.4.1.	read-only	The USB device port	
	3.1.2		vendor HEX-formatted	
			string, as it is provided	
			to the USB host by the	
			USB device	
usbDeviceProductID	1.3.6.1.4.1.8691.17.1.6.4.1.	read-only	The product ID	
	3.1.3		HEX-formatted string as	
			it is provided to the USB	
			host by the USB device	
usbDeviceActiveClas	1.3.6.1.4.1.8691.17.1.6.4.1.	read-only	Returns the USB Device	
S	3.1.4		Class type of the active	
			configuration	
usbPlugTrapEnable	1.3.6.1.4.1.8691.17.1.6.4.1.	read-write	Agent will send a trap	
	4		message when a USB	
			device is inserted or	
			removed, and this object	
			is enabled	
moxaSystemTrapIP	1.3.6.1.4.1.8691.17.1.9.1.0	read-write	Set Trap IP address	\checkmark
moxaSystemTrapCo	1.3.6.1.4.1.8691.17.1.9.2.0	read-write	Trap community	\checkmark
mmunity				

HOST RESOURCE OID Table

The following table shows Host Resource OIDs.

Item Name	OID	MAX-Access	Description	Support
hrProcessorTable	1.3.6.1.2.1.25.3.3	read-only	Show CPU usage	\checkmark
hrStorageTable	1.3.6.1.2.1.25.2.3	read-only	Show disk and memory	\checkmark
			usage	