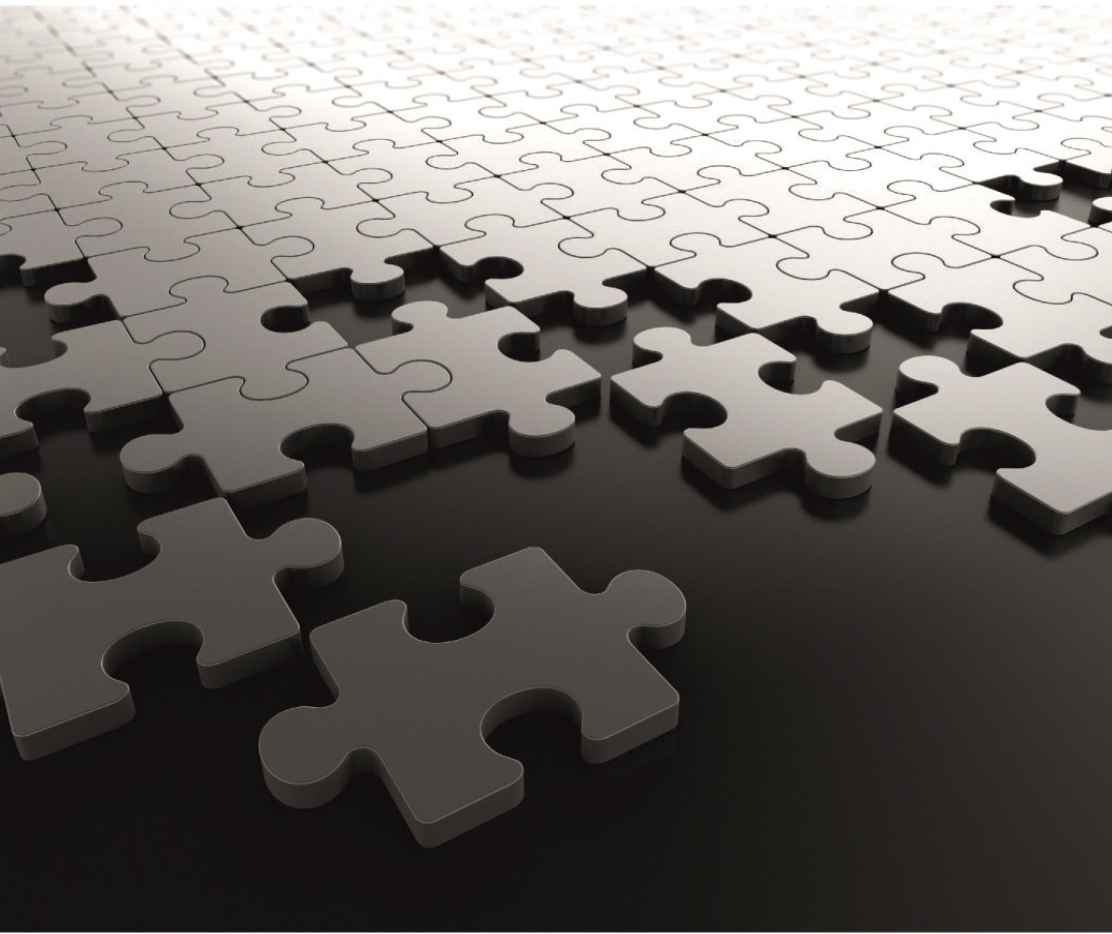


SATATYA PARAM NVR XCTS

Quick Start



Matrix SATATYA PARAM NVR XCTS

Video Surveillance Solution

Quick Start



Documentation Disclaimer

Matrix Comsec reserves the right to change, at any time, without prior notice, the product design, specifications, components, as engineering and manufacturing may warrant.

This is a general documentation for all models of the product. The product may not support some of the features and facilities described in the documentation.

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Warranty

For product registration and warranty related details visit us at:

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Introduction

Thank you for choosing the Matrix SATATYA PARAM NVR XCTS, the video surveillance recorder.

This Quick Start is meant to help you get familiar with SATATYA PARAM NVR XCTS, install the device and configure its basic parameters.

This is a common document for all the configurations of SATATYA PARAM NVR XCTS series. The terms Satatya Param NVR XCTS, Matrix SATATYA PARAM NVR XCTS, XCTS, NVR XCTS and Network video recorder are used interchangeably.

If you have any concerns regarding the installation procedure, consult the Matrix Customer Care.

To view or download the documents related to this product, scan the QR Code printed on the Product Label/Packaging Label.

You may also view or download the documents from <https://www.matrixvideosurveillance.com/product-manuals.html>

For product registration and warranty related details, please visit <https://www.matrixcomsec.com/product-registration-form.html>

Notices

The following symbols have been used for notices to draw your attention to important points.



Important: to indicate something that requires your special attention or to remind you of something you might need to do when you are using the system.



Caution: to indicate an action or condition that is likely to result in malfunction or damage to the system or your property.



Warning: to indicate a hazard or an action that will cause damage to the system and/or cause bodily harm to the user.



Tip: to indicate a helpful hint giving you an alternative way to operate the system or carry out a procedure, or use a feature more efficiently.

Know Your NVR XCTS

In today's era, the technological need of organizations are no longer similar. The business solutions required by a Small Medium Enterprise are different from that of a Large Enterprise. So, most of the modern organizations want to invest in an economical business solution that accomplishes their specific technological needs.

Keeping in mind, the aspect of enterprise functionalities as well as the technological need of each and every organization, we offer the Matrix SATATYA PARAM NVR XCTS Series.

Matrix offers NVR XCTS Series as Integrated Hardware and Software Solution. It consists of SATATYA SAMAS Application ported on the NVR XCTS Server. This perfect combination of a software application with a hardware platform, fulfills the business need of almost all the modern organizations.

Built on a high performance microprocessor, video compression technology along with dual redundant Power Supply, the NVR XCTS provides uninterrupted performance while recording, monitoring and playback, best image quality with minimum storage space requirement. The solution supports Raid 0, 1, 5 and 10 functionality.

The Matrix SATATYA SAMAS is a sophisticated video management solution designed for large enterprises with multi-site surveillance requirements. This suite of applications provides comprehensive management and support for large number of cameras and other video surveillance devices, with centralized monitoring and control. The solution offers centralized management of Management Server, Recording Server, Admin Client, Media Client (Smart Client), Media Player (Backup Player), Multi Display, SATATYA devices and Cameras in a distributed network.

NVR XCTS uses Microsoft Windows10 IoT Enterprise Version as an Operating System. Hence this Server cannot be used as a general purpose application other than as NVR XCTS. The Operating System must only be used in combination with NVR XCTS. The Terms and Conditions for the use of Microsoft Windows Operating System are regulated by Microsoft's End User License Agreement. Matrix assumes that these Terms and Condition are acceptable to the End User.

Variants of NVR XCTS

The NVR XCTS Series has the following variants:

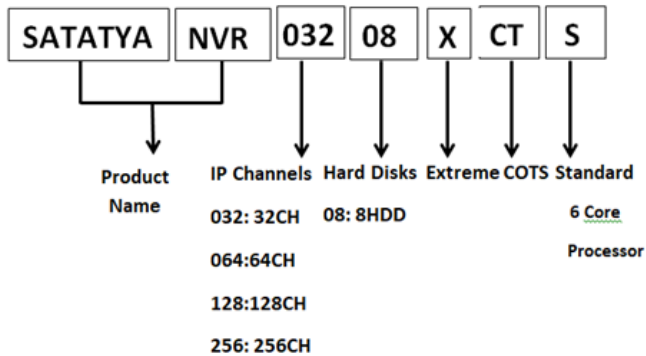
NVR03208XCTS: NVR XCTS having configuration of maximum 32 IP channels and 8 hard disks.

NVR06408XCTS: NVR XCTS having configuration of maximum 64 IP channels and 8 hard disks.

NVR12808XCTS: NVR XCTS having configuration of maximum 128 IP channels and 8 hard disks.

NVR25608XCTS*¹: NVR XCTS having configuration of maximum 256 IP channels and 8 hard disks.

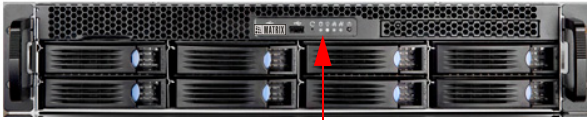
Naming Convention



1. Check for availability.

NVR XCTS Panel

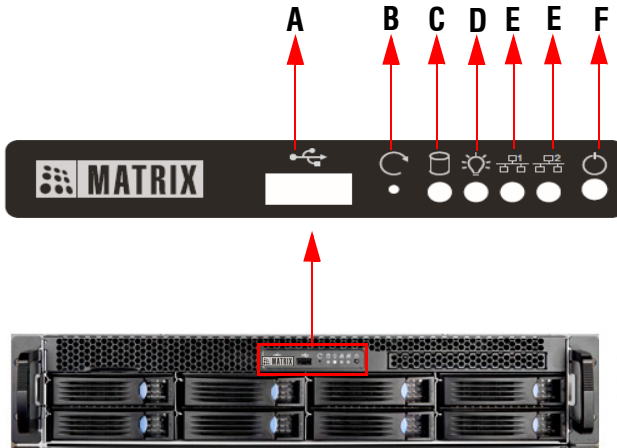
Front View



8 Hot-Swap HDD Trays

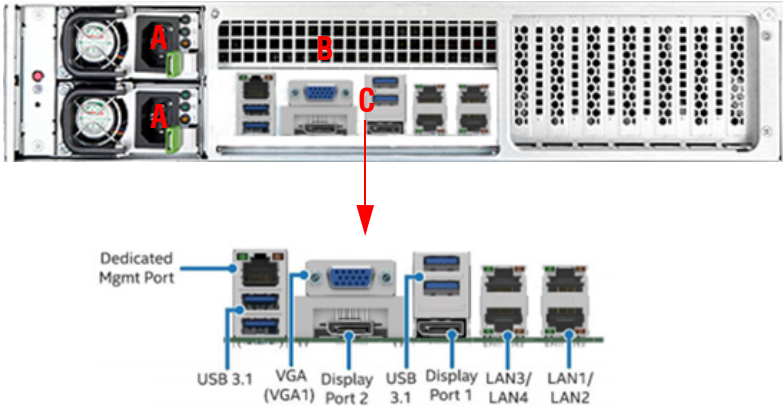
Front Controls and Indicators

Front Controls and Indicators



Label	Interface	Description
A	USB	USB 2.0, used for Scheduled and Manual Backup. To connect USB Mouse. To connect Dongle.
B	Reset	Push button for system reset
C	HDD Activity LED	Yellow (When HDD is busy)
D	Power LED	Blue (When power on)
E	LAN1, LAN2 LED	Green (When Internet is busy)
F	Power Switch	Push button for system power on

Rear view



Label	Interface	Description
A	Power Supply	To connect the 220V AC Power Cable
	Power Supply	To connect the 220V AC Power Cable
B	40 mm Exhaust Fan area	
	Dedicated Management Port	To manage the Server
C	USB 3.1 - 1	To connect USB Mouse/Keyboard. To connect Dongle /Hard Disk for Eternal Storage
	USB 3.1 - 2	To connect USB Mouse/Keyboard. To connect Dongle /Hard Disk for Eternal Storage
C	VGA	To connect a VGA compatible Monitor
	Display Port 1	To connect a Monitor
	Display Port 2	To connect a Monitor
	LAN 1, LAN 2, LAN 3, LAN 4	To connect a standalone personal computer, or a LAN Switch, or to connect to the Internet over a DSL Modem or Router.

General Specifications

Parameters	Description
Power supply	220V AC
Operating Temperature	0°C to +40°C
Humidity	5% to 95% RH Non-Condensing

The User Interface

The SATATYA SAMAS Application provided various user interfaces which servers different user requirements:

SATATYA SAMAS Admin Client

The SATATYA Admin Client enables you to configure — Users, Servers, Access Control, Features etc offered by the Matrix SATATYA SAMAS.

To know more, refer to the ***SATATYA SAMAS Administrator Guide***.

SATATYA SAMAS Smart Client

The SATATYA Smart Client enables access to live and stored video images of NVR XCTS from a remote location through the Web. Using the Smart Client you can access, search, browse, display and transfer stored video to a remotely connected workstation. You can configure the NVR XCTS and camera settings, receive notification of events such as alarm, motion detection and video loss.

To know more, refer to the ***SATATYA SAMAS Smart Client Manual***.

SATATYA SAMAS Vision

SATATYA Vision is a mobile application which supports live view of the channels and allows the user to view the live recordings any time, anywhere, on your smart devices. SATATYA Vision supports Android and iOS-based devices.

To know more, refer to the FAQs *for Android and iOS* respectively.

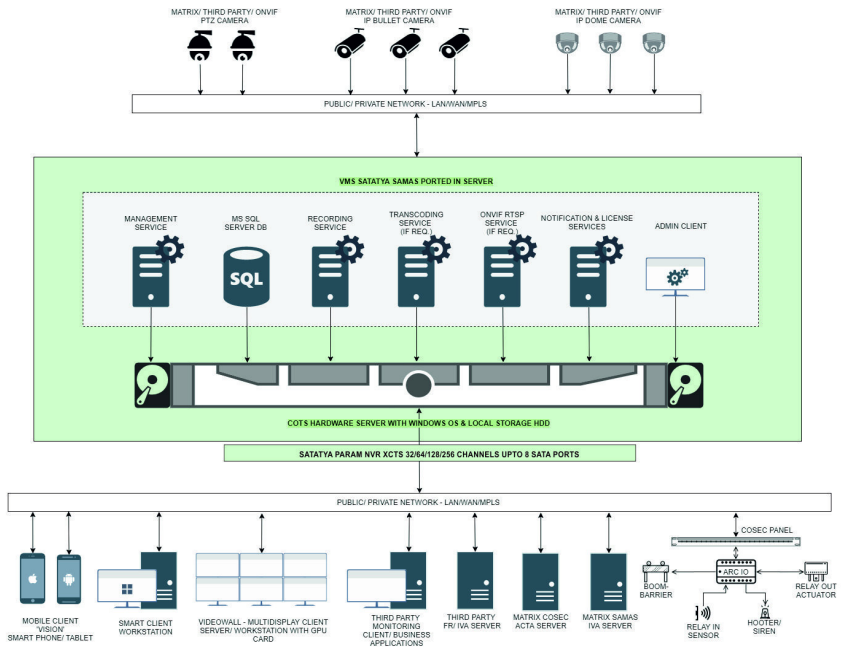
Technical Specifications of NVR XCTS

HARDWARE	
Processor - CPU	Intel® Xeon® E-2246G 3.6GHz
Memory	16GB DDR4(32/64/128 Channels), 32GB DDR4 (32/64/128/256 Channels)
OS Drive	1 x 250 GB SSD M.2
SATA 3.0 Channels	8
Storage Capacity	144 TB (8 Hard Disks of 18 TB)
GPU	Intel® UHD Graphics P630
Video Display	2x Display Ports; 1xVGA
Chassis	2U, 17" Rack Mount Server
Hot Swap HDD Bays	8x SATA 3.5" or 2.5"
RAID	Intel® VRoC (Virtual RAID on CPU)
RAID Support	RAID 0/1/5/10
USB	1 (F) x USB 2.0 + 4 (R) x USB 3.1
NETWORK MANAGEMENT & SECURITY	
Network	4 X RJ45 (1 Gbps)
Throughput	512 mbps up-link and 512 mbps down-link
Server Management	Dedicated 1 Gbps RJ45 Port
Security	TPM 2.0 Support, SSL Communication
ELECTRICAL	
Input Voltage	220V AC at 50/60 Hz
Power Supply System	1 + 1 550W Hot Swap Platinum Redundant Power Supply
MECHANICAL	
Dimension (D x W x H)	660 x 430 x 88 (mm) 26" x 16.9" x 3.5"
Material	SGCC
Nett Weight	13.9 kg (without Hard Disk drives)
ENVIRONMENTAL	
Operating Temperature	0° to 40° C
Relative Humidity	5 - 90% RH
SOFTWARE	
OS	Microsoft Windows 10 IoT Enterprise 2019 LTSC
Software	VMS SAMAS - upto 256 Channels, 10 User Default
VIDEO SURVEILLANCE MANAGEMENT	
IP Camera Channels	32/64/128/256 IP Channels
Resolution Support	12MP, 8MP, 5MP, 3MP, 2MP, 720P, D1, CIF
Compression	H.265, H.264, MJPEG
Onvif Profile Support	Onvif S, (G supported V5R1 and onwards)

IP Camera Supports	Matrix Brand, Third Party - Onvif Profile S, (G supported V5R1 and onwards) Supported
Active Directory Support	Yes
User Roles and Rights	Yes
DISPLAY	
Split (Through LAN/HDMI)	1x1, 2x2, 3x3, 4x4, 5x5, 6x6, 8x8, 1+3, 1+5, 1+7 and Sequential Views and Windows Sequence
Local Decoding	1x 4K/ 4x 1080P/ 16 x D1 @H.264
Digital Zoom on Live	Yes
Snapshot	Yes
Multiple Display View on Single NVR XCTS	Yes, Max 3 Display in Extended Mode
OSD	Channel Number and Name, Status, Video Loss, Recording and Disabled Channel (As per camera support)
RECORDING	
Pre-Record	Up to 30 Sec
Post-Record	10-300 Sec
Snapshot Format	JPEG
Recording Format	Native
Recording Types	Scheduled, Manual, Alarm and Motion Detection
Adaptive Recording	Automatically Reduces the Number of Frames Captured Per Second Where There is No Motion, Thereby Saving Storage Space
PLAYBACK & BACKUP	
Synchronous Playback	64 channels @ 1080P (via Ethernet)
Search Mode	Date, Camera, Recording Type
Playback Modes	Fast Forward, Fast Reverse at Different Speed Control,
Backup & Archive	3 Levels, Video Grooming Technology
Maximum User	100
Remote Operation	Monitor, PTZ Control, Playback, System Setting, File Download, Log Information,
EVENTS & ACTIONS	
EVENTS	Video Surveillance Events, System Events, User Events, Audit Trails Events
ACTION	Recording on Selected Channel, Upload Images on FTP/Email server, Email Notification with Snapshot, Trigger IVA, Recall PTZ Preset Position, Turn On/Off Alarm Outputs, Buzzer Notification, SMS Notification, Calling from Mobile App, Share files data, Trigger Aux Output
SYSTEM SETUP	

LED Indication	System Power; Ethernet Connection 1 & 2, SATA Connectivity, OS Drive Connectivity
Power On & Reset Switch	Yes

Application of NVR XCTS



Installing NVR XCTS

Package Contents

- SATATYA PARAM NVR XCTS unit
- 2 qty 220V-15A Power Cable
- 2 qty Sliding Rails for Rack installation
- 4 qty Rack Installation Screws (plus flat head)
- 6 qty Inner Rack Installation Screws (plus circular head)
- 8 qty Outer Rack Installation Screws (plus circular head)
- 32 qty HDD Installation Screws (plus circular head)

Things You Will Need

- A Power Hand Drill
- A Wire Stripper
- Insulation Tape
- A Screwdriver set
- Cameras (IP Cameras, PTZ cameras).
- Monitors with the appropriate cables to connect.
- At least one SATA Hard Disk (upto 18TB), if you want to record on a hard disk in the SATATYA PARAM NVR XCTS. You can install eight hard disks.
- A USB Mouse or Keyboard (Wired or Wireless) to operate the SATATYA PARAM NVR XCTS, if required.
- A personal computer or a LAN computer to access the Admin Client or the Smart Client.
- An Ethernet cable to connect to a computer/LAN/WAN (over a DSL Modem or Router).
- A rack to mount the SATATYA PARAM NVR XCTS in a rack.

Safety Instructions

- The Matrix device is intended for indoor use and can only be Rack Mounted. Equipment must thus be installed into a controlled, dry, clean and secure environment where temperature and humidity are within product specifications.
- Examine site conditions prior to installation. Notify the person concerned if unsuitable conditions are encountered. Do not start installation until site conditions are acceptable.

- Use the power cord which is supplied along with the equipment. The product should be operated with appropriate power voltage supply as mentioned in the specification sheet. Ensure adequate earthing at the installation site.
- Do not touch the product with wet hands. Equipment must be installed by a trained professional.
- Prevent metallic, foreign or liquid substances from getting inside the product. This includes insecticide or flammable cleaning spray.
- Make sure in the Rack there is minimum 1-2 inches air gap between two systems (bottom and top). Vent holes are provided in the system for air ventilation, make sure there is no obstruction to block it.
- Make sure the ambient temperature for the systems is below operating temperature of the system (40 degree centigrade) day and night.
- Ensure appropriate mains filtering and UPS are used in areas where the power source is susceptible. Damage through power source fluctuations, spikes, etc. is not covered by warranty.
- Do not cut off the power or move the unit when hard drives are operating. Doing so may cause damage and loss of data.
- Make sure you have complete the wiring and installation of all the devices you want to connect to NVR XCTS.

NVR XCTS will be provided with the following Services and Clients:

- Management Server
- License Server
- Recording Server
- Notification Server
- Admin Client
- Smart Client

The following Devices, Services and Clients are supported by NVR XCTS and can be installed/connected as per your requirement:

- SAMAS IVA Server (needs to be installed in a separate Server)
- Multi Monitor Client (needs to be installed in a separate Server)
- NVRs, DVRs and IP Cameras
- COSEC CENTRA Server
- COSEC PANEL200
- ARC IO 800 Controller
- Smart Client (needs to be installed in a separate Server)
- Media Player (needs to be installed in a separate Server)
- Third Party / Business Application for Integration

Further the Installation and Connecting instructions have been divided into the following sections:

- Hardware Installations, refer [“Hardware Installation of NVR XCTS”](#)
- Connecting, refer [“Connecting NVR XCTS”](#)
- Software Installations, refer [“Software Installation of NVR XCTS”](#)

Recommendations

- Make sure you configure recording of maximum 64 channels in each HDD. If multiple HDD's are installed make sure you distribute the recordings. For example, if you have installed 8 HDD's and 128 camera's, then in each HDD recording of 16 camera's can be configured.
- Make sure the throughput is 512 mbps down-link and 512 mbps up-link.
- Make sure both the Power Supplies are connected. If one Power Supply is connected it will result in degraded performance.

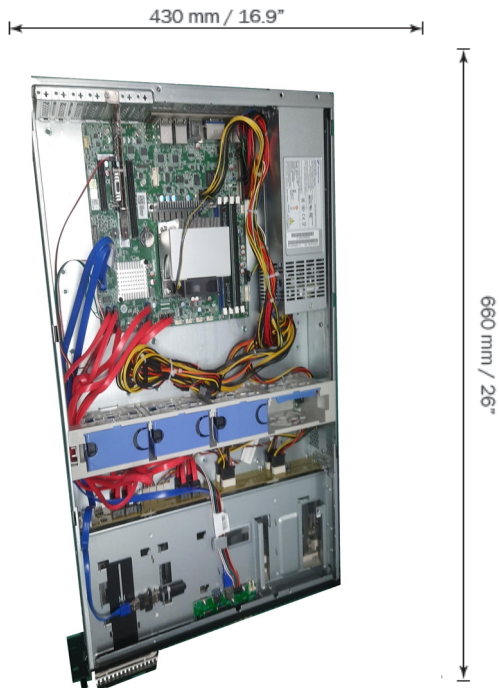
Hardware Installation of NVR XCTS

- Unpack NVR XCTS and check the package contents.

Do not discard the packaging material. If any of the items is missing or damaged, please contact the source from where you purchased the product.

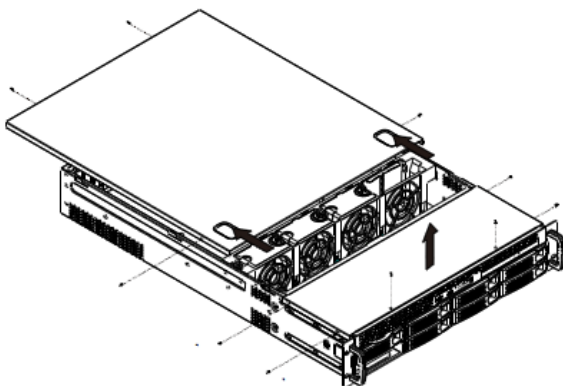
- You are recommended to first install the hard disk(s) and make the required cable connections. Refer to [“Opening the Top Cover”](#) and [“Installing the Hard Disk”](#).
- For Rack mounting, refer to [“Rack Mounting”](#) instructions.

NVR XCTS Dimensions



Opening the Top Cover

- Always wear an electrostatic discharge preventive wrist strap or belt and use a grounding mat.
- Make sure the power supply is disconnected. Unplug the power cable, if you have connected it to NVR XCTS.
- Release two screws on the back side and two screws on both left and right side.
- Make sure the thumb finger touches downward, and then push back the rear back cover.
- Release four screws on both left and right side.
- Release two screws on the top side.



- Place your hand on the front top cover and pull it out.

Installing the Hard Disk

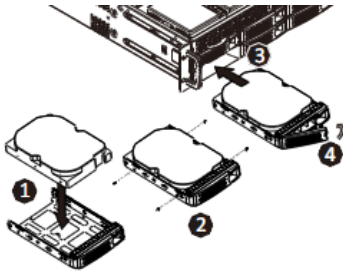
NVR XCTS series supports maximum eight Hard disks. The storage capacity of each hard disk is upto 18 Terabytes. By default, no Hard disk is provided with the system. You can install them as per your requirement.

You are recommended to install video surveillance SATA Hard disks of any standard brand.



Any electrostatic energy coming in contact with the hard disk or the internal parts of the NVR can cause permanent damage to them. Before you begin the installation of the hard disk, make sure your workstation is static-free. Always wear an electrostatic discharge preventive wrist strap or belt and use a grounding mat.

- Insert the hard drive on the tray.
- Use four screws to fix the HDD.
- Slide the tray into the HDD bay.



- Push the lever to latch HDD tray.



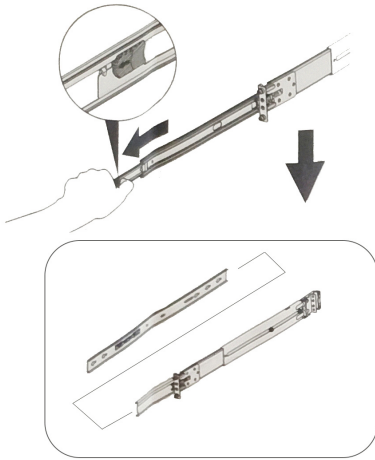
Maximum torque to be applied for tightening the screws is 3 kgf.cm. Applying more than specified torque will cause a damage to the HDD and the emboss.

Rack Mounting

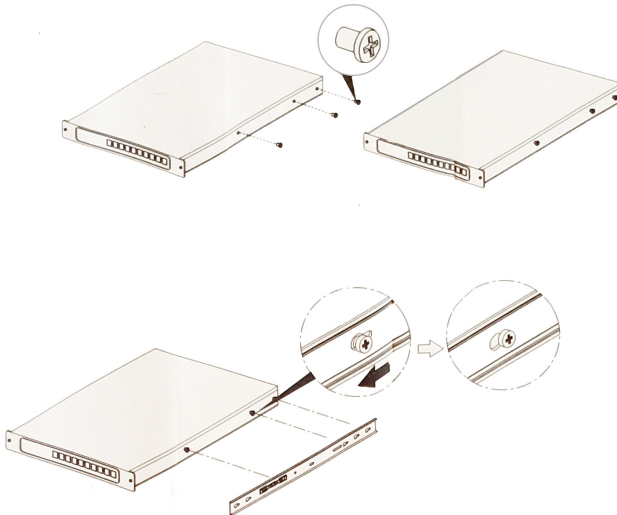
There are two rails — inner rail and outer rail. You can install the rails into the racks using the round holes or square holes.

Follow the instructions given below:

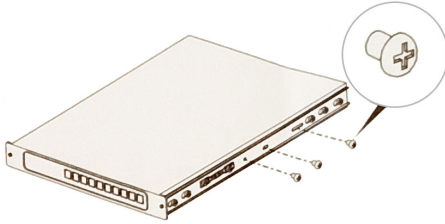
- Release and detach the inner rail from the outer rail.



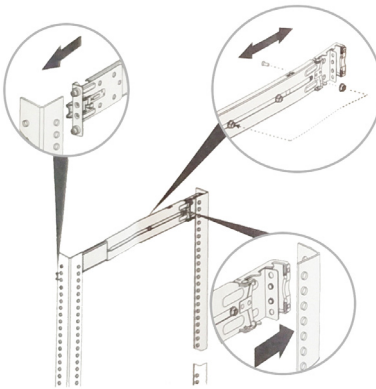
- Align the inner rail with the system.



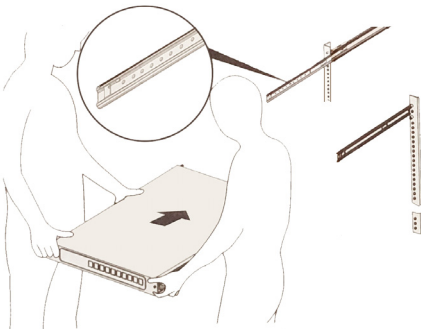
- Fasten it with the P-head to make sure it is well locked and the inner rail does not loosen from the system.



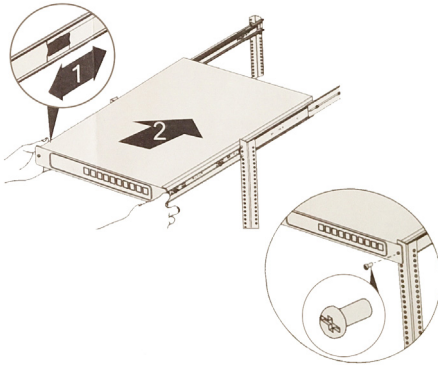
- Attach the outer rail to the rack.



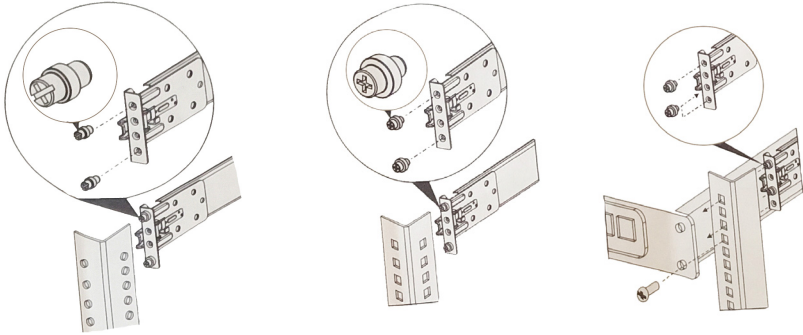
- Make sure the bearing retailer is locked forward. Horizontally install the system half way into the slide rail.



- Slide the release tab on the side and push system into the rack.



- You can use Round Hole pins or Square hole pins. Align the holes of the system with those of the rack and insert the screws. Tighten them to fix the system in place.



Connecting NVR XCTS

Connecting Devices

Cameras

NVR XCTS variants	Number of IP Cameras supported	Number of HDD supported
NVR03208XCTS	32	8
NVR06408XCTS	64	8
NVR12808XCTS	128	8
NVR25608XCTS	256	8

Make sure the camera's are installed as per your requirement.

Server

The provided Server does not have any default IP Address. Contact your Network Administrator and configure the same. The Default Password of the server is **xirtam**.

Monitors

- You can connect a VGA compatible Monitor to the VGA Ports or can also connect a monitor to the Display Ports.
- Connect one end of the cable to the Video IN of the monitor and the connect the other end to the VGA/Display port.
- You can also connect Display Port to HDMI Converter.



The recommended length of the cable is upto 3 meters (9.8 ft.).

Display Port to HDMI Converter is not provided by Matrix.

LAN/WAN

You can connect NVR XCTS to a LAN switch or to a WAN.

- Connect the Ethernet cable from your computer/LAN Switch to the LAN Port on the Rear panel.
- To connect NVR XCTS to the Internet, connect its LAN port either directly to the DSL Modem or Router or over a LAN Switch.



When connecting the LAN Port of NVR XCTS to a network computer, you may need to change the IP Address, the Subnet Mask and Gateway address of NVR XCTS. You may ask your Network Administrator for the IP Address assignment used on the network, the IP Address, Subnet Mask and Gateway Address for NVR XCTS, refer “[Changing the IP Address \(Windows10\)](#)”.

Backup Storage Device

To store back up of the recordings, you may connect any removable storage device such as an external hard disk to the USB Ports.

Mouse/Keyboard





- You can connect a wired or wireless Mouse or Keyboard to the USB port.

Connecting Power Supply

- Connect one end of the Power cable into the Power Supply on the NVR XCTS and the other end into the power outlet. Make sure the port is a Dual Input port as two Power Supply’s need to be connected.
- Switch on power supply. Wait for the reset cycle to complete.

Changing the IP Address (Windows10)

To change the IP Settings, follow the steps given below:

- Select **Start**  , then select **Settings**  > **Network & Internet** .
- Select **Ethernet**  , then select Ethernet Network you are connected to.
- Under **IP assignment**, select **Edit**.

- Under **Edit IP settings**, select **Automatic (DHCP)** or **Manual**.
- To specify the IPv4 settings manually,
 - Under **Edit IP settings**, select **Manual**, then turn on **IPv4**.
 - To specify the IP address, in the **IP Address**, **Subnet prefix length** and **Gateway** boxes, type the IP address settings.
 - To specify the a DNS server address, in the **Preferred DNS** and **Alternate DNS** boxes, type the address of the primary and secondary DNS servers.
- When you select **Automatic (DHCP)**, the IP address settings and DNS server settings are set automatically by your router or other access point.
- When you select **Manual**, you can manually, set your IP address settings and DNS server address.
- Select **Save**.

Software Installation of NVR XCTS

The Software Installation of NVR XCTS includes two steps:

- “Configuring RAID”
- “Installing SATATYA SAMAS Components”

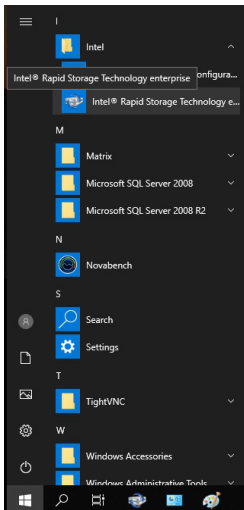


Make sure you have the Administrator rights.

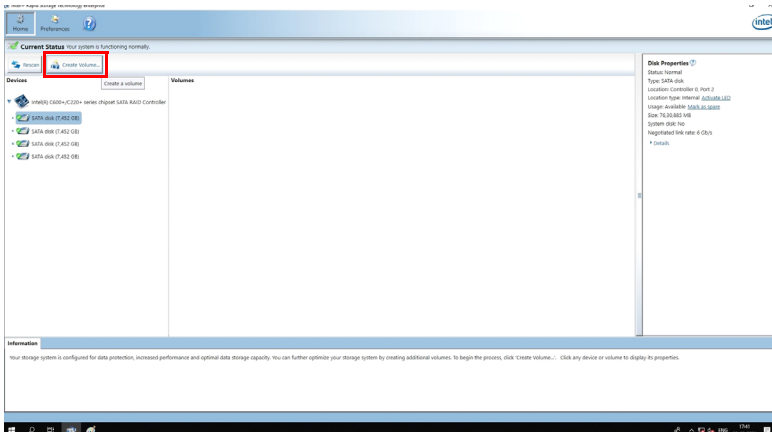
Configuring RAID

Follow the steps for configuring RAID.

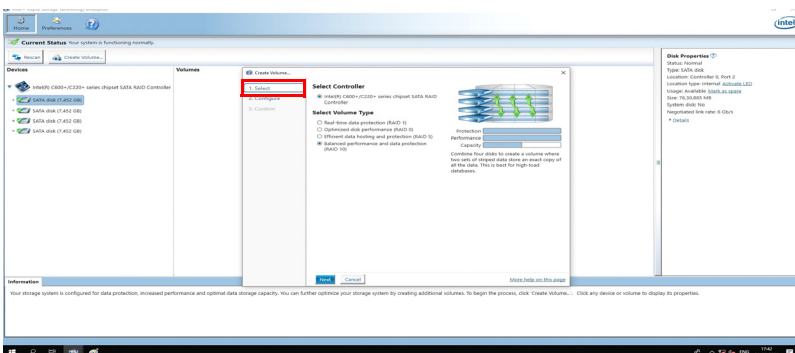
- Click **Intel**, click **Intel Rapid Storage Technology enterprise**.



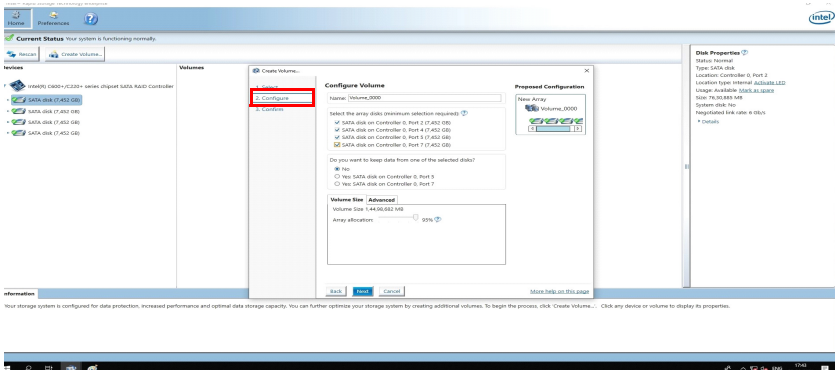
- Click **Create Volume**.



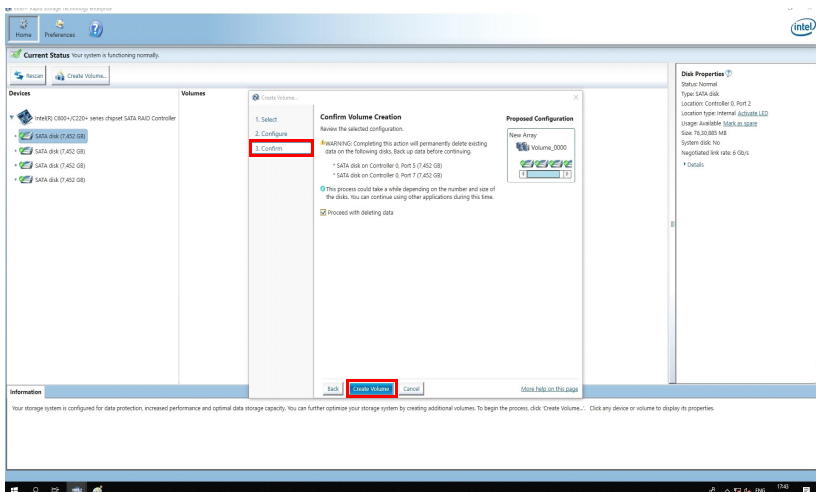
- Click **Select** and then select the desired RAID option — 0, 1, 5, 10. Click **Next**.



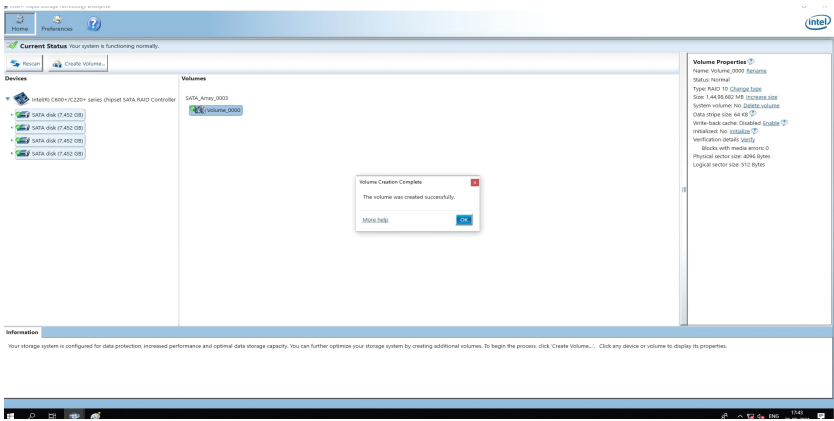
- Click **Configure**. The list of HDD's appears. Select the desired HDD's and click **Next**.



- Click **Confirm**. If you wish to clear the data in the disks, select the **Proceed with deleting data** check box.

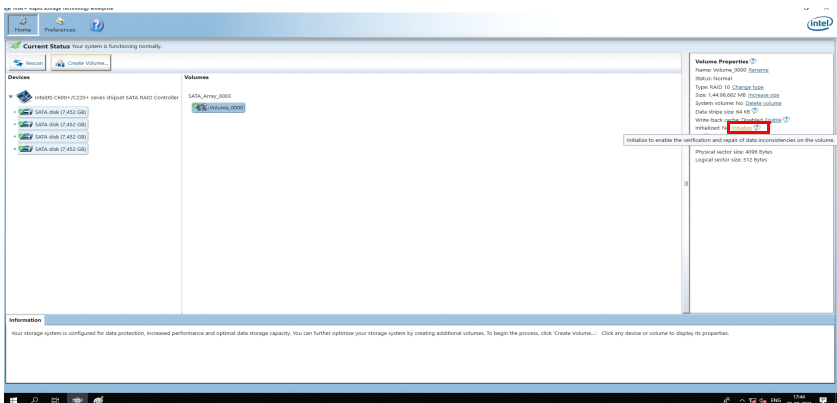


- Click **Create Volume**.

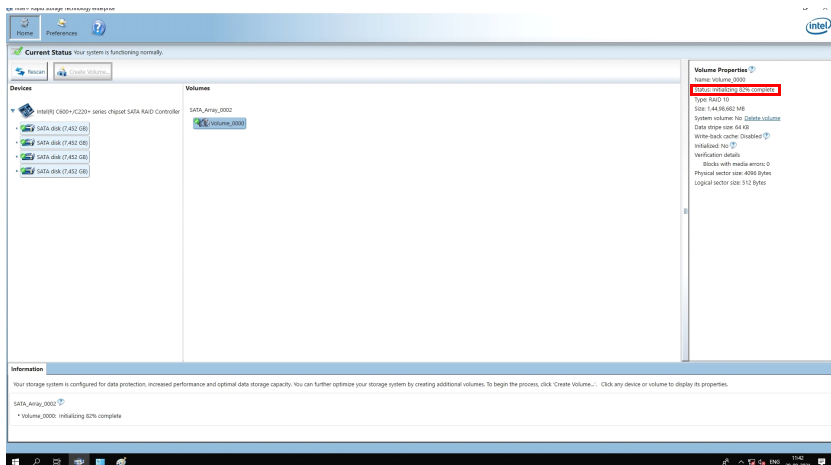


The Volume is created.

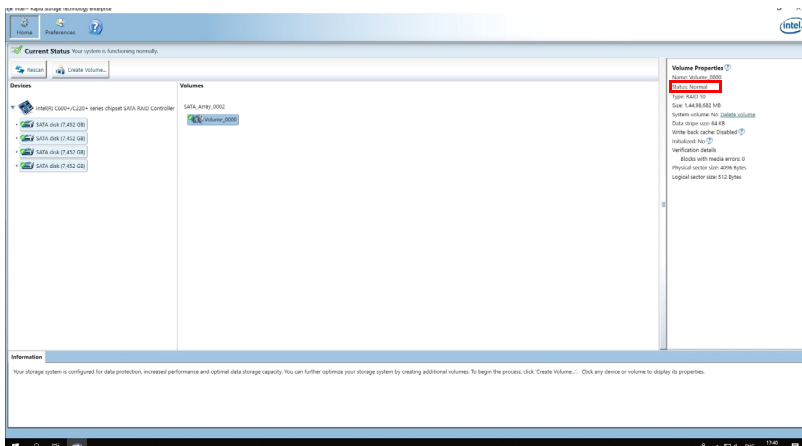
- After the Volume is created, click **Initialize**.



The **Status** displays the status of the initialization process. It displays the percentage of the completed task.

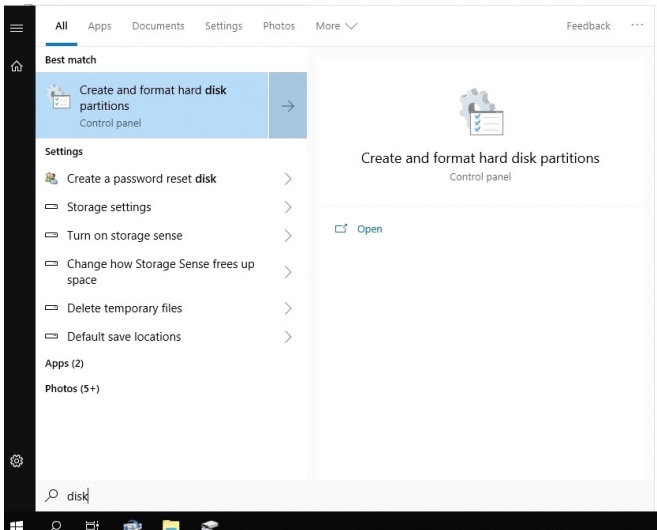


After the completion of the initialization process the **Status** displays Normal.

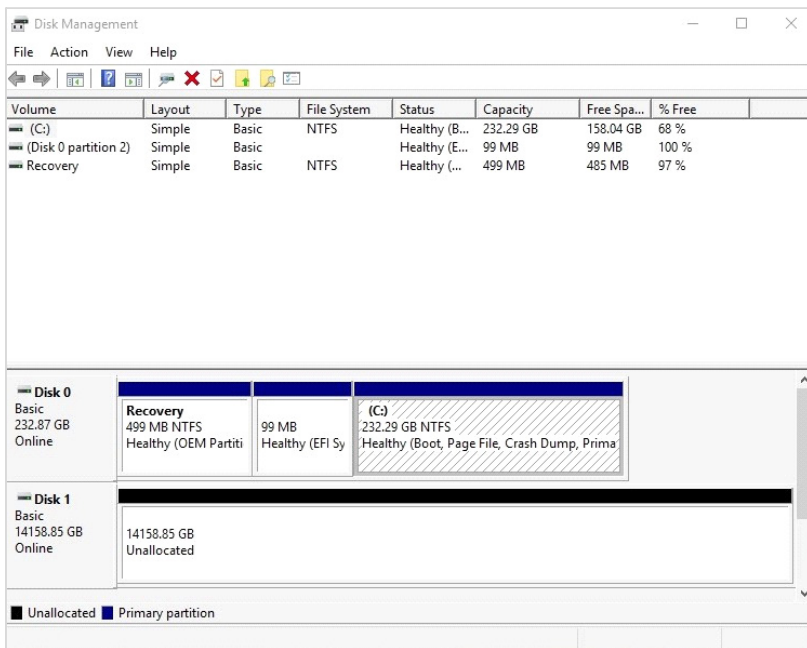


After the Volume is created, the next step is to display the same. To do so, following the steps given below:

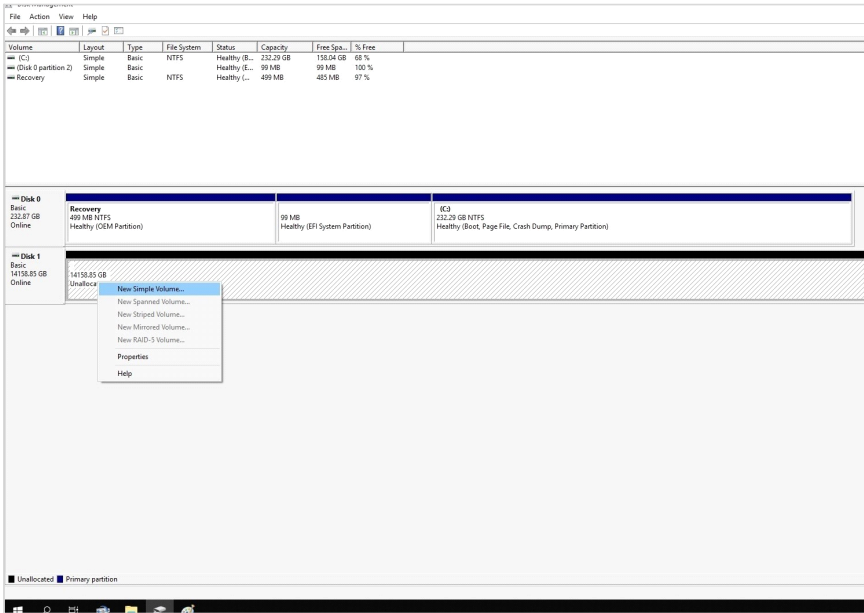
- Click **Create and format hard disk partitions**.



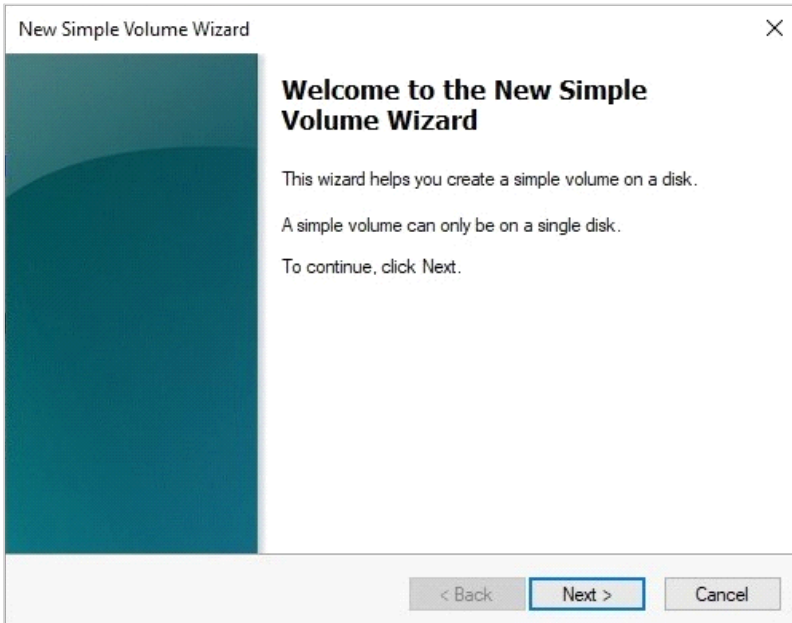
- The **Disk Management** window opens.



- Right-click on **Unallocated** and click the **New Simple Volume** option.



- The **New Simple Volume Wizard** opens.



- Click **Next**.

- Under **Specify Volume Size**, keep the default values of the parameters.

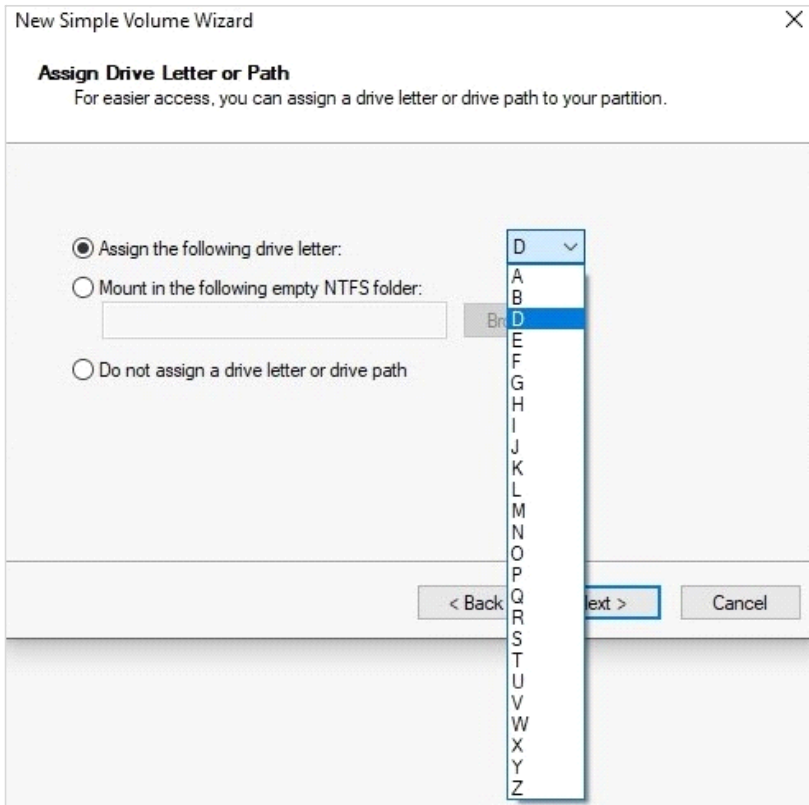
The screenshot shows a dialog box titled "New Simple Volume Wizard" with a close button (X) in the top right corner. The main heading is "Specify Volume Size" with a sub-instruction: "Choose a volume size that is between the maximum and minimum sizes." Below this, there are three rows of information:

Maximum disk space in MB:	14498664
Minimum disk space in MB:	8
Simple volume size in MB:	14498664

The "Simple volume size in MB" value is displayed in a text box with a blue border and a small up/down arrow icon on the right side. At the bottom of the dialog box, there are three buttons: "< Back", "Next >" (which is highlighted with a blue border), and "Cancel".

- Click **Next**.

- Under **Assign Drive Letter or Path**, in **Assign the following drive letter**, select the desired letter from the drop-down list.



- Click **Next**.
- Under **Format Partition**, select the option **Format the volume with the following settings**. In **Volume Label**, configure the name you wish to assign to the Volume.

New Simple Volume Wizard ✕

Format Partition
To store data on this partition, you must format it first.

Choose whether you want to format this volume, and if so, what settings you want to use.

Do not format this volume

Format this volume with the following settings:

File system:

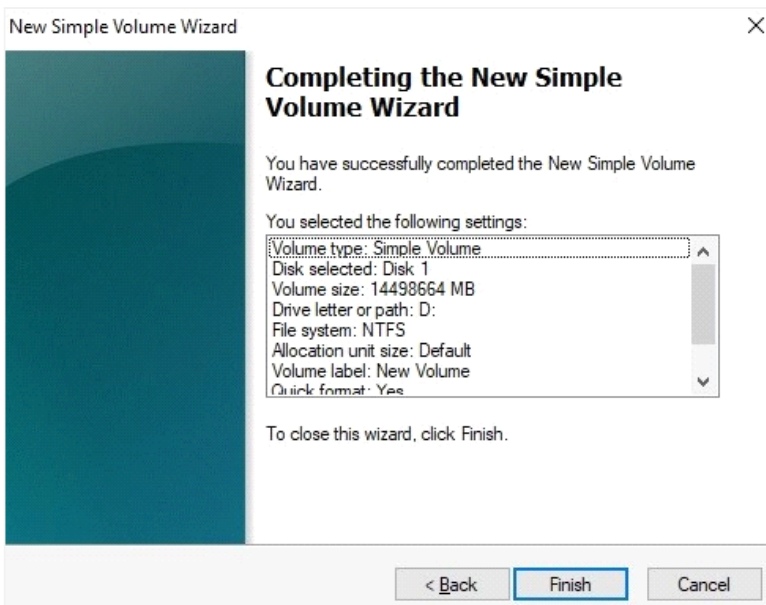
Allocation unit size:

Volume label:

Perform a quick format

Enable file and folder compression

- Click **Next**.



- To complete, click **Finish**.
- Click My PC/Computer this new volume appears as a new drive.

Now, you can proceed further with the installation of the SATATYA SAMAS components.

Installing SATATYA SAMAS Components

The following are already installed in NVR XCTS:

- Management Server
- License Server
- Recording Server
- Notification Server
- Admin Client
- Smart Client



We recommend you not to install any other components other than the ones mentioned above.

System Pre-requisites - Hardware

IVA Server can be installed but you need a separate Server for the same. The specifications are mentioned below.

IVA Server

Hardware/Software	Minimum	Recommended
CPU	Intel Core i5	Intel Core i7 or higher
RAM	8 GB	8-12 GB or higher
Network	100 Mbps	1 Gbps
Hard disk Space	10 GB free space	100 GB free space
Operating System	Windows10	Windows10 or above
Graphics Accelerator	1 GB Memory (Inbuilt)	4GB- Nvidia Graphics card (Inbuilt/External Card)
Frequency Clock	2.5 GHz	3.4 GHz or higher

Create/Upgrade/Backup Database

The SATATYA SAMAS allows the user to create a new database and upgrade or take the backup of the existing one. Click on the links below for detailed information.

[“Creating/Upgrading Database”](#)

[“Database Backup”](#)

Creating/Upgrading Database

You can create and upgrade the SAMAS Database using Database (DB) Utility.

The DB Utility can be opened navigating through **C:\Program Files\Matrix\SATATYA SAMAS Management Server**.

The SATATYA SAMAS Database Utility window appears as shown below.



Click **Setup** to create or upgrade an existing database.

The database utility setup page appears as shown below. Click **Change Settings** and select the **New Database** check box. Specify the Database Connection Settings as described below.

The screenshot shows a window titled "SATATYA SAMAS Database Utility". At the top left is the "MATRIX" logo. Below it, the text "SATATYA SAMAS Database Utility" is displayed. The main area contains several input fields and buttons:

- Database Type:** A dropdown menu set to "MS SQL".
- Server:** A text box containing "192.168.104.12\sqlexpress".
- Authentication Mode:** A dropdown menu set to "SQL Server Authentication".
- User Name:** A text box containing "sa".
- Password:** A text box with masked characters "*****".
- Database Name:** A text box containing "SATATYA_SAMAS_1".

On the right side, there are four buttons: "Upgrade", "Change Setting", "Save Setting", and "Test Connection". At the bottom, there are "Back" and "Close" buttons. Below the "Database Name" field, there is a checkbox labeled "New Database" which is checked. Below the checkbox is a large, empty rectangular text box.

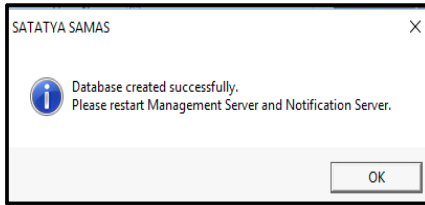
- **Database Type:** The database type supported is MS SQL Server.
- **Server:** Specify the database Server Name in the following format:- Database server name\Instance Name e.g. dbserver\sqlexpress.
- **Authentication Mode:** Select the desired option from the drop-down list— SQL Server Authentication or Windows Authentication.
- **User Name:** Specify the User Name of the user of SQL Server. By default, User Name is **sa**.
- **Password:** Enter the Password of the user of SQL Server. By default, Password is **Matrix@123**.



The password is case-sensitive. Make sure it is entered in the same format as mentioned above.

- **Database Name:** Specify the Database Name of the SAMAS application. By default the application creates a database by the name of "SATATYA_SAMAS".

Click **Create** to start the creation of the database.



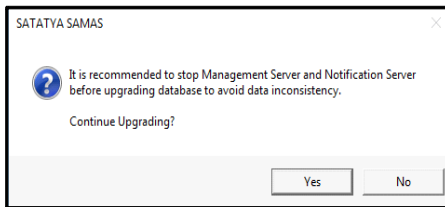
Click **Test Connection** to test the connection with the database server. The connection will be successful only if all the parameters have been configured correctly.

Save the settings once done by clicking **Save Setting**.

You can now start using the SAMAS applications installed on the computer.

Once the SAMAS database has been created using the above procedure, the administrator needs to subsequently only use the **Upgrade** option as and when required. Do not select **New Database**.

Click **Upgrade** to upgrade the database.

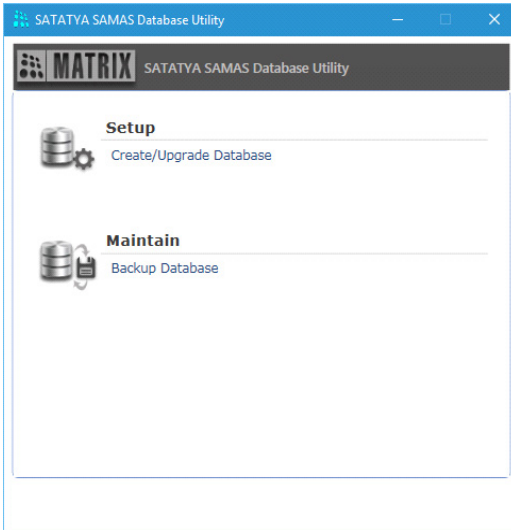


Database Backup

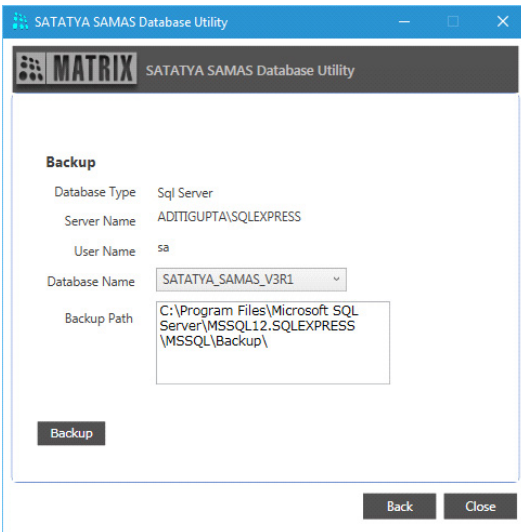
In the event of software or hardware problems, it is always a good idea to have a recent copy of your database files. The **Backup** option allows the administrator to take backup of the database at regular intervals. You can take the backup of the database using the Database Utility.

The Database Utility can be opened by navigating through **C:\Program Files\Matrix\SATATYA SAMAS Management Server**.

The SATATYA SAMAS Database Utility window appears.

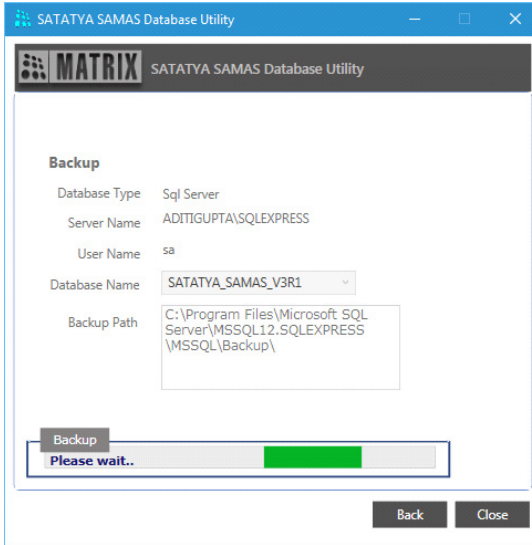


Click **Maintain** to take the backup of the database.

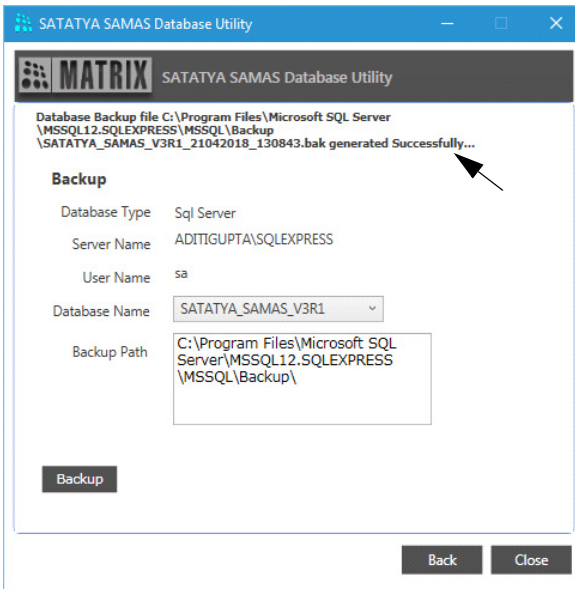


- Select the **Database Name** from the drop-down list.
- In **Backup Path**, the path of the backup file is displayed where the MS SQL has been installed. This path cannot be changed.

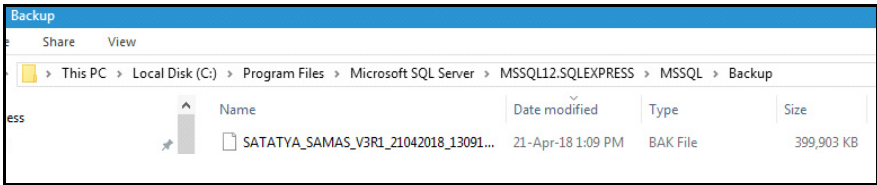
- Click **Backup**. The system will start the backup process as shown below.



On successful completion of the process, the system displays the path as well as the name of the backup file.



The database backup file is created at the specified location as shown below:



Setting-up the NVR XCTS Servers using the Manager Utilities

Once the SAMAS Database installation is successfully completed, the you must perform the following steps before configuring the *Admin Client*.



The Management Server, License Server and Database must be in the same network, in-case of Server Based License Dongle.

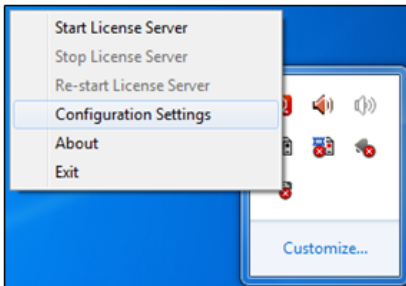


Crystal Reports Runtime 13.0 which is required for report generation and must be installed where Management Server is installed. Matrix does not provide this software for installation.

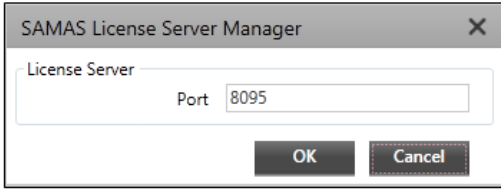
Step 1: Configure License Server Settings using the License Server Manager Utility.

The License Server Settings helps to configure the Listening Port of the installed License Server.

- Ensure that you have license dongle with you and the License Server and Dongle must be on the same PC.
- Navigate through C:\Program Files\Matrix\SATATYA SAMAS License Server. Click License Server.
- Right-click on the **License Server** icon in the Windows taskbar.



- Select **Configuration Settings**.
- Specify the Listening **Port** using which the License Server communicates with the Management server.
- Click **OK** to save the License Server Settings.

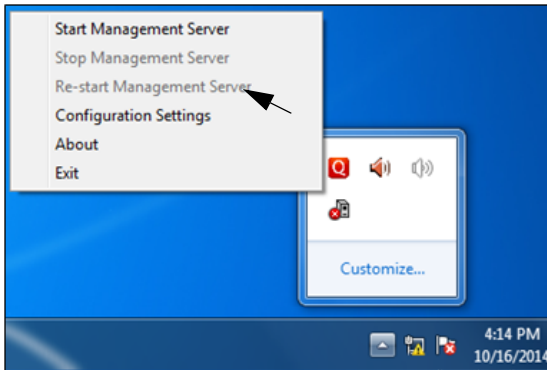


Now from the windows taskbar, select **Start License Server** to start the service on the system.

Step 2: Configure Management Server Settings using the Management Server Manager Utility

The Management Server is responsible for centralized authentication, logging (events, actions, user activities, etc.) and configuration of the security system consisting of video surveillance devices.

- Navigate through C:\Program Files\Matrix\SATATYA SAMAS Management Server.
- Click Management Server Manager. Right-click on the **Management Server** icon in the Windows taskbar.



- Click **Configuration Settings**.
- In the **Management Server Manager** window, enter Port configurations for establishing communication with *Admin Client, Recording Server, Media Client, COSEC Server, IVA Server, HTTP and TCP Port and License Server* with SSL or Non SSL connection as required.

The following communication between Client and Server will be secure.

Client	Server
Media Client (Smart Client, Multi-Monitor Client)	Management Server
IVA Server	Management Server
Media Client (Smart Client, Multi-Monitor Client)	Recording Server
IVA Server	Recording Server

The **Non SSL** connection ports are shown as below:

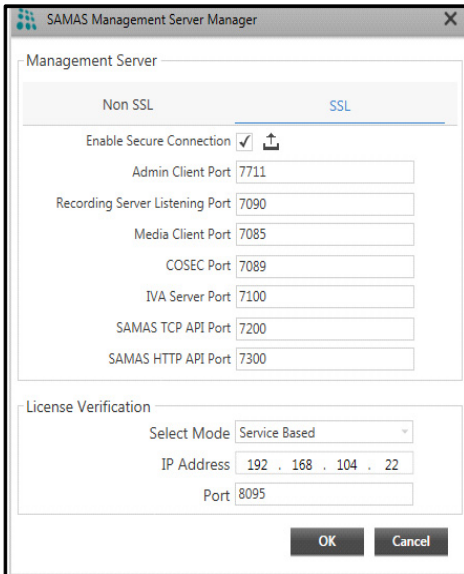
License Verification for Non SSL

License Verification for Non SSL connection can be done with **Service Based** mode where the license dongle is to be connected to the License Server machine.


IP Address: Enter the IP address of the License Server machine where the Licensed Dongle is connected.

Port: Specify the Listening Port on which License Server communicates with the Management server.

The **SSL** connection port settings is shown as below:



The screenshot shows the 'SAMAS Management Server Manager' window. It has two tabs: 'Non SSL' and 'SSL'. The 'SSL' tab is selected. Under the 'SSL' tab, there is a section for 'Enable Secure Connection' with a checked checkbox and an 'Upload' button. Below this are several text input fields for ports: 'Admin Client Port' (7711), 'Recording Server Listening Port' (7090), 'Media Client Port' (7085), 'COSEC Port' (7089), 'IVA Server Port' (7100), 'SAMAS TCP API Port' (7200), and 'SAMAS HTTP API Port' (7300). There is also a 'License Verification' section with a 'Select Mode' dropdown set to 'Service Based', an 'IP Address' field containing '192 . 168 . 104 . 22', and a 'Port' field containing '8095'. At the bottom right are 'OK' and 'Cancel' buttons.

- Select the Enable Secure Connection check box and upload the SSL certificate by clicking the Upload  button.

To know more about **SSL** refer to the SATATYA SAMAS Installation Guide.

License Verification for SSL

License Verification for SSL Connection can be done with **Service Based** or **Device Based** mode.

Service Based

Select Service Based mode from the **Select Mode** drop-down list if the license dongle is to be connected with the License Server machine.

- **IP Address:** Enter the IP address of the License Server machine where the Licensed Dongle is connected.
- **Port:** Specify the Listening port on which License Server communicates with the Management server. Make sure the same Port number is entered in the License Server.



By default, Management Server runs on the IP Address of the system where it is installed.

To know more about Device based license refer to the **SATATYA SAMAS Installation Guide**.

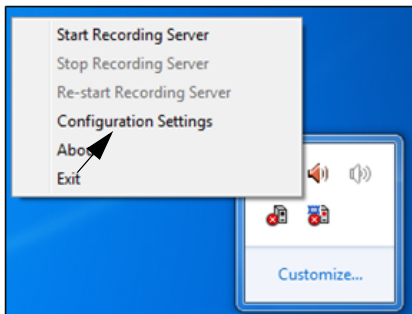
- Click **OK** to save the settings.

Now again from the windows taskbar, select **Start Management Server** to start the service on the system.

Step 3: Configure Recording Server settings using the Recording Server Manager Utility.

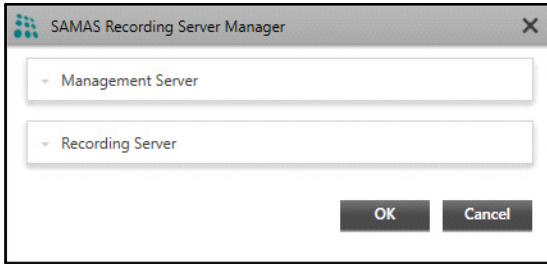
The Recording Server is responsible for communicating with the video surveillance devices, recording the video streams into its storage drive, and streaming live and recorded videos to the clients.

- Navigate through C:\Program Files\Matrix\SATATYA SAMAS Recording Server.
- Click *Recording Server Manager*. Right-click on the **Recording Server** icon in the Windows taskbar.



- Click **Configuration Settings** and the following configuration window appears.

It includes the configuration of Management Server and Recording Server. Click on the links below for the detailed explanation.



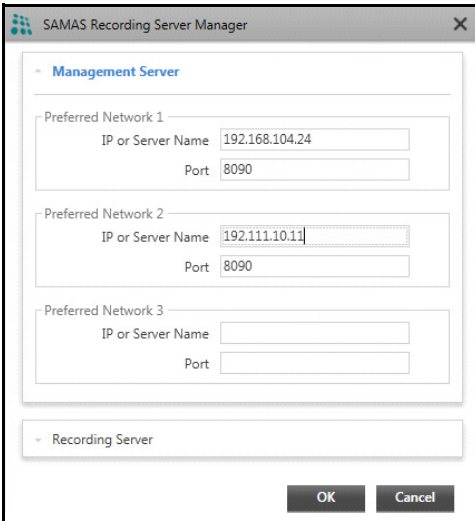
“Management Server”

“Recording Server”

Management Server

For the Recording Server (RS) to communicate with the Management Server (MS), a connection between them needs to be established by configuring the MS IP Address and Port in the RS-Manager. But it is not necessary that both the components are located in same network (private), they may be located in two different networks (public). Hence, SAMAS allows to configure 3 Preferred Networks where you can add private network as well as public network of MS.

Expand the **Management Server** panel as shown below to configure parameters for Preferred Network 1 (PN1), Preferred Network 2(PN2) and Preferred Network 3 (PN3).



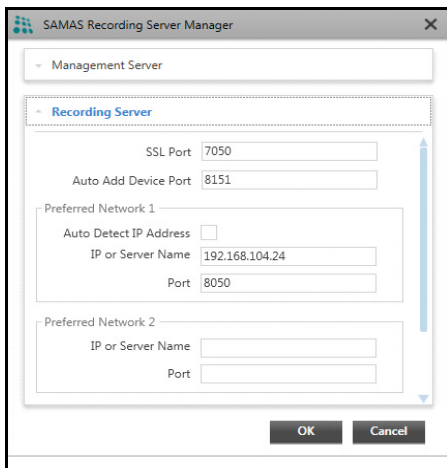
- **IP Address or Server Name:** Enter either the Private or Public IP address of Management Server or enter Host Name, Domain Name or Server Name of ISP1 and ISP2.
- **Port:** Enter either Private or Public Port.

Recording Server

Live Stream of the cameras can be accessed using clients such as Admin Client, Smart Client and IVA Server. For this, clients has to communicate with the Recording Server (RS).

Also, it is not necessary that both client and RS are located in the same network, they may be located in two different networks. So to serve both the scenarios, SAMAS allows to configure preferred networks, where user can add private as well as public networks of RS.

Expand the **Recording Server** panel as shown below to configure the following parameters.



- **SSL Port:** Specify the **SSL Port** where secure connection with RS will be established.
- **Auto Add Device Port:** Specify the **Auto Add Device Port** to communicate with SATATYA Devices like PARAM NVR XCTS, automatically add the devices into SAMAS.

Recording Server (RS) will listen to Auto Addition Device request on this port.

- **Auto-Detect IP Address:** If the **Auto-Detect IP Address** check box is enabled then IP Address of your PC where Recording Server is installed is considered as IP Address of Recording Server. Whenever the IP Address of the PC is changed then the same is updated as Recording Server IP.

If Auto-Detect IP Address is disabled then you need to specify the **IP Address** and **Port** of Recording server.

Enter the following parameters of Recording Server in **Preferred Network 1,2 and 3**.

- **IP Address or Server Name:** Enter either Private or Public IP address of Recording Server. In this field, you can also enter Host Name, Domain Name or Server Name of ISP1 and ISP2.
- **Port:** Enter either Private or Public Port on which RS listens client request.

For Private Network, enter the 'Recording Server Port'.

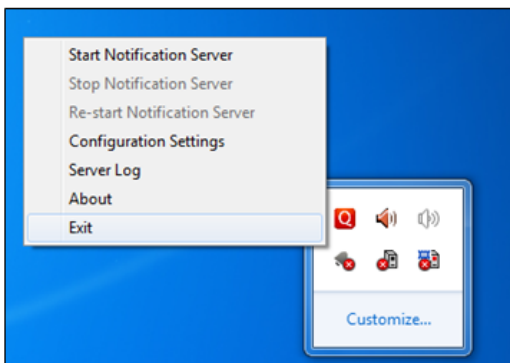
For Public network, enter the forwarded port (ISP1 Port/ISP2 Port) that has been mapped with the internal 'Recording Server Port'.

- Click **OK** to save settings.
- Now again from the windows taskbar, select **Start Recording Server** to start the service on the system.
- The Recording Server will show Activation Pending till the server is not activated. The Servers are activated from the Admin Client. Refer "[Accessing the Admin Client](#)".
- After activating, the Recording Server will start.


Step 4: Configure Notification Server settings using the Notification Server Manager Utility.

The E-mail and SMS Notification Server is responsible for configuration of Mail Server and SMS Service provider to send E-mail and SMS notifications to the User.

- Navigate through C:\Program Files\Matrix\SATATYA SAMAS Notification Server.
- Click *Notification Server*. Right-click on the **Notification Server** icon in the Windows taskbar.



- Click **Configuration Settings**.
- Enter the **User Name** and **Password** as configured in Admin Client.Refer “[Accessing the Admin Client](#)”.
- Click **Login**.

 *Make sure the user has the configuration rights of E-mail and SMS Settings in System Accounts of Admin Client.*

The Notification Server Manager window appears as shown below:

E-mail Settings

For the E-mail Settings, configure the following parameters.

SMTP Server: Specify the IP Address or Name of the configured SMTP Server.

SMTP Port Number: Specify the TCP port for the SMTP service as set in the SMTP Server.

Sender E-mail ID: Enter the sender's E-mail ID.

Sender Display Name: Enter the User Name that will be displayed in the E-mails.

User Name: Specify the User Name as set in the E-mail account.

Password: Specify the Password as set in the E-mail account.

Alert Cycle: Specify the time in seconds between successive send attempts when the system tries to send the pending messages.

Retry Count: Specify the number of times the system needs to retry to send the same E-mail message in the event of an unsuccessful attempt.

Active Days: Specify the number of days the system needs to keep the unsent messages active in the event of the service being stopped.

Enable SSL: In the event of using an external SMTP Server like Gmail, then make sure this is enabled.

Enable Sending E-mail: Select this check box to enable the mail sending functionality.

E-mail Id: Enter the E-mail ID to check the connectivity and click **Send**.

Click **Apply** to save the settings.

Now again from the windows taskbar, select **Start Notification Server** to start the service on the system.

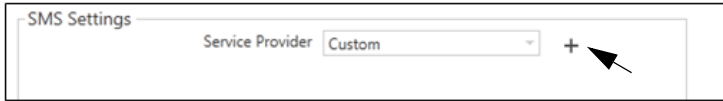
SMS Settings

For the SMS settings, select **Custom** as the Service Provider.

Custom Service Provider Settings

You can add a Service Provider other than the ones provided by default. To do so,

- Select **Custom** as the Service Provider option. Maximum 99 service providers can be added.
- Click **Add** + .



Specify the API configuration parameters for the new Service Provider:

Request

Service Provider Name: This is the Service Provider's Name.

Service Provider URL: This is the Service Provider's Website used for registration etc.
E.g. www.smsgatewaycentre.com.

Base URL: This is the URL to which arguments such as user name, password etc. are to be appended. E.g. http://smsgatewaycentre.com/library/send_sms_2.php?

API Argument: Enter the argument required to be mentioned while constructing the URL. E.g. "User", "Password" etc.

Argument Value: Select a value to be mapped against the defined API Argument. Select "Custom" to define a custom static value.

Click **Add Argument** to save the new argument and value.

Request
✕

Service Provider Name

Service Provider URL

Base URL

API Argument

Argument Value

Custom

API Argument	Argument Value	Delete
User	User Name	<input type="button" value="✕"/>
Password	Password	<input type="button" value="✕"/>

Argument Separator

Request Method

Request Preview

Balance
✕

Balance Check

Balance URL

Response
✕

API Response

SAMAS Response

Argument Separator: Define a character that can be used as a valid separator between arguments used to construct the API URL. E.g. “&”.

Request Method: Select a method by which the request is to be sent.

Request Preview: Displays the preview of the updated API request.

Balance

Balance Check: Select this check box if you want the Balance URL to be displayed.

Balance URL: Displays the URL, which can be edited, if required.

Response

API Response: Define the response or error codes. Maximum 99 responses can be configured.

SAMAS Response: For the configured API response, select the corresponding SAMAS Response. Such as Success or Failure. E.g. Error 404 should be considered as Failure.

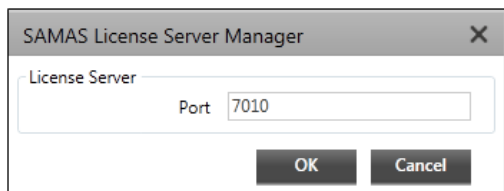
Click **Add Response** to save the response configuration.

Click **Apply** to save the changes.

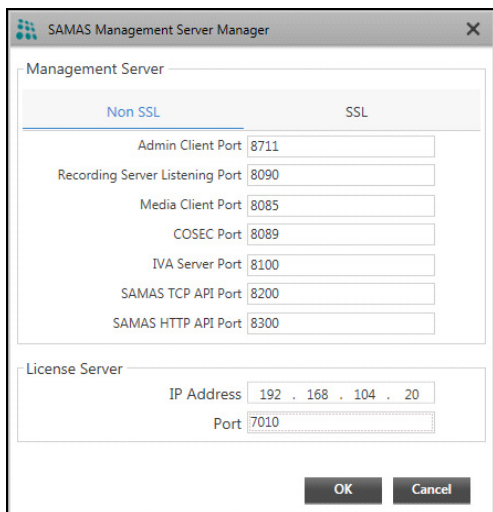
Communication of Management Server (MS), Recording Server (RS) and License Server (LS)

If the License Server is located at the Head Office - 192.168.104.20, Management Server is at the Branch Office - 192.168.104.17 and Recording Server with cameras is located at the Server Room - 192.168.104.23

To view cameras in the Server Room from Branch Office, specify the License Server Port (where SAMAS Dongle is connected) in the License Server Manager of Branch Office PC.



In the Management Server Manager enter the License Server IP 192.168.104.20 and Port 7010.



The screenshot shows the SAMAS Management Server Manager dialog box. It has a title bar with the SAMAS logo and a close button. The main area is divided into two sections: "Management Server" and "License Server".

Management Server

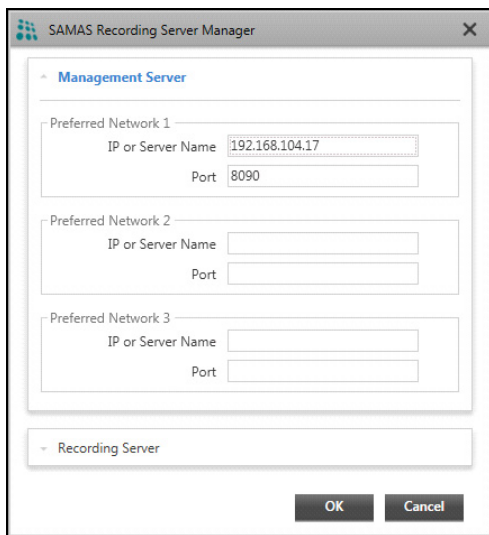
	Non SSL	SSL
Admin Client Port	8711	
Recording Server Listening Port	8090	
Media Client Port	8085	
COSEC Port	8089	
IVA Server Port	8100	
SAMAS TCP API Port	8200	
SAMAS HTTP API Port	8300	

License Server

IP Address: 192 . 168 . 104 . 20
Port: 7010

Buttons: OK, Cancel

Now the Recording Server is installed at 192.168.104.23. So open the Recording Server Manager and enter the IP Address as 192.168.104.17 and port as 8090 of MS.



The screenshot shows the SAMAS Recording Server Manager dialog box. It has a title bar with the SAMAS logo and a close button. The main area is divided into two sections: "Management Server" and "Recording Server".

Management Server

Preferred Network 1

IP or Server Name: 192.168.104.17
Port: 8090

Preferred Network 2

IP or Server Name:
Port:

Preferred Network 3

IP or Server Name:
Port:

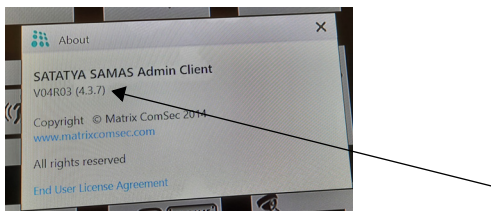
Recording Server

Buttons: OK, Cancel

The RS will send request to MS to activate. From the Admin Client the RS has to be activated and then cameras of the RS can be viewed in the Smart Client.



For the Version details about each Server, right-click on the particular Server icon on the Windows taskbar and click **About** as shown below.




To configure the IVA Server, refer to the **SATATYA SAMAS Installation Guide**.

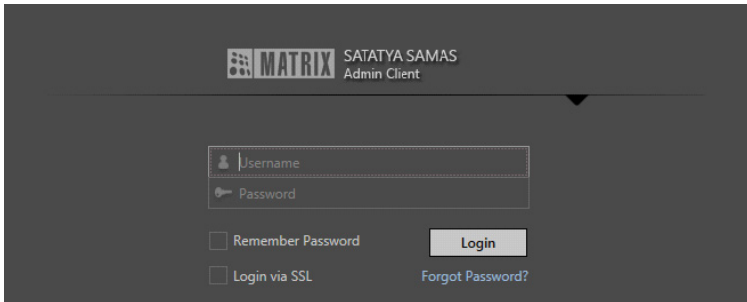
Configuring the NVR XCTS

Accessing the Admin Client

Follow the step-by-step installation procedure as instructed in the Installation Guide. On

completion of installation, the *Admin Client* shortcut icon  appears on your Windows desktop.

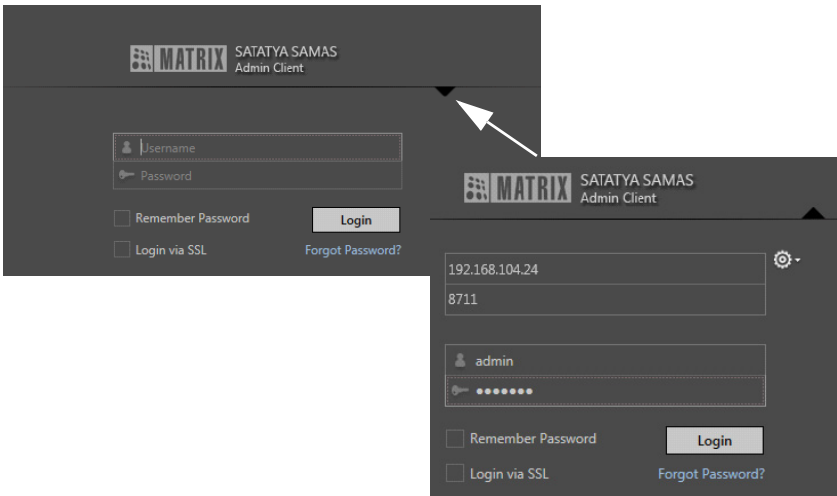
Double-click on this icon to launch the *Admin Client* application. The login page appears as shown below.



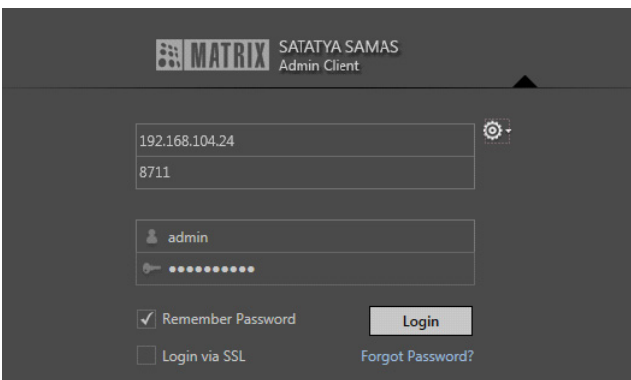
To access the Admin Client, make sure the Management Server is installed and configured, so that the connection between the Admin Client and Management Server (MS) can be established.

Follow the steps below:

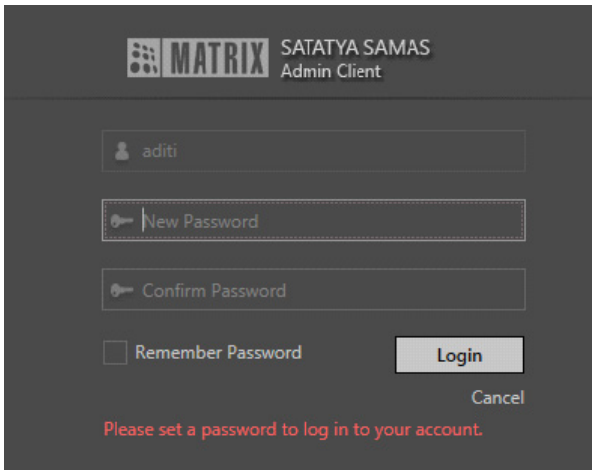
- Expand the panel as shown below for performing the network configurations.



- **IP Address or Server Name:** Enter either Private or Public IP address of Management Server. You can also enter the Host Name, Domain Name or Server Name of ISP1 and ISP2.
- **Port:** Enter either Private or Public Port.
- The first login can be performed using the default User Name “**admin**”.



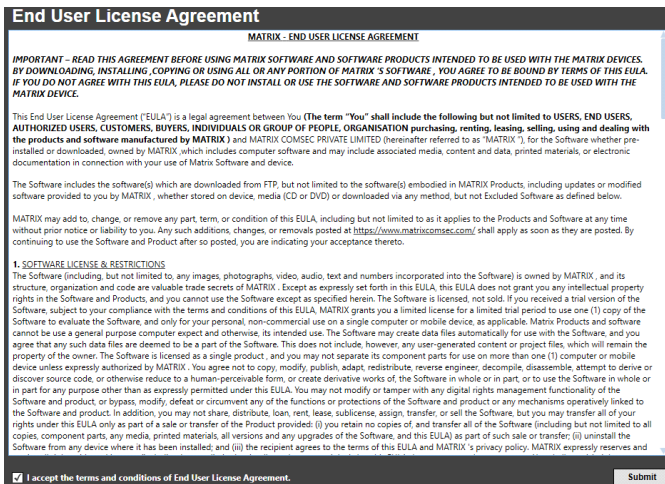
- You need to set the password. Enter the **New Password** and **Confirm Password** and click **Login** to enter the system with new credentials.



Thus, the user can now use the new credentials to login into the Admin Client.

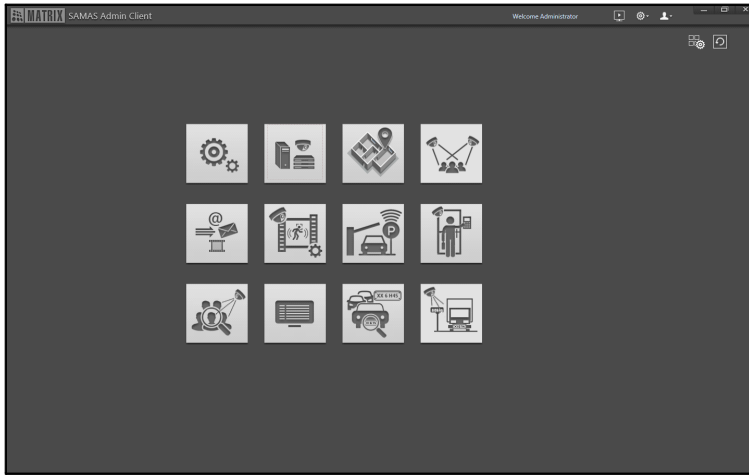


At the time of first login, you will be prompted to set a new password. Create a strong password and make sure you note it down in a secure place for future reference.



Select the **I accept the terms and conditions of End User License Agreement (EULA)** check box and click **Submit**.

The *SATATYA SAMAS Admin Client* Homepage appears as shown below:



For configuring, refer to the ***SATATYA SAMAS Administrator Guide***.

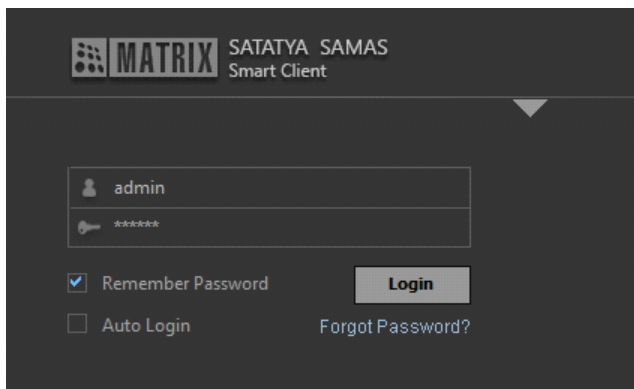
Accessing the Smart Client

To access the **Smart Client** application, navigate to the Matrix Smart Client application from the Start button of Windows desktop from the following path:

Start > Programs > Matrix > SATATYA SAMAS > Smart Client OR double click on the Smart

Client  icon on the desktop.

The Smart Client login page appears as shown below:

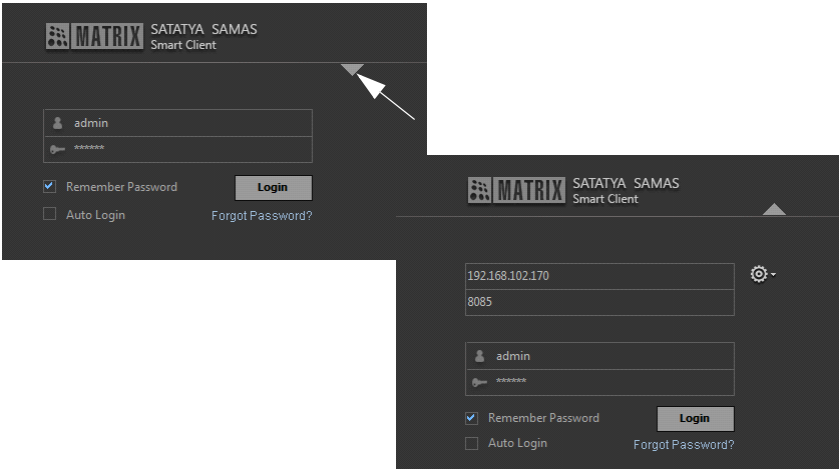


*Customized logo will be shown on the login page, Set Password and Forgot Password page instead of **MATRIX** logo, if it is configured in SAMAS Admin Client. Refer SATATYA SAMAS Administrator Guide for the configuration of custom logo, in General Settings > System Settings > Logo Personalization.*

To access the Smart Client, you need to do the prior network configurations so that the connection between the Smart Client and Management Server (MS) can be established.

Follow the steps below:

- Expand the panel as shown below for performing the network configurations.



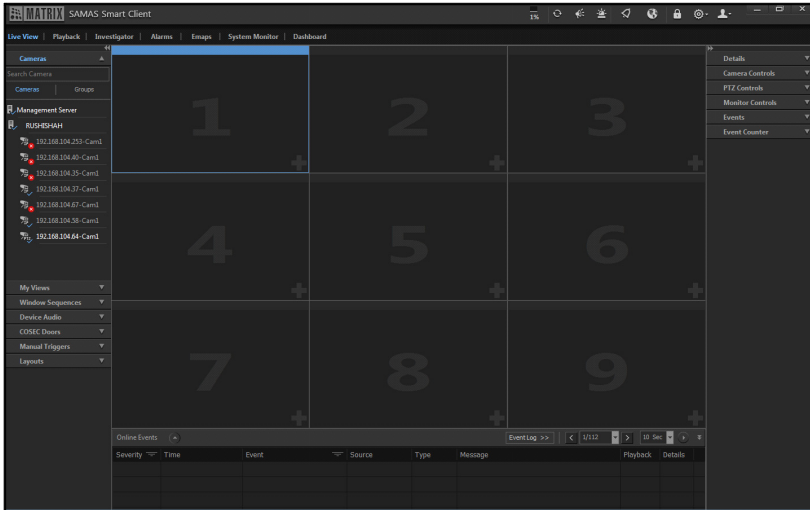
- **IP Address or Server Name:** Enter either Private or Public IP address of Management Server. In this field, you can also enter Host-name, Domain name or server name of ISP1 and ISP2.

Port: Enter either Private or Public Port.

- The first login can be performed using the default User Name “**admin**”.
- Enter the **New Password** and **Confirm Password** and click **Login** to enter the system with new credentials.

Thus, the user can now use the new credentials to login into the Smart Client.

The Smart Client home page appears as shown below:



*Customized logo will be shown on the Title Bar of each tabs instead of **MATRIX** logo if it is configured in SAMAS Admin Client. Refer **SATATYA SAMAS Administrator Manual** for the configuration of custom logo, in General Settings > System Settings > Logo Personalization.*

For detailed configurations, refer to the **SATATYA SAMAS Smart Client Manual**.

Accessing the Multi Display Client (from separate workstation system)

The Matrix Multi Display Client² provides the user with an interface to view live stream of cameras on Multiple Displays configured on a single System. The single CPU can connect to multiple Displays through a graphic card.

Sometimes it is desirable to view various Camera Stream on different Displays to get a large Desktop Space in a single System. The Multi Display Client serves this purpose. The user can view the live stream through the created views.

For details, refer to the **SATATYA SAMAS Multi Display Manual**.

² *In the future releases, the Multi Display Client will be merged with the Smart Client.*

Accessing the Media Player (from separate workstation system)

The Matrix SAMAS Media Player provides the user with an interface to view the records stored in Backup Storage. With the Media Player, user can scan the video records, perform basic playback functions viz. 'Play', 'Pause', 'Stop', 'Smooth Reverse Play', 'Speed-up', 'Speed-down', 'Previous frame' and 'Next frame'.

It is also sometimes desirable to play recorded videos from selected cameras in a synchronous manner i.e. all videos being played synchronously with reference to a single time instance. This feature shall also be supported in the Media Player. Also the IVA operations can be performed with the SAMAS Media player.

For details, refer to the **SATATYA SAMAS Media Player Manual**.

Appendix

Disposal of Products/Components after End-Of-Life

Main components of Matrix products are given below:

- **Soldered Boards:** At the end-of-life of the product, the soldered boards must be disposed through e-waste recyclers. If there is any legal obligation for disposal, you must check with the local authorities to locate approved e-waste recyclers in your area. It is recommended not to dispose-off soldered boards along with other waste or municipal solid waste.
- **Batteries:** At the end-of-life of the product, batteries must be disposed through battery recyclers. If there is any legal obligation for disposal, you may check with local authorities to locate approved batteries recyclers in your area. It is recommended not to dispose off batteries along with other waste or municipal solid waste.
- **Metal Components:** At the end-of-life of the product, Metal Components like Aluminum or MS enclosures and copper cables may be retained for some other suitable use or it may be given away as scrap to metal industries.
- **Plastic Components:** At the end-of-life of the product, plastic components must be disposed through plastic recyclers. If there is any legal obligation for disposal, you may check with local authorities to locate approved plastic recyclers in your area.

After end-of-life of the Matrix products, if you are unable to dispose-off the products or unable to locate e-waste recyclers, you may return the products to Matrix Return Material Authorization (RMA) department.

Make sure these are returned with:

- proper documentation and RMA number
- proper packing
- pre-payment of the freight and logistic costs.

Such products will be disposed-off by Matrix.

"SAVE ENVIRONMENT SAVE EARTH"



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