
Setup EMR9000 with SAS Storage
Application Notes

Version <1.0>



Technical Support Team

1. Preface

The application note is used to educate customer how to setup EMR9000 with SAS storage and using Milestone software as an example. It includes below topics:

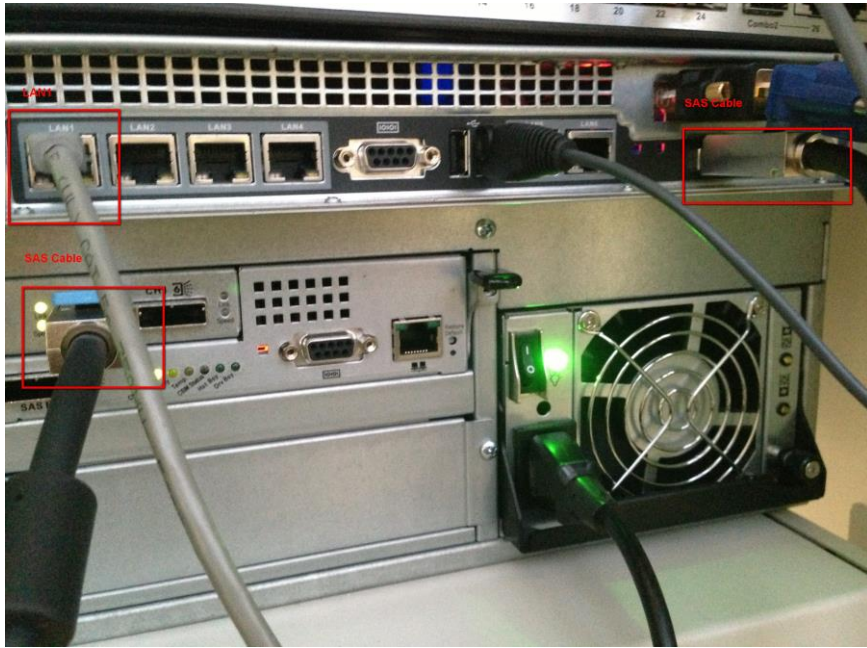
- 1.1 Setup hardware/software environment
- 1.2 Configure RAID from SANWatch
- 1.3 Format RAID volume on Windows
- 1.4 Setup Milestone xProtect

2. Prepare Equipment

- 2.1 EMR9000 Server.
- 2.2 SAS or iSCSI storage and related cables.
- 2.3 Gigabit Switch or POE Switch.
- 2.4 Keyboard and Mouse.
- 2.5 Monitor.

3. Setup Environment

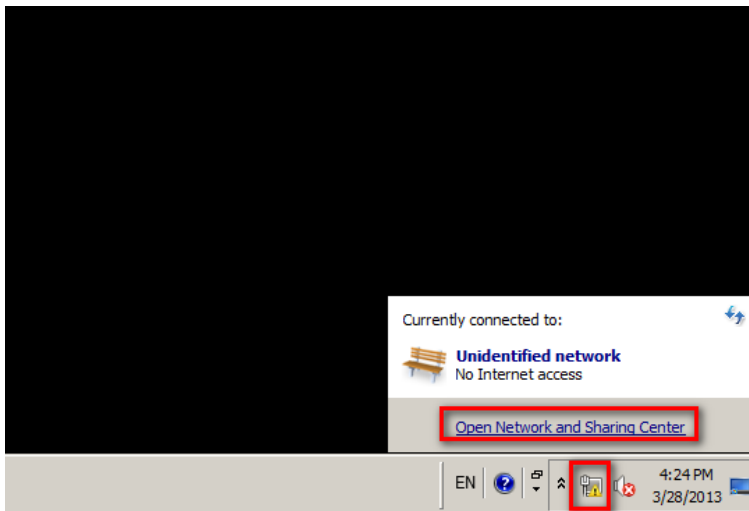
- 3.1 Setup hardware environment.
 - Connect LAN 1 to switch.
 - Connect power cable on EMR9000 and SAS storage.
 - Connect key board, mouse to EMR9000.
 - Connect VGA monitor on EMR9000
 - Connect SAS cable between SAS storage Channel 0 and left SAS port on EMR9000.



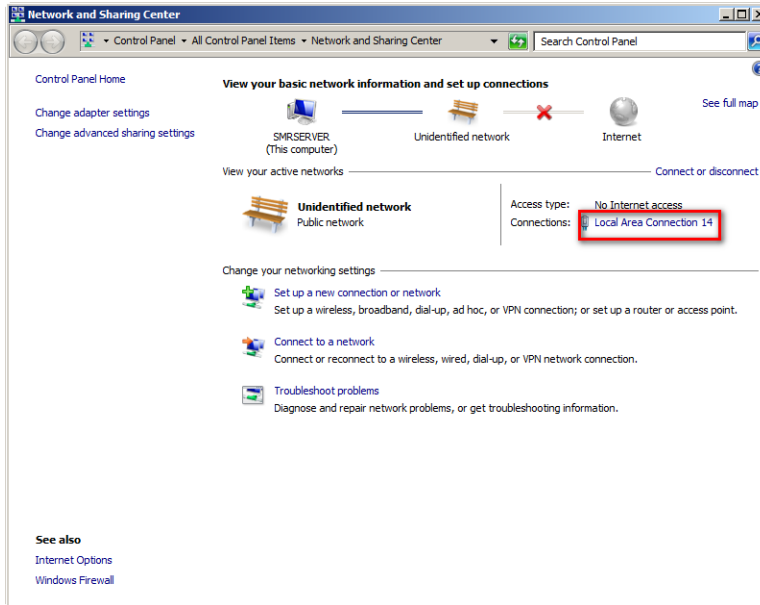
- Turn on SAS Storage.
- Turn on EMR9000

3.2 Setup Network

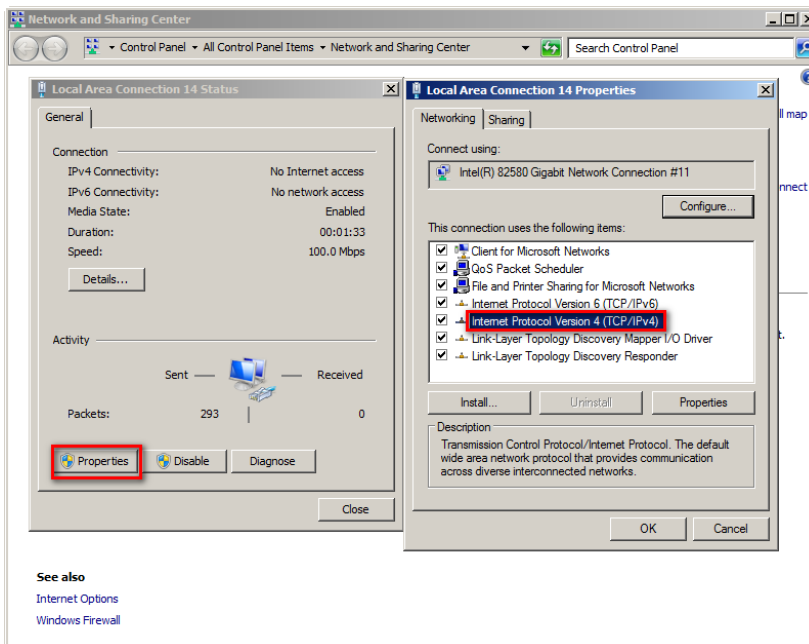
- Login Windows by Administrator/Emr9000_Srv
- Click network icon and click "Open Network and Sharing Center".



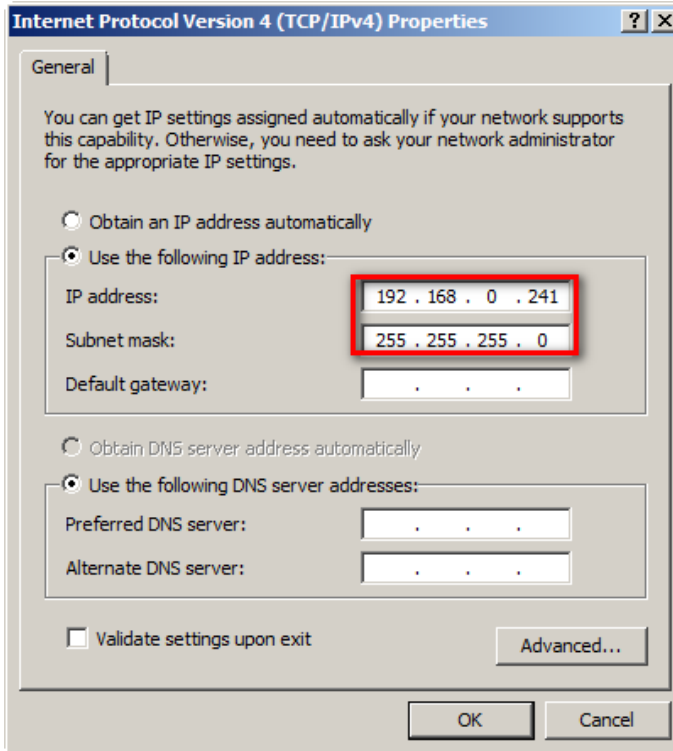
- Click Local Area Connection.



- Click “Properties” and double click” Internet Protocol Version 4(TCP/IPv4)”.



- Setup target IP address. Here we setup fix IP 192.168.0.241.
- Then click OK” button.

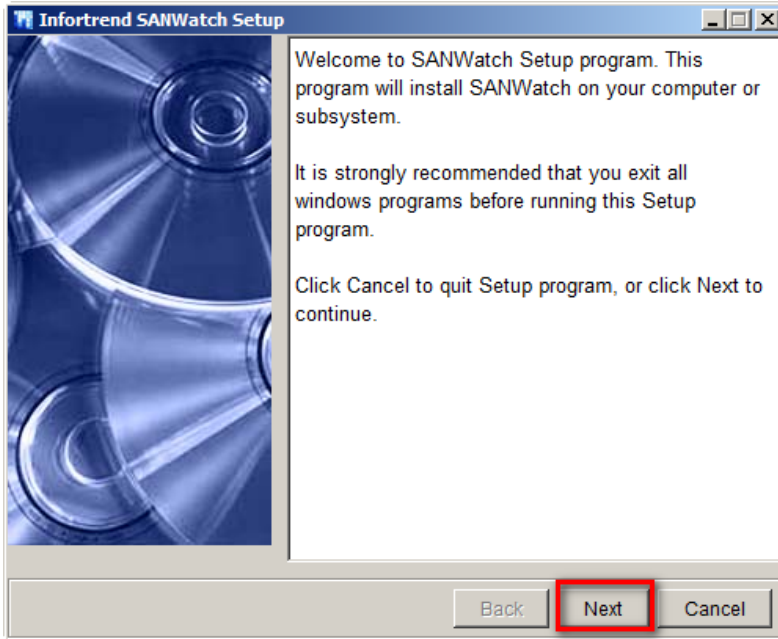


3.3 Install SANWatch.

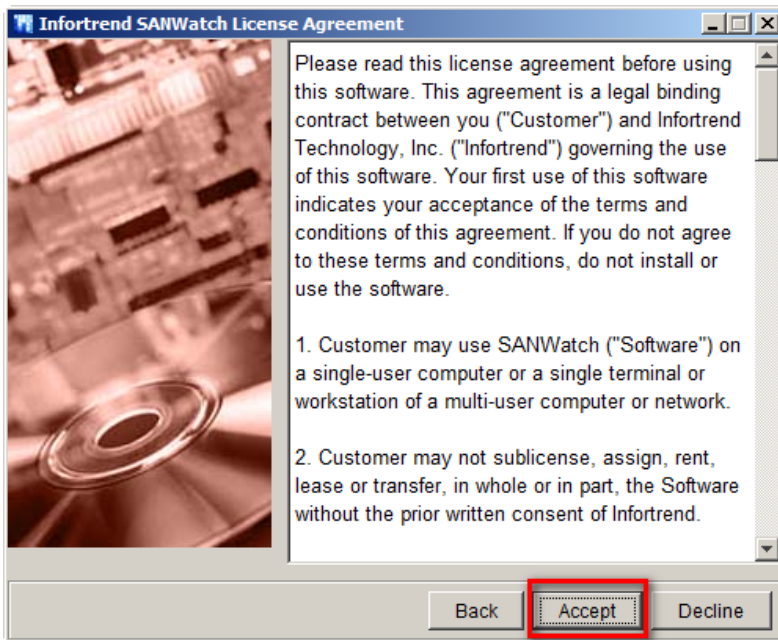
- Connect external CD drive to EMR9000.
- Put SANWatch CD in CD drive
- Open CD driver folder and click **setup.exe**

Name ^	Date modified	Type	Size
MACOS	3/28/2013 4:33 PM	File folder	
rootAgent.app	3/28/2013 4:33 PM	File folder	
Autorun	10/20/2005 2:29 PM	Setup Information	1 KB
client.pem	1/28/2003 2:31 AM	PEM File	2 KB
data	9/9/2011 10:58 AM	Compressed (zippe...	278,149 KB
getkey	7/2/2001 1:51 PM	Application	28 KB
IFTNative.dll	3/29/2004 6:56 PM	Application extension	32 KB
installshield.jar	9/9/2011 10:54 AM	JAR File	2,674 KB
j2pi.sh	7/2/2001 1:48 PM	SH File	12,970 KB
jre1.6.0_25-i586.bin	5/5/2011 2:19 PM	BIN File	21,075 KB
jre1.6.0_25-x64.bin	5/5/2011 2:19 PM	BIN File	20,684 KB
linux.sh	5/5/2011 2:32 PM	SH File	5 KB
mac.app	12/23/2010 5:24 PM	Compressed (zippe...	16 KB
mac.root	10/8/2004 10:01 AM	Compressed (zippe...	2 KB
policy.jav	9/28/2001 11:40 AM	JAV File	1 KB
random.pem	10/3/2003 5:52 PM	PEM File	2 KB
rootca.pem	1/28/2003 2:31 AM	PEM File	1 KB
setup	10/12/2007 9:36 AM	Application	140 KB
unix.sh	12/29/2008 5:42 PM	SH File	2 KB
unix-agent.sh	9/30/2010 11:46 AM	SH File	3 KB

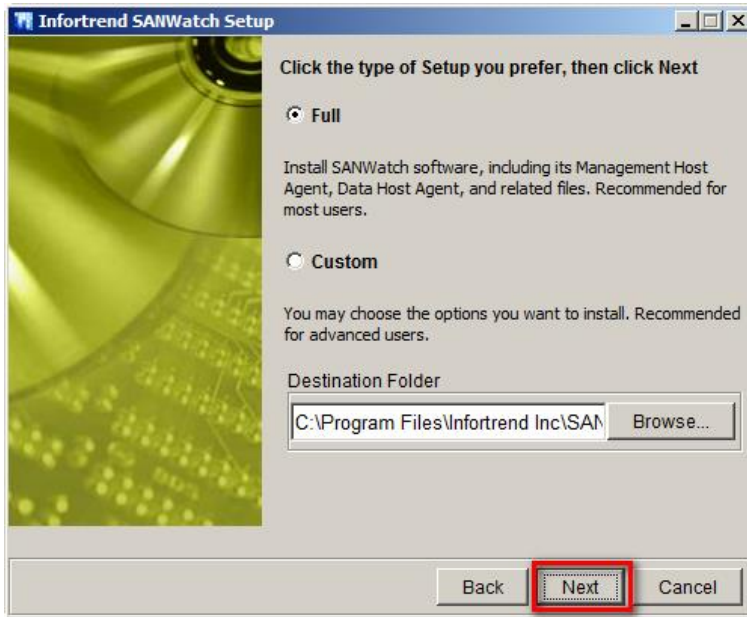
- Click "Next" button.



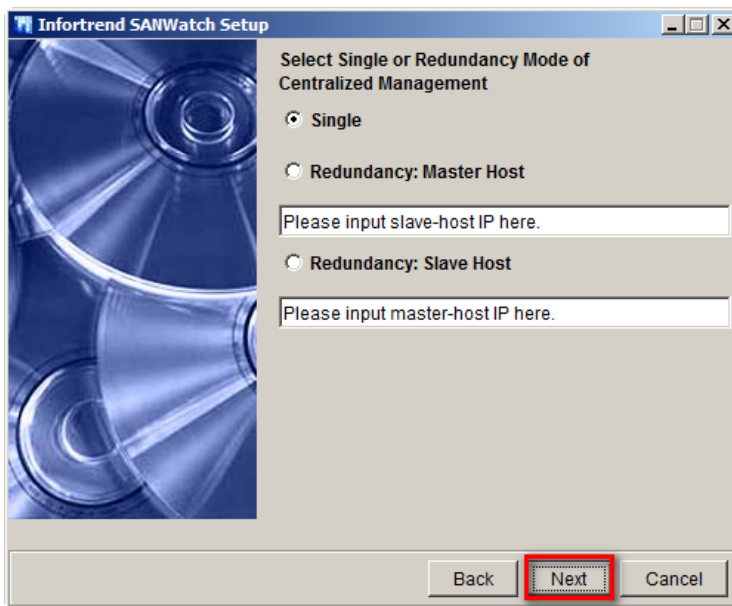
- Click "Accept" button.



- Click "Next" button.



- Select Single and click “Next” button.



- Wait until the end of SANWatch installation.



- Click "OK" button to restart EMR9000.



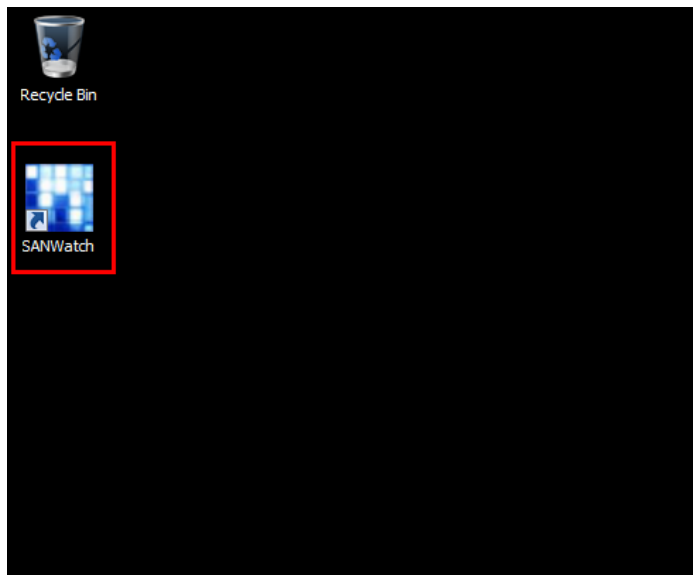
- Click "Finish" button.



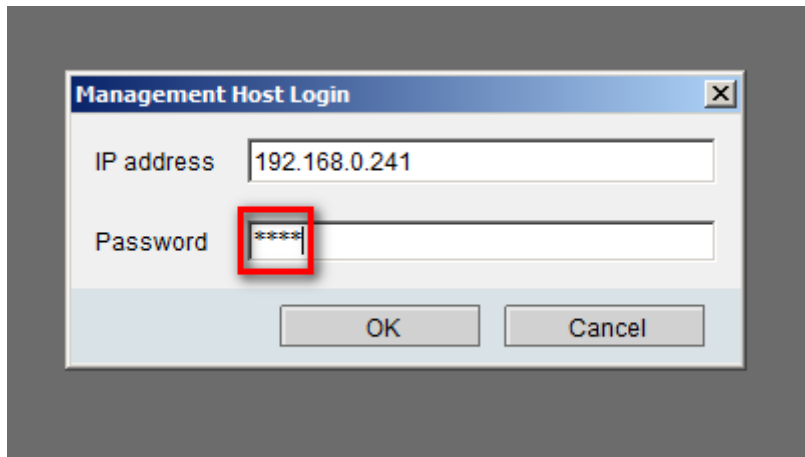
4. Configure RAID from SANWatch

4.1 Login SANWatch and storage manager

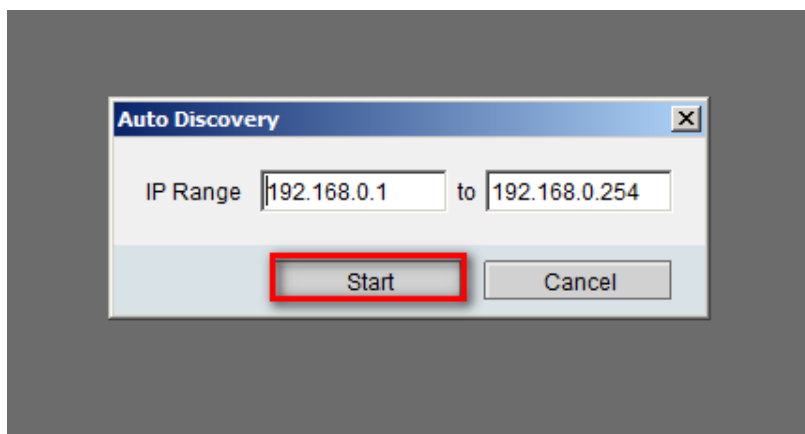
- After rebooting, login the EMR9000.
- Double-click SANWatch icon.



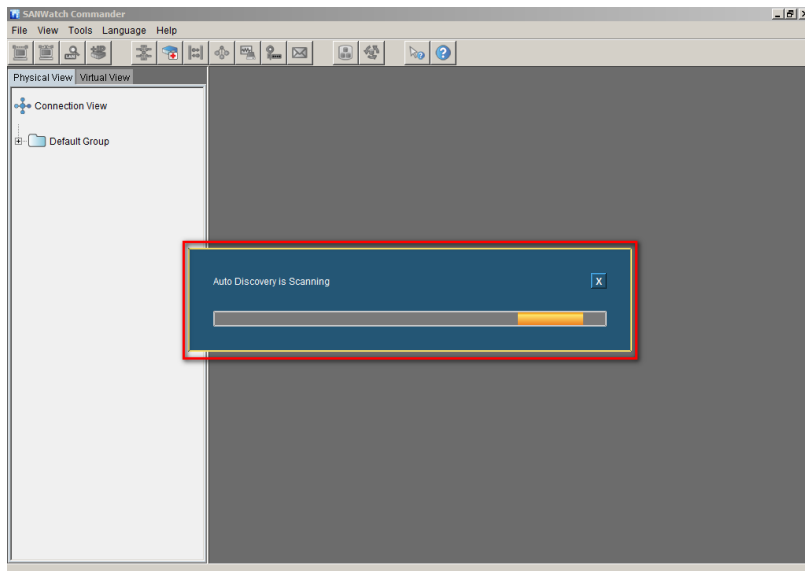
- Input EMR9000 IP address and the password is **root**.

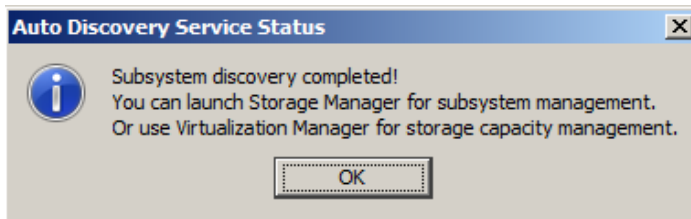


- Input the IP scan range and click **Start** button to scan storage.

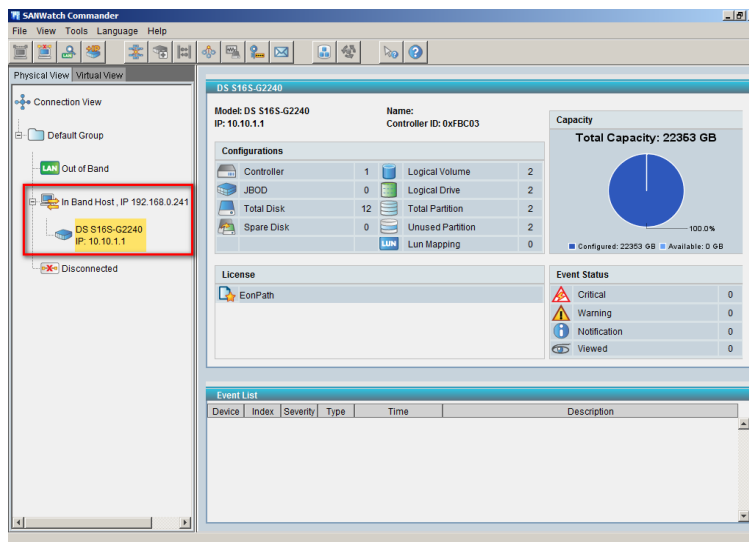


- Wait until the end of auto-scan process.

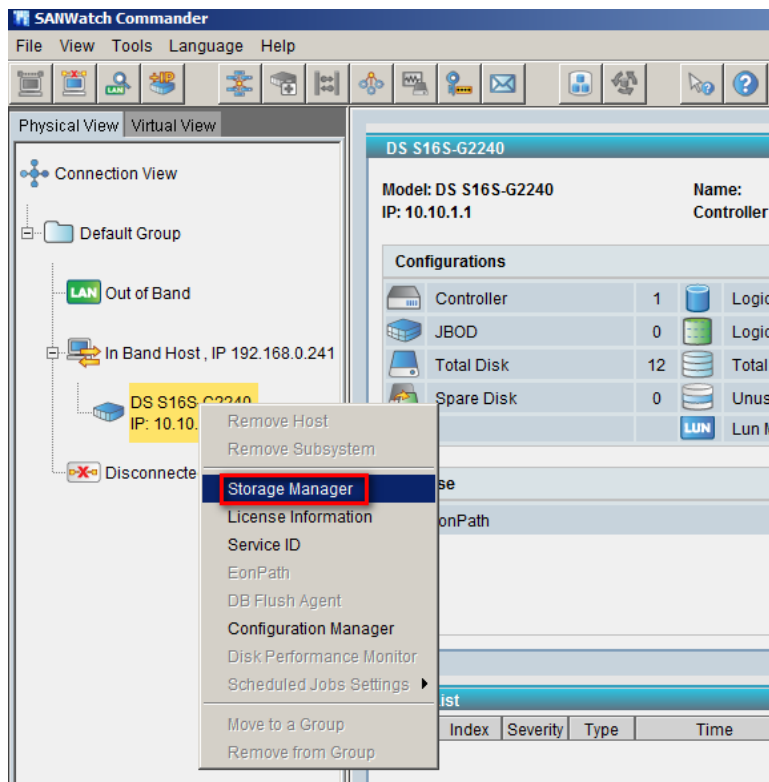




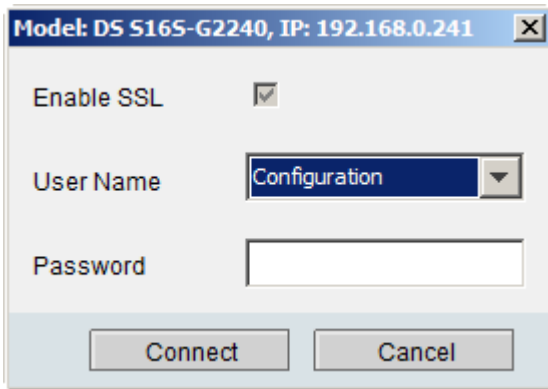
- After auto-scan, the storage will be listed in the left panel of SANWatch.



4.2 Right click storage icon and select “Storage Manager”.



- Select User Name “Configuration” and click “Connect” button.

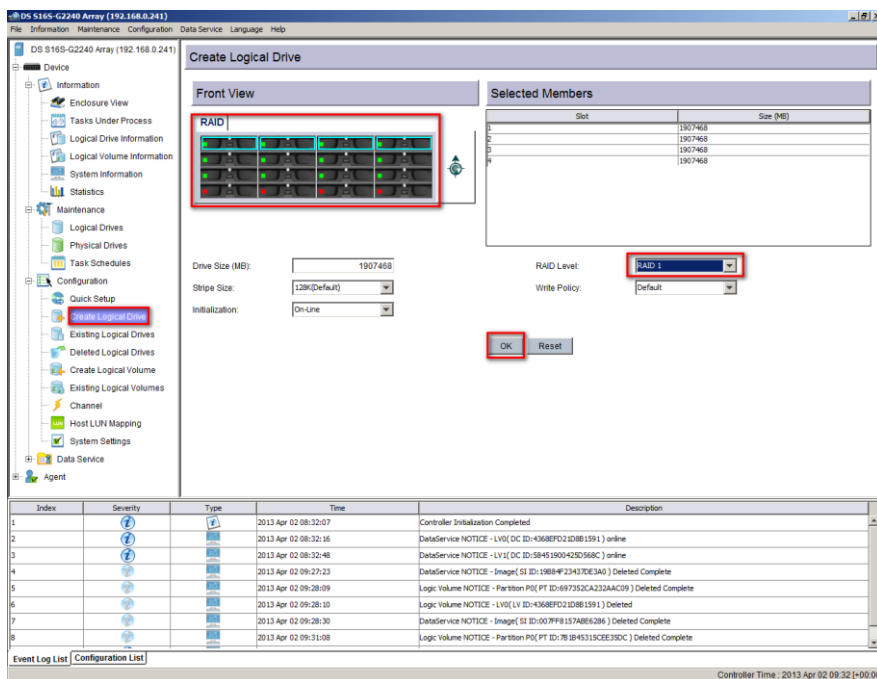


4.3 Here we will configure the RAID system based on below spec.

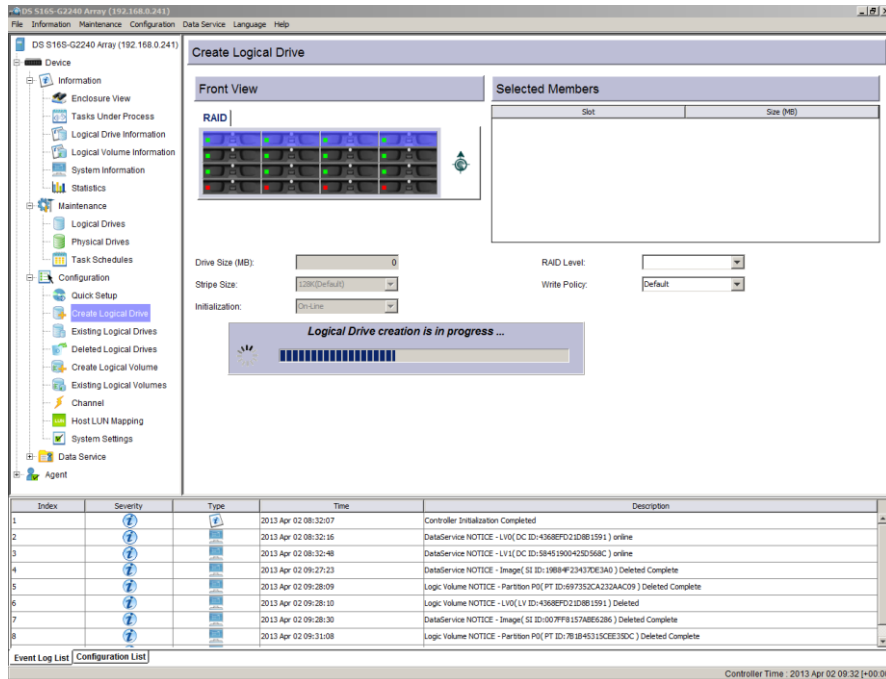
Volume Name	RAID Type	Number of disks
Volume 1(Live Disk)	RAID 1	4
Volume 2(Archive Disk)	RAID 6	8

4.4 Create Logical Drive

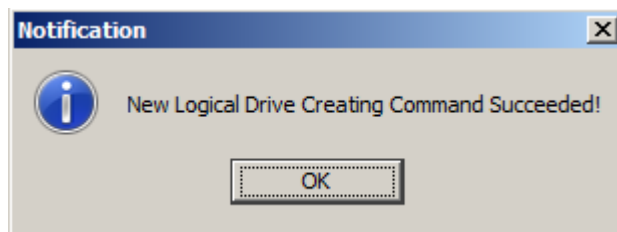
- Go to “Configuration > Create Logical Drive”.
- Select 4 x hard disks and choice “RAID 1” and click “OK” button.



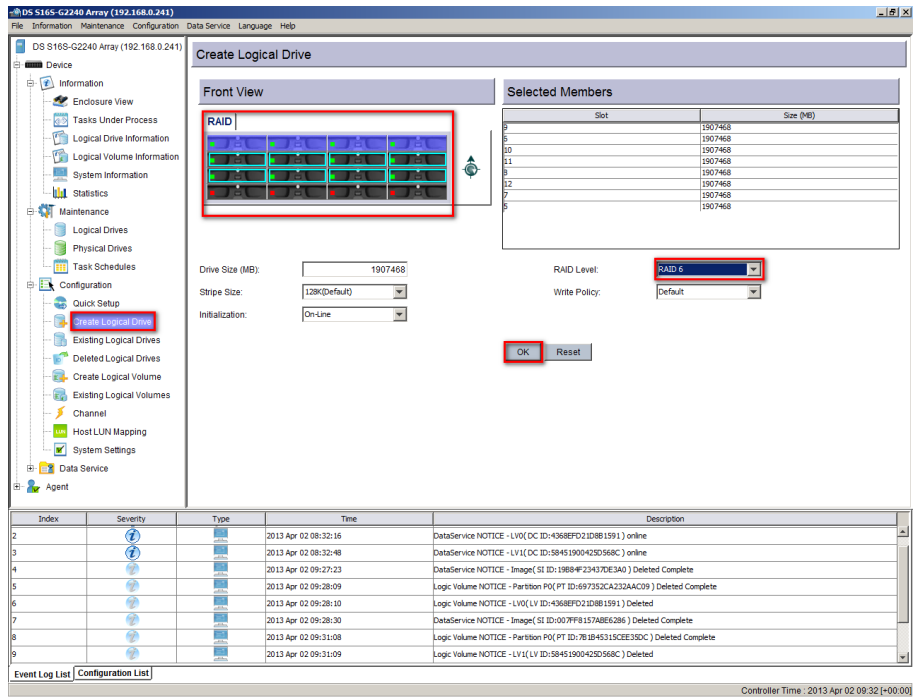
- Wait until end of logical drive creation.



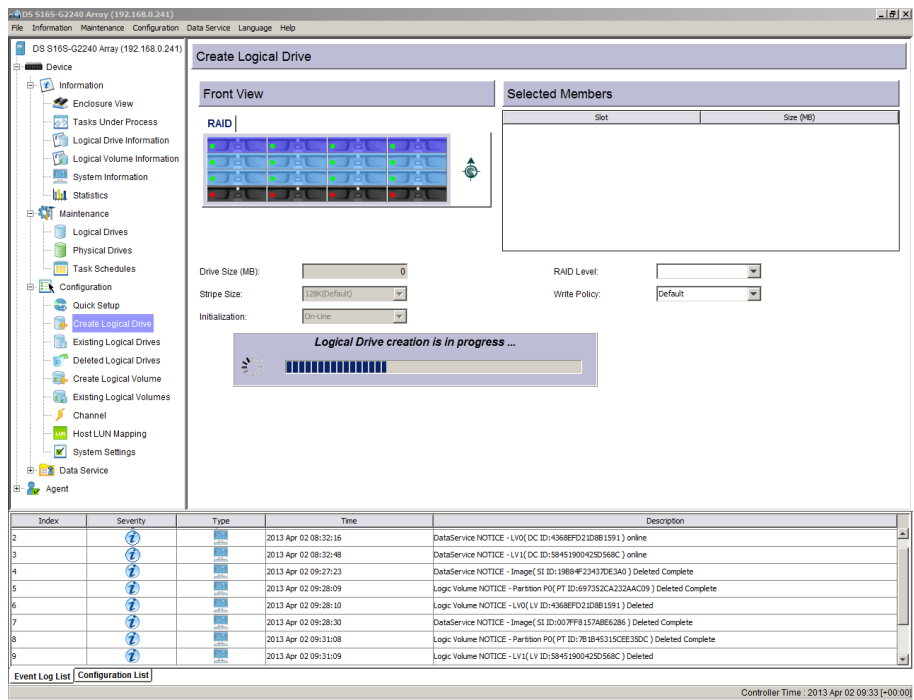
- Click “OK” button to finish the logical drive creation.



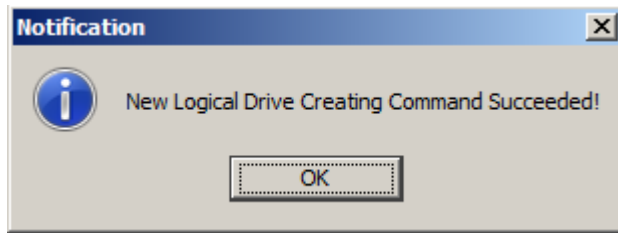
- Go to “Configuration > Create Logical Drive”.
- Select 8 hard disks and choice “RAID 6” and click “OK” button.



- Wait until end of logical drive creation.

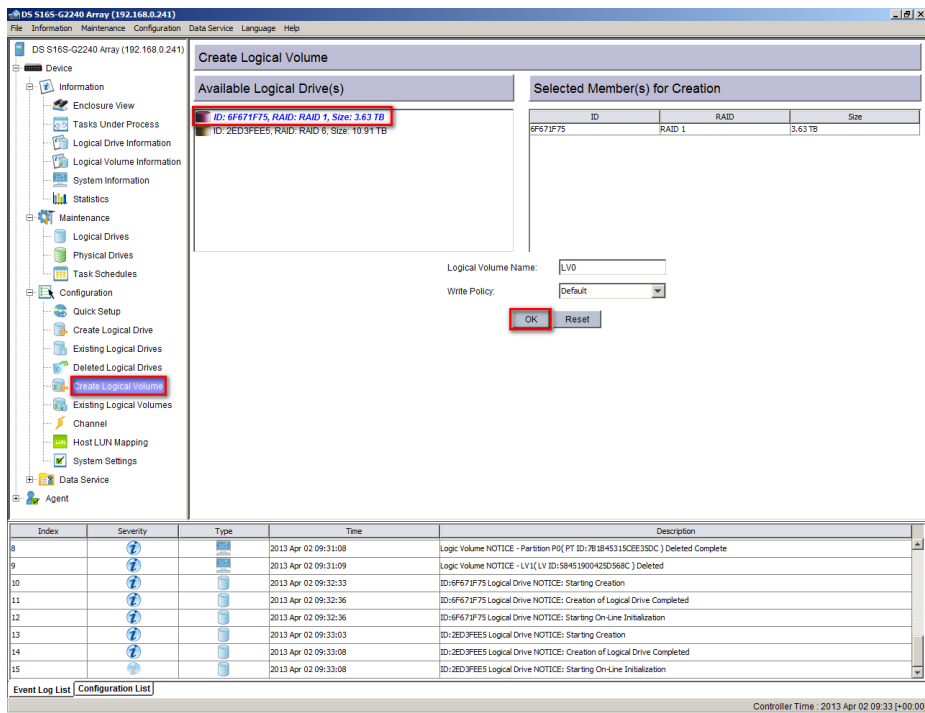


- Click "OK" button to finish the logical drive creation.

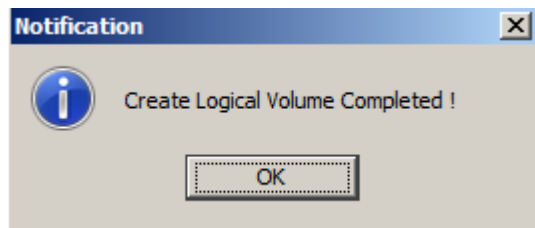


4.5 Create Logical Volume

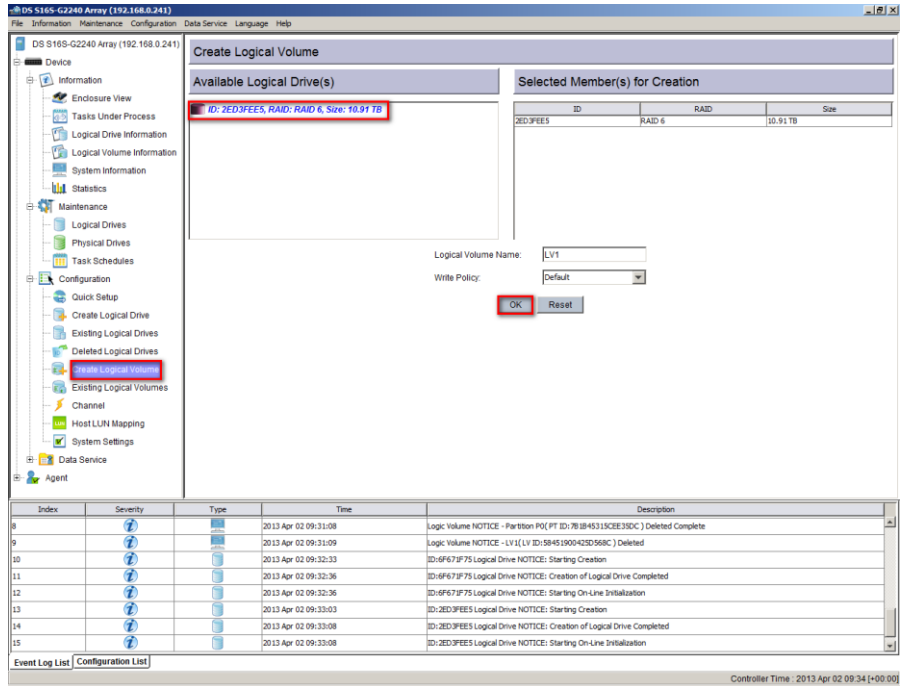
- Go to “Configuration > Create Logical Volume” and select RAID 1 logical drive and click “OK” button to start creating logical volume.



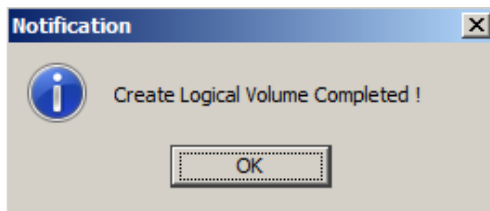
- Click “OK” button to finish the logical volume creation.



- Go to “Configuration > Create Logical Volume” and select RAID 6 logical drive and click “OK” button to start creating logical volume.

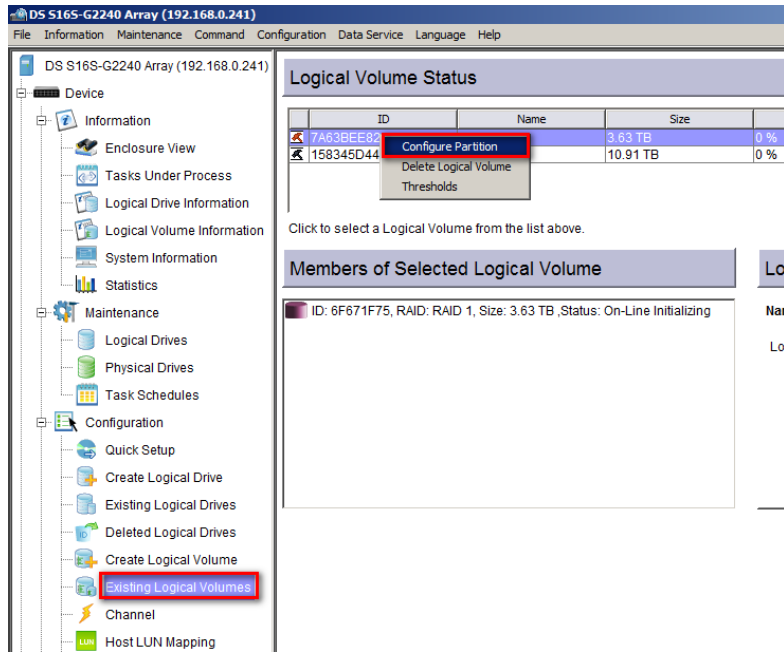


- Click “OK” button to finish the logical volume creation.

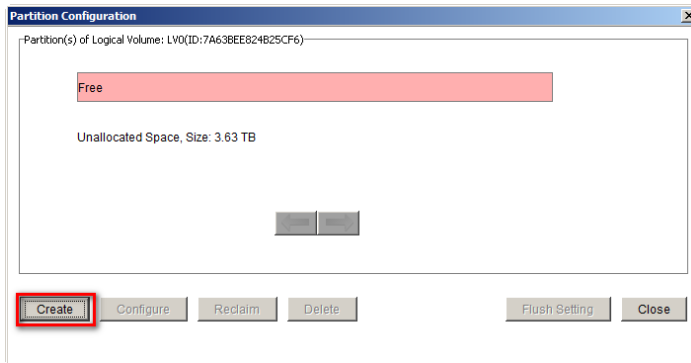


4.6 Create Partition

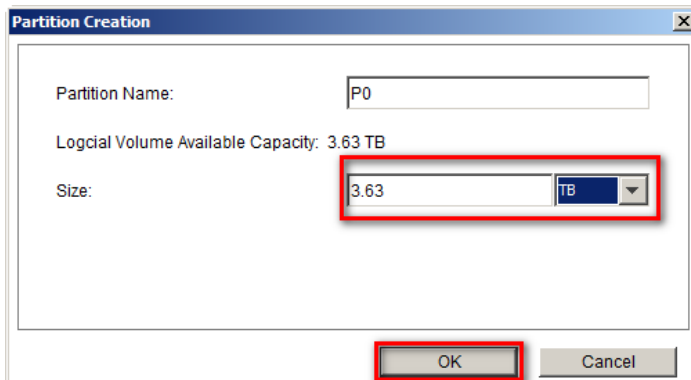
- Go to “Configuration>Existing Logical Volume” and right click first RAID 1 logical volume.



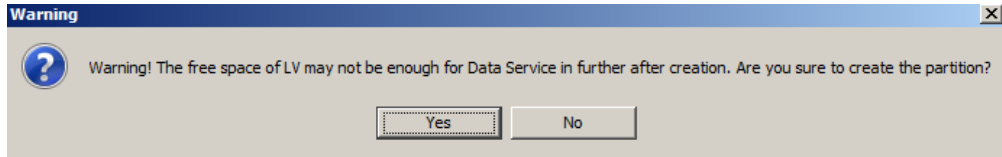
- Click “Create” button.



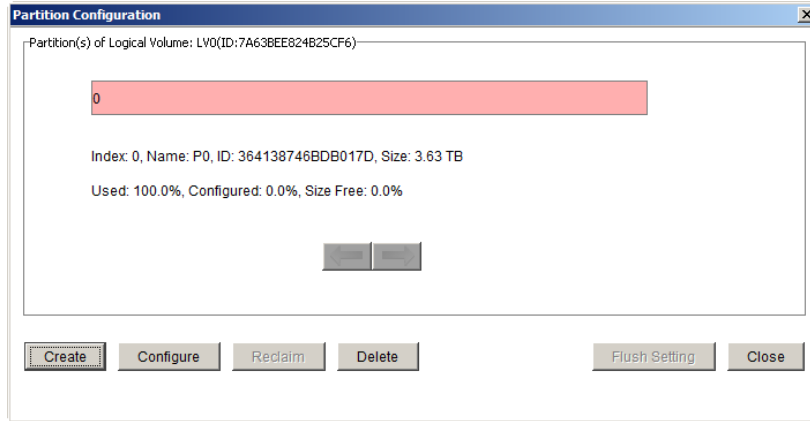
- Input the partition size. We suggest using up all available capacity and clicking “OK” button.



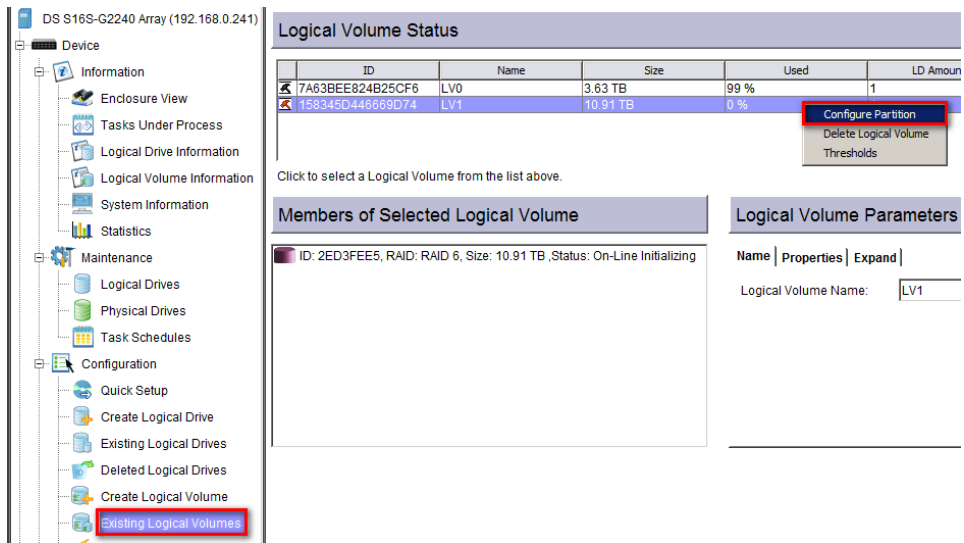
- Press “Yes” button to skip the reminder.



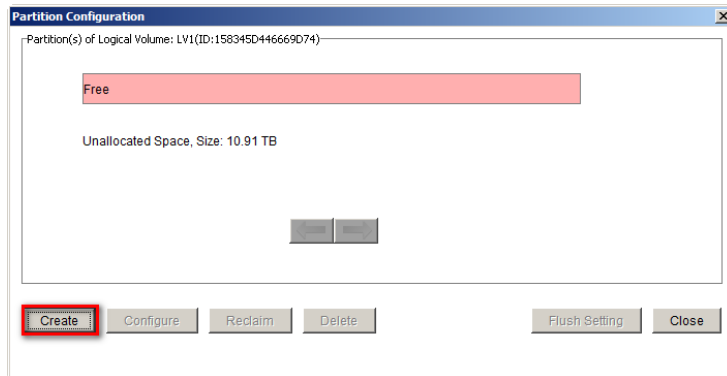
- Click “Close” button to finish this task.



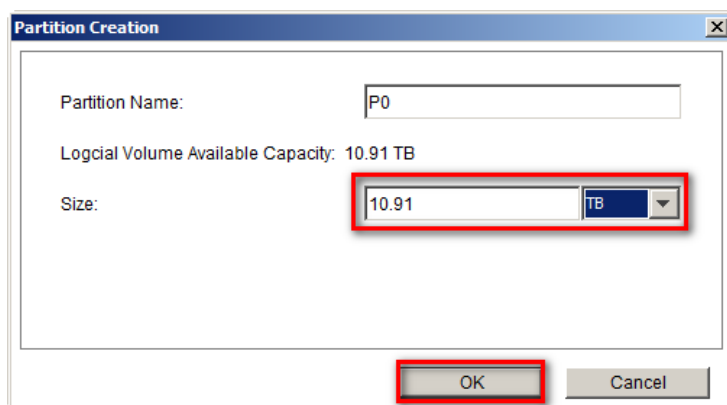
- Go to “Configuration>Existing Logical Volume” and right click another RAID 6 logical volume.



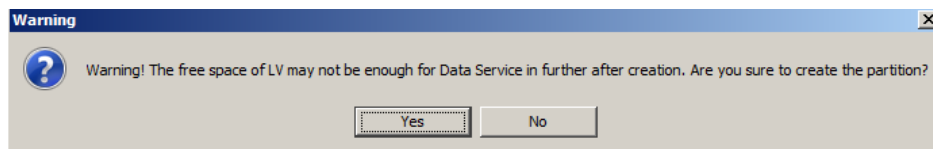
- Click “Create” button.



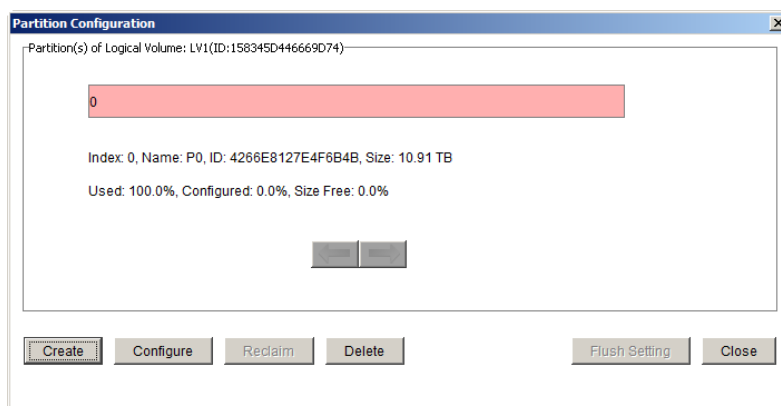
- Input the partition size. We suggest using up all available capacity and clicking “OK” button.



- Press “Yes” button to skip the reminder.

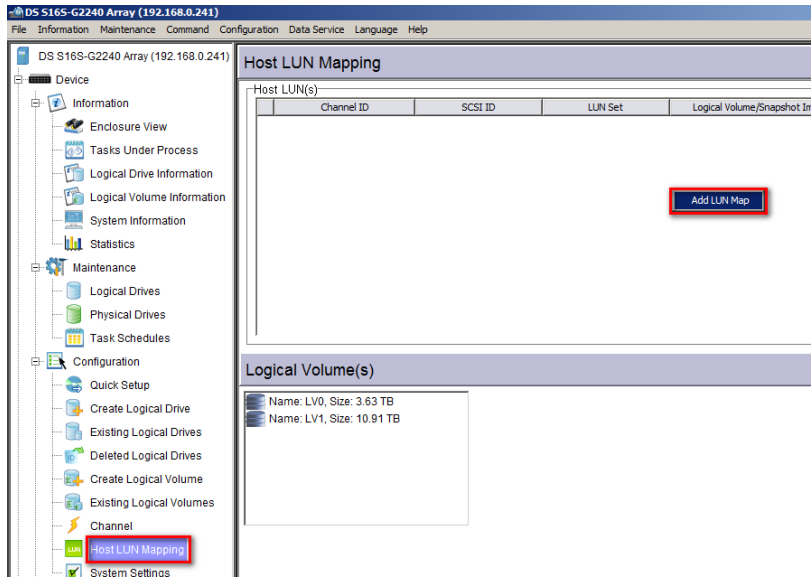


- Click “Close” button to finish this task.

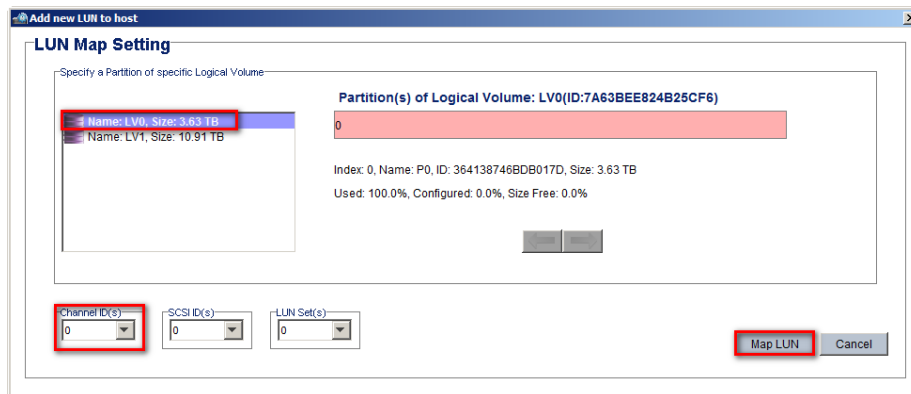


4.7 Create LUN mapping

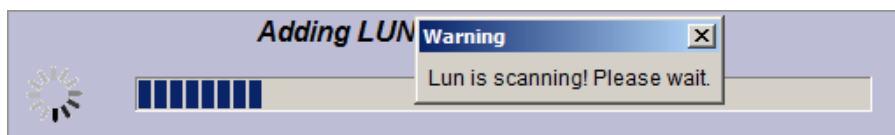
- Go to “Configuration > Host LUN Mapping” and right click to “Add LUN Mapping”.



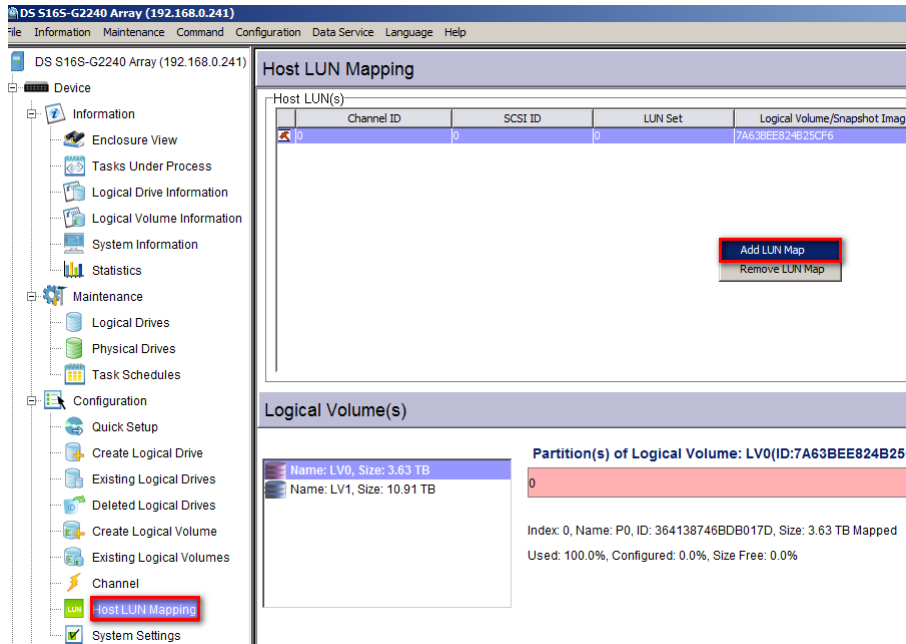
- Select first RAID 1 partition and set “Channel ID(s)” to 0. Then click “Map LUN” button to create LUN mapping



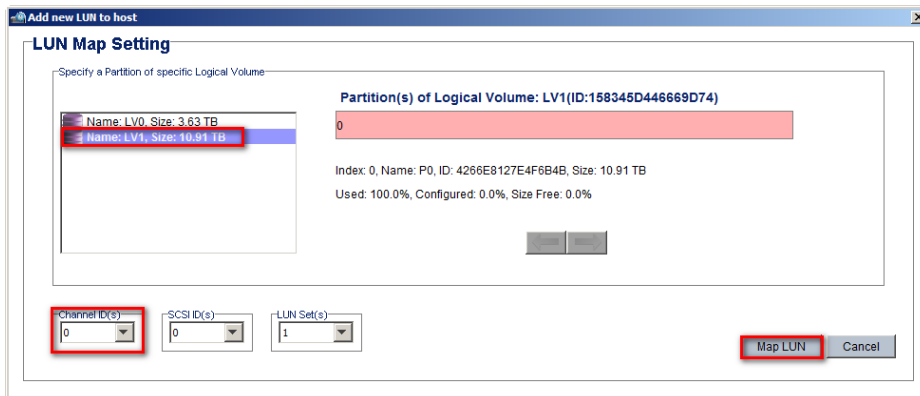
- Wait until end of “LUN Mapping” creation.



- Right click “Host LUN(s)” panel and click “Add LUN Mapping”.



- Select second RAID 6 partition and set “Channel ID(s)” to 0. Then click “Map LUN” button to create LUN mapping. Please note that the LUN Set(s) ID is different with previous one.



- Wait until end of “LUN Mapping” creation..



Channel ID	SCSI ID	LUN Set	Logical Volume/Snapshot Image ID	Partition	Size
0	0	1	15834D46669D74	0	10.91 TB

Index	Severity	Type	Time	Description
14	Information	Notice	2013 Apr 02 09:33:08	DS:DEDUPES Logical Drive NOTICE: Creation of Logical Drive Completed
15	Information	Notice	2013 Apr 02 09:33:08	DS:DEDUPES Logical Drive NOTICE: Starting On-Line Initialization
16	Information	Notice	2013 Apr 02 09:34:00	Logic Volume NOTICE - Volume(LV ID:7A638EE824B25CF6) Creation Complete
17	Information	Notice	2013 Apr 02 09:34:47	Logic Volume NOTICE - Volume(LV ID:15834D46669D74) Creation Complete
18	Information	Notice	2013 Apr 02 09:36:18	Logic Volume NOTICE - Partition(P0(PT ID:364138746DB017D)) Creation Complete
19	Information	Notice	2013 Apr 02 09:36:33	DataService NOTICE - Image(SI ID:78784CF709E4C870) Creation Complete
20	Information	Notice	2013 Apr 02 09:38:57	Logic Volume NOTICE - Partition(P0(PT ID:43668127E4F6D4E)) Creation Complete
21	Information	Notice	2013 Apr 02 09:39:27	DataService NOTICE - Image(SI ID:118E2453040C889F7) Creation Complete

4.8 Close SANWatch and click “Yes” button.

Question

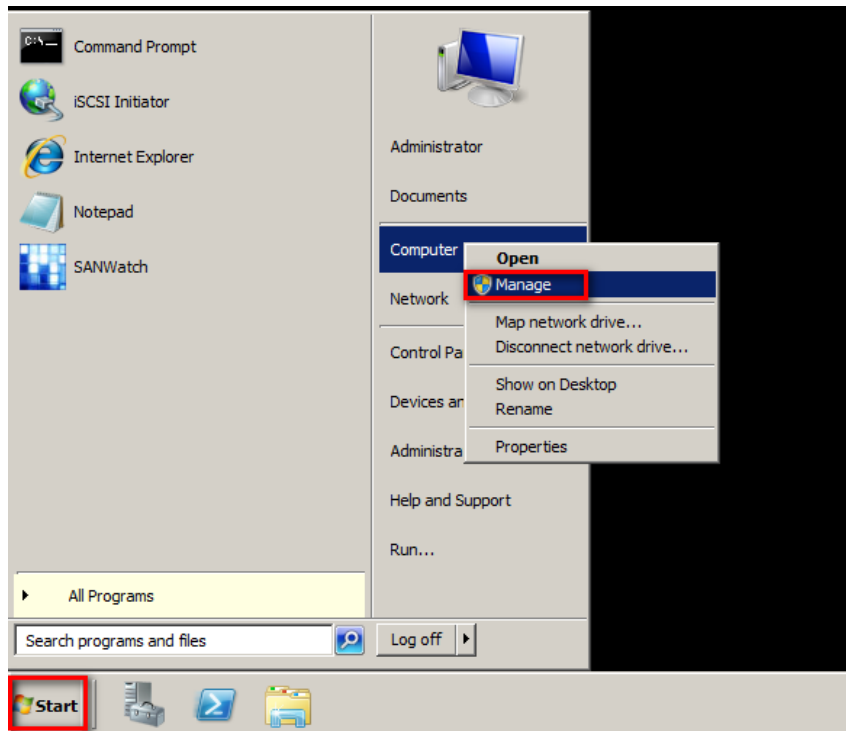
System configuration has been updated. Do you want to commit the changes (from NVRAM to disk)?

Yes No

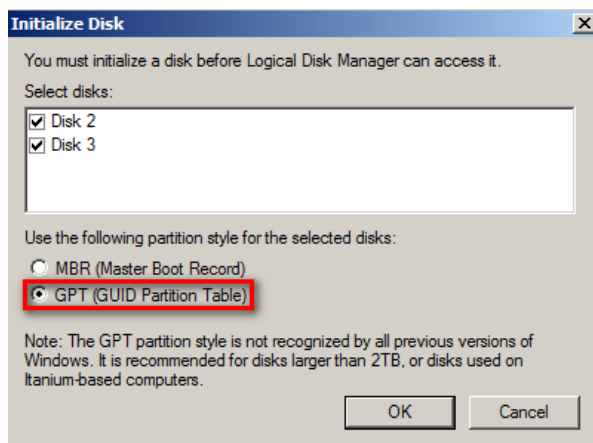
5. Format RAID Volume on Windows

5.1 Go to disk manager

- Click “Start” button, right click “Computer” item and select “Manage” item.

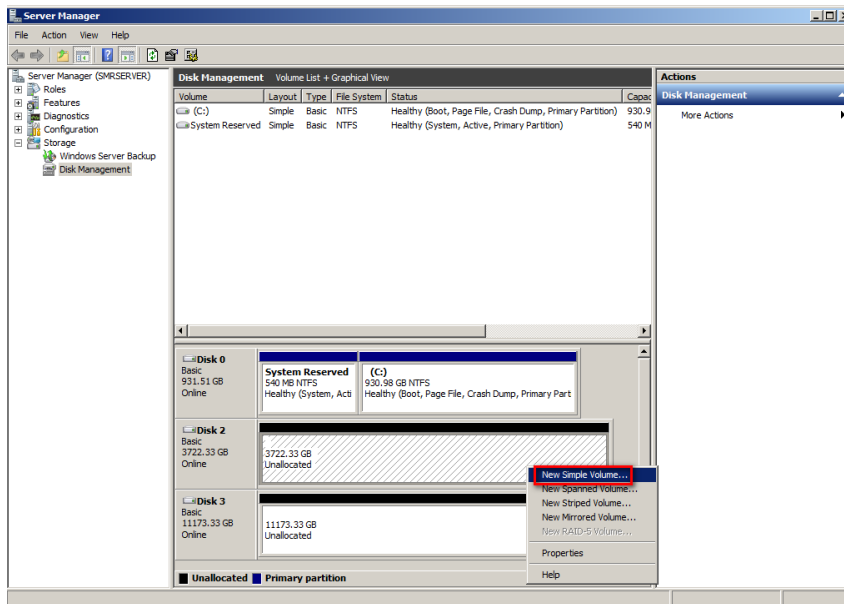


- Select Disk Management
- Select “GPT” and click “OK” button. (The GPT volume can support more than 2TB partition)

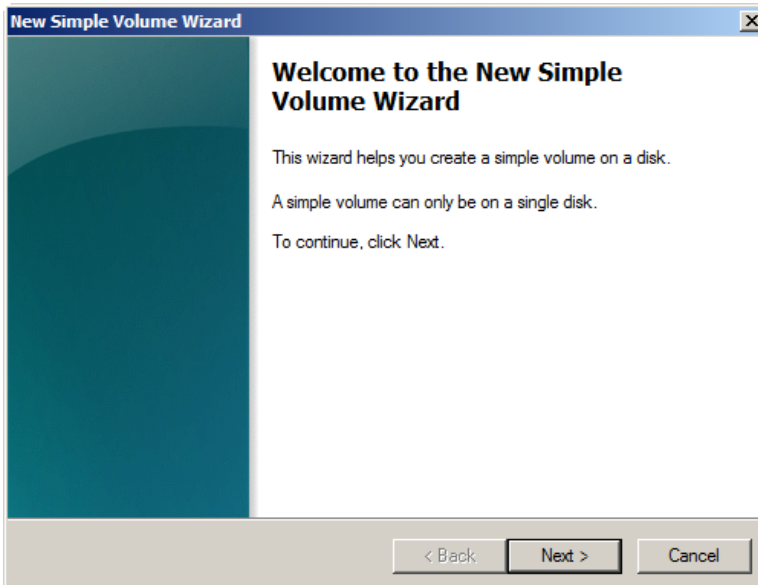


5.2 Format RAID 1 disk.

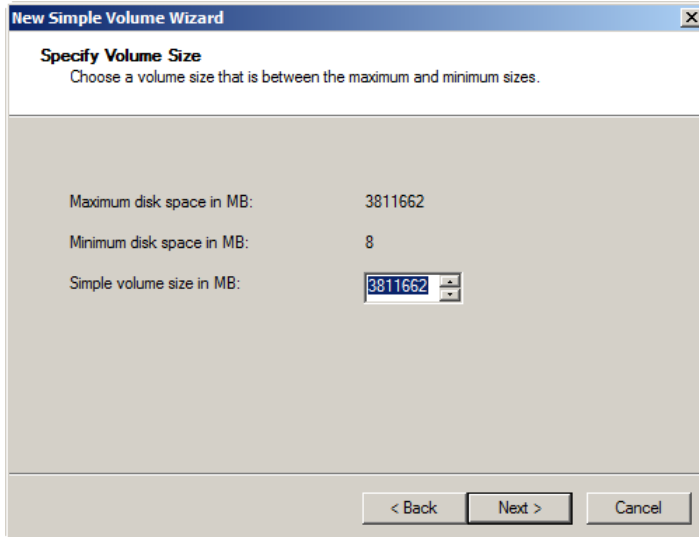
- Right click first unallocated disk and select “New Simple Volume”.



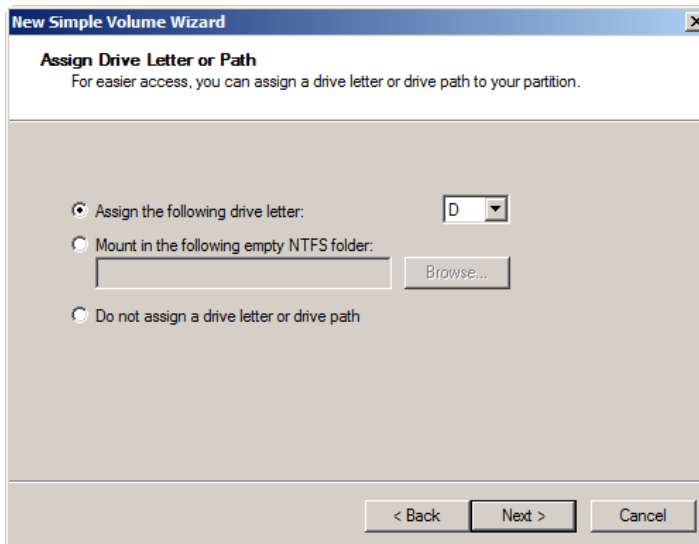
- Click “Next” Button.



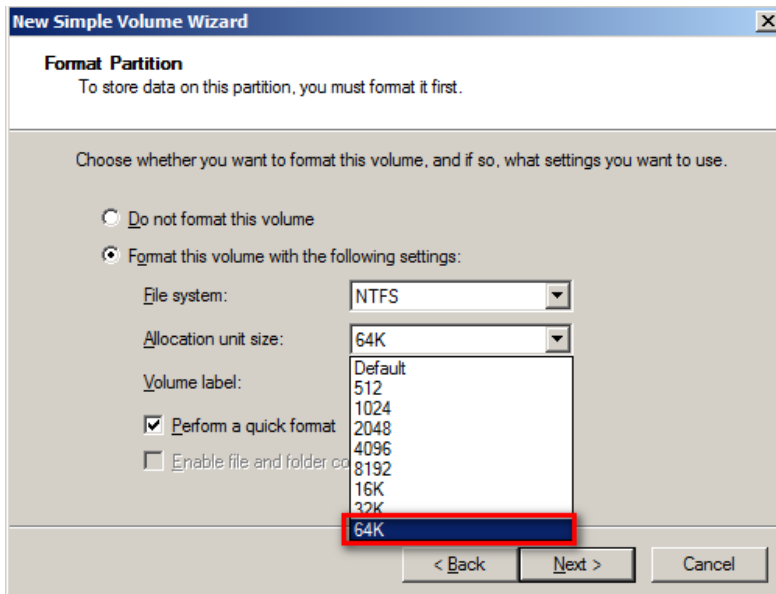
- Click “Next” Button.



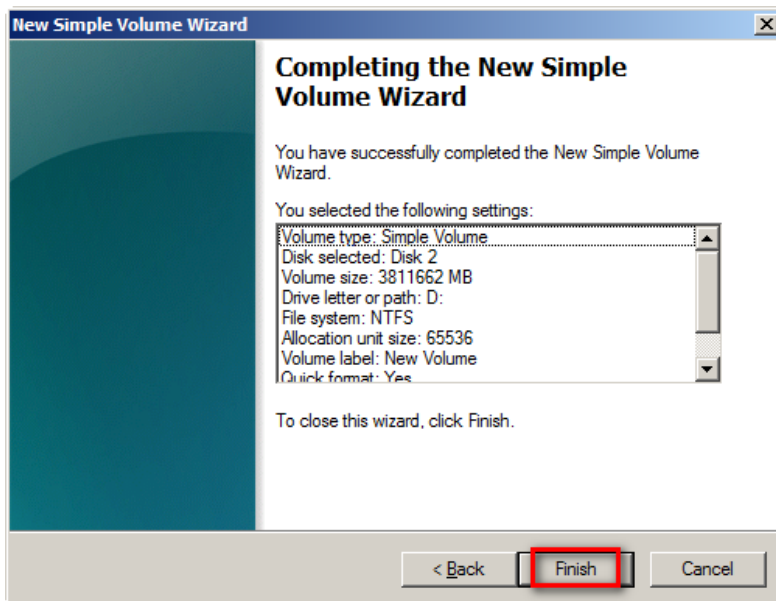
- Click "Next" Button.



- Select "Allocation unit size" to 64K and click "Next" button.

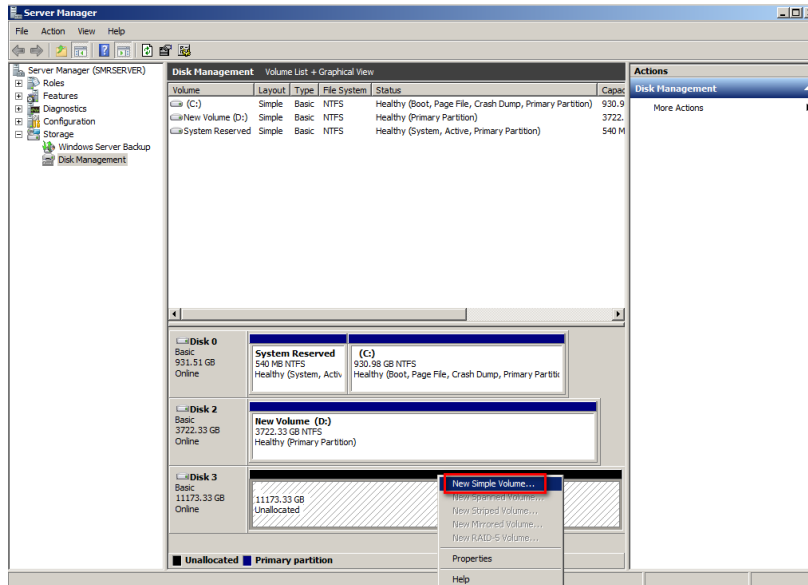


- Click “Finish” button.

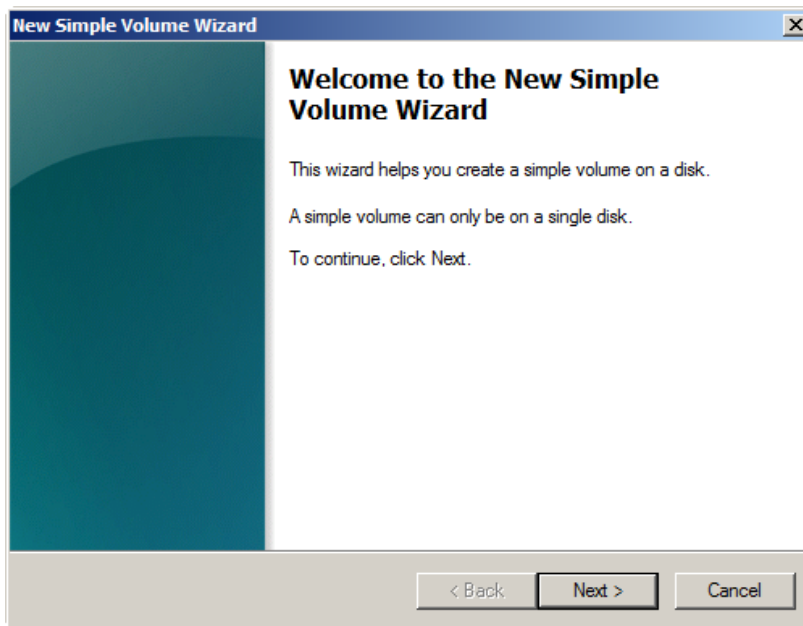


5.3 Format RAID 6 disk.

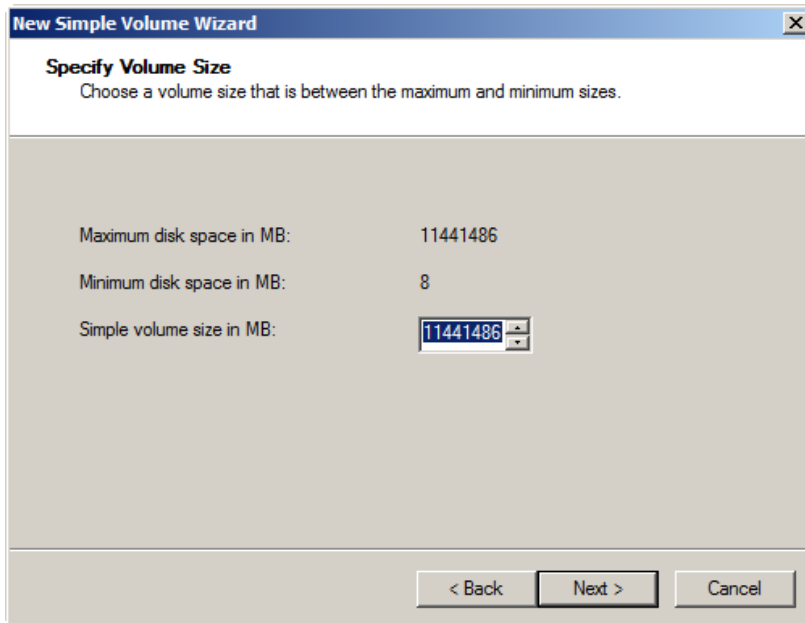
- Right click first unallocated disk and select “New Simple Volume”.



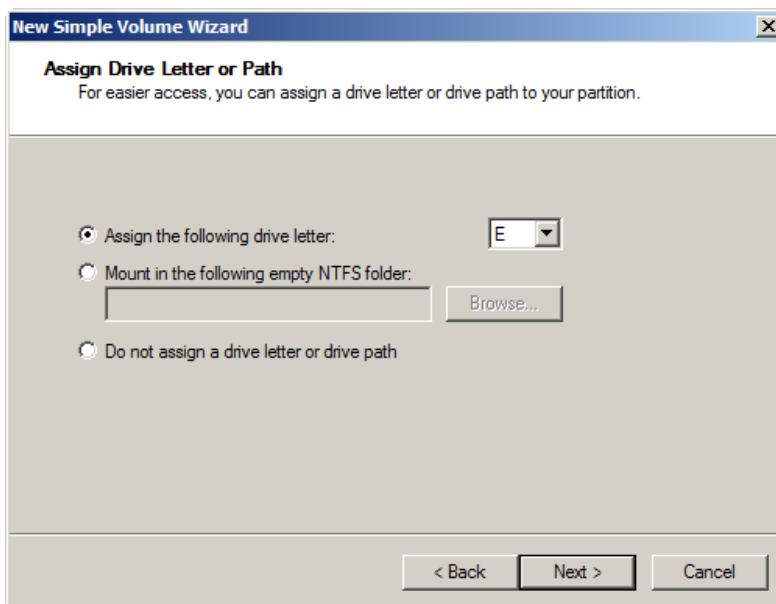
- Click "Next" Button.



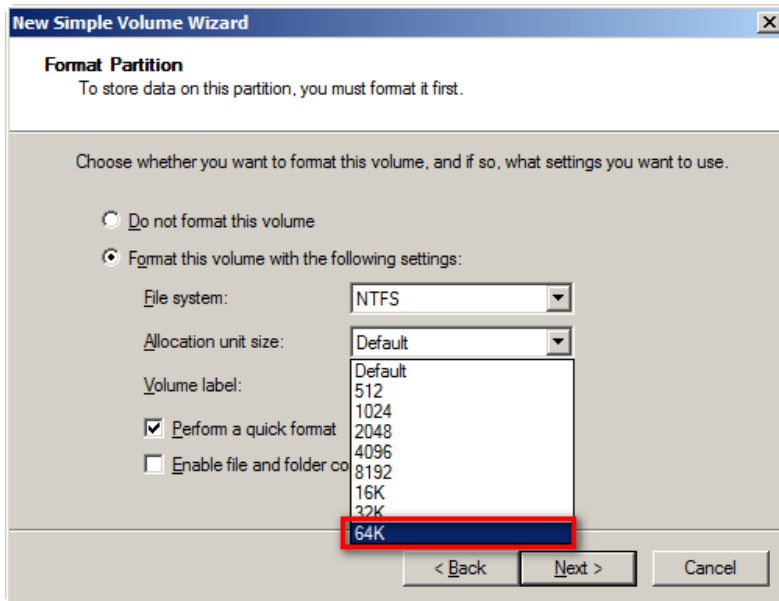
- Click "Next" Button.



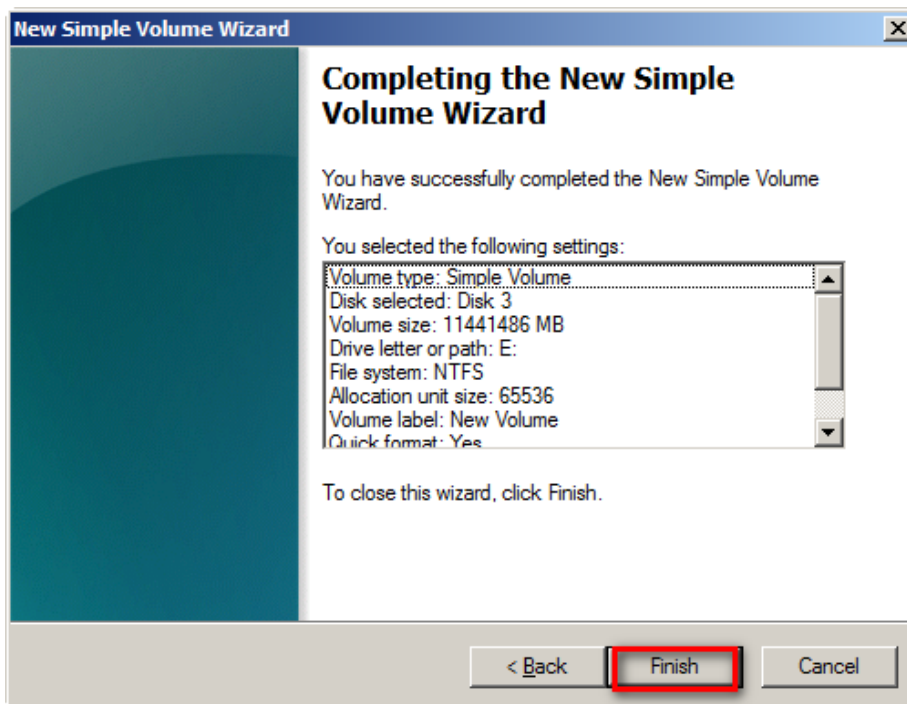
- Click "Next" Button.



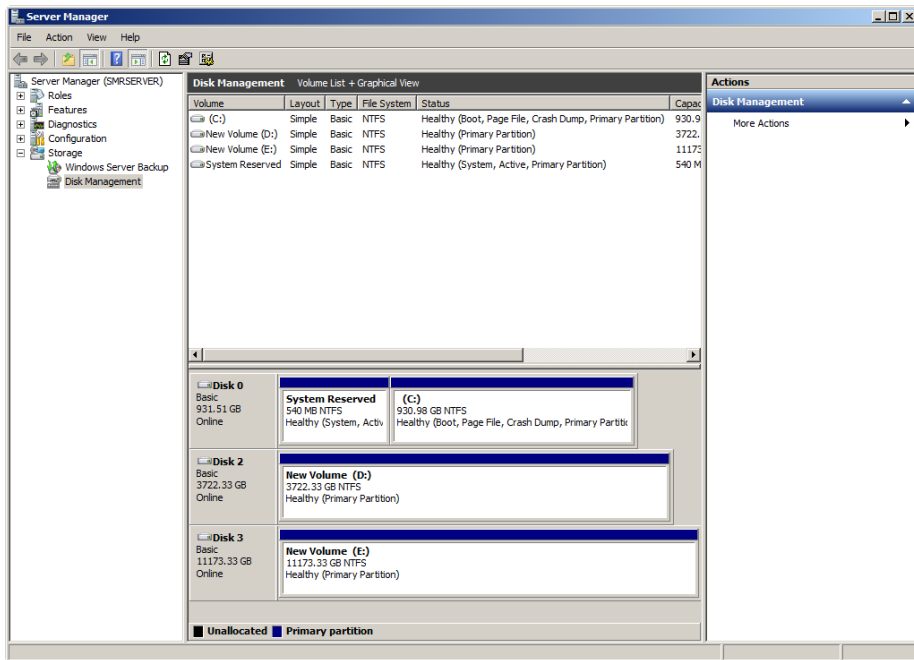
- Select "Allocation unit size" to 64K and click "Next" button.



- Click “Finish” button.



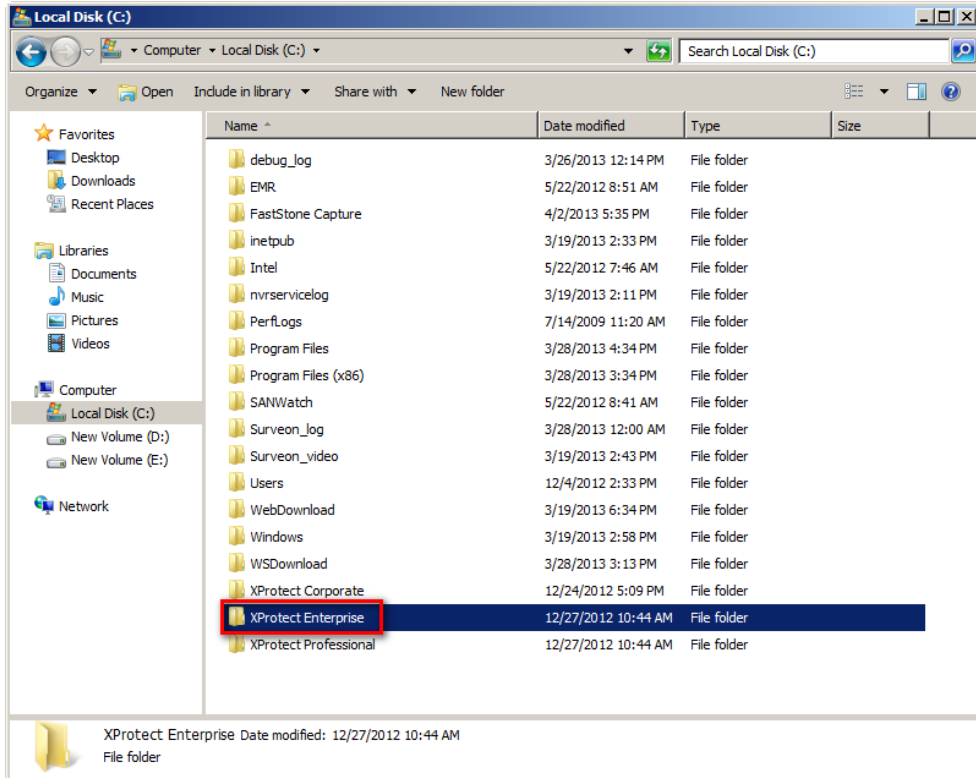
5.4 Both RAID 1 and RAID 6 disks have been formatted.



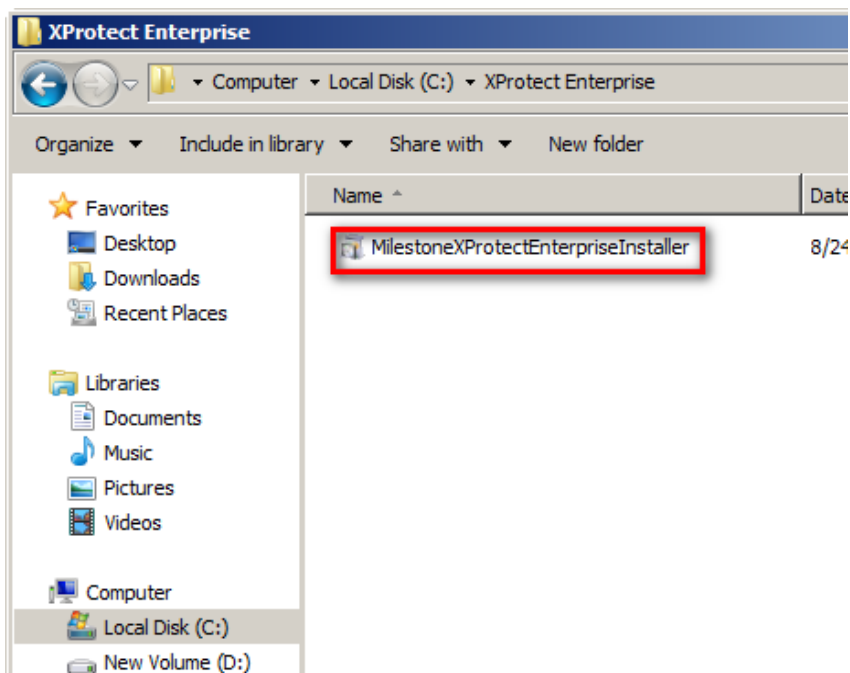
6. Setup Milestone xProtect

6.1 Install Milestone

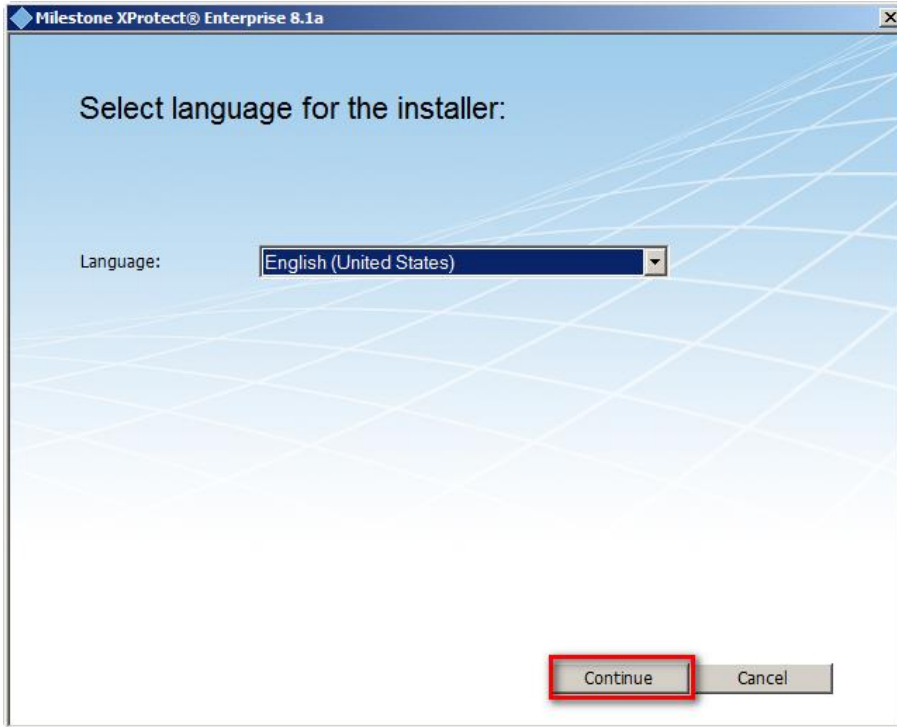
- Open file explorer.
- Go to C drive and user will see three Milestone versions
 - ◆ xProtect Corporate
 - ◆ xProtect Enterprise
 - ◆ xProtect Professional
- Here we install xProtect Enterprise to be a example.



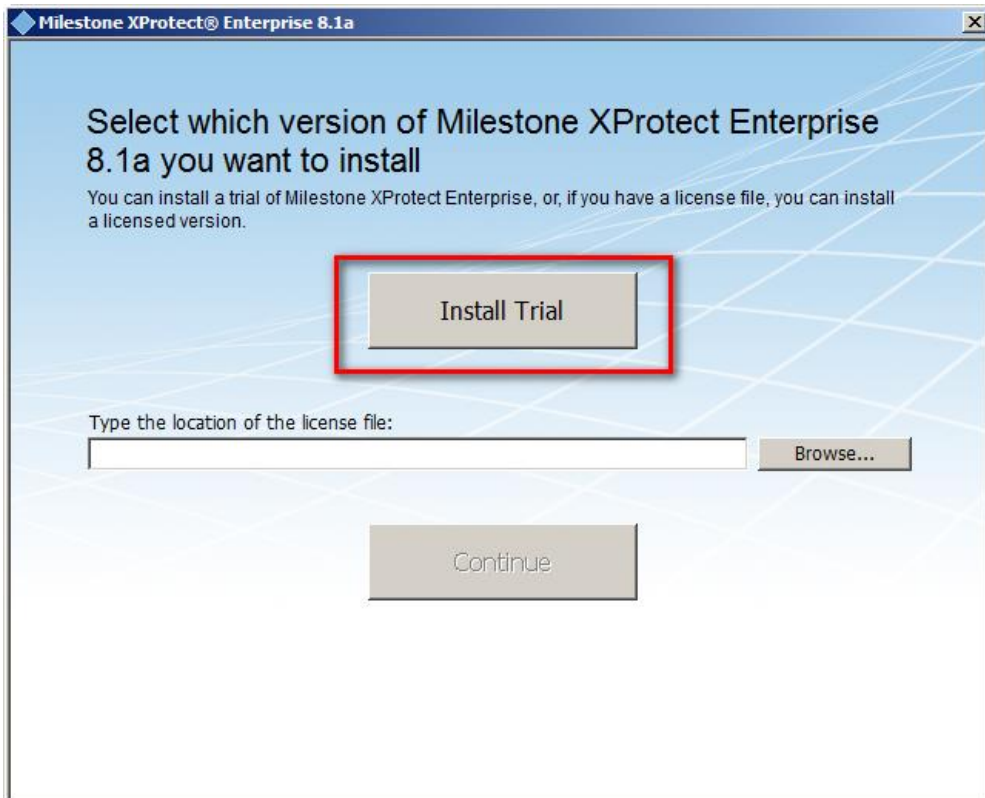
- Double click "MilestoneXProtectEnterpriseInstaller"



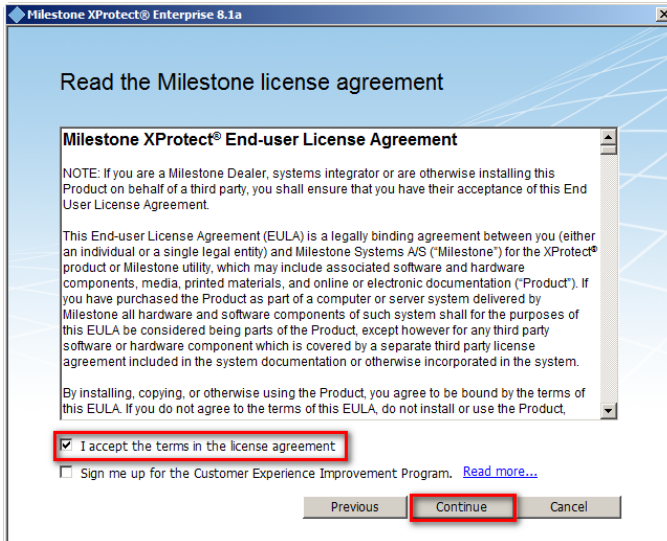
- Click "Continue" button.



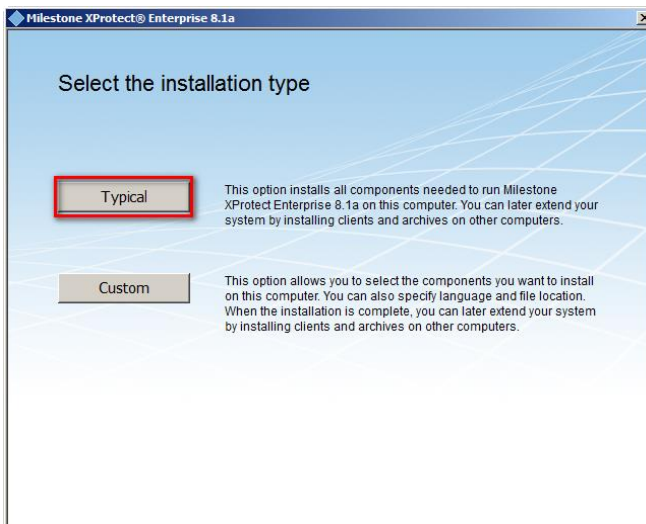
- Click "Install Trial" button.



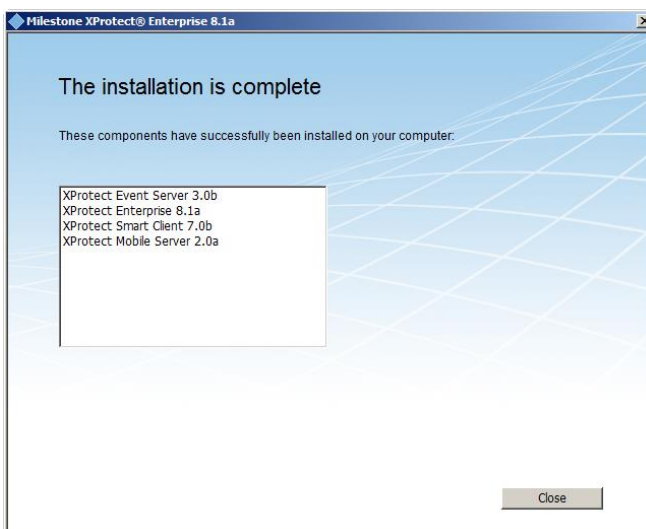
- Select "I accept the terms in the license agreement" and click "Continue" button.



- Click “Typical” button.



- Wait until the end of Milestone installation and click “Close” button.

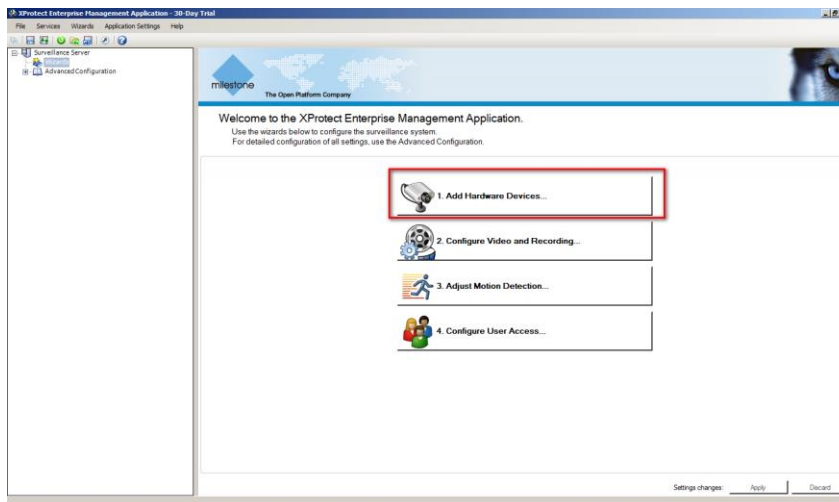


6.2 Configure live disk and archive disk in Milestone

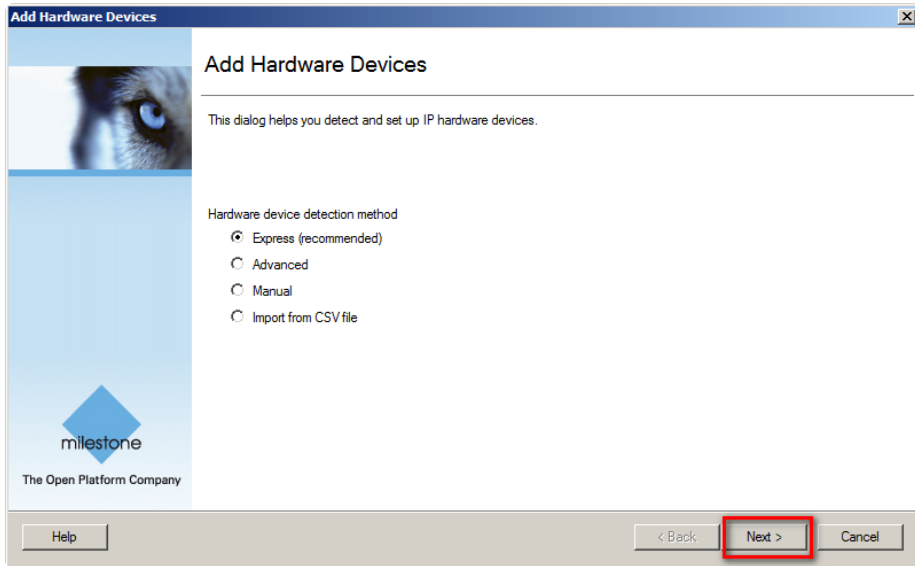
- Double click Milestone Enterprise.



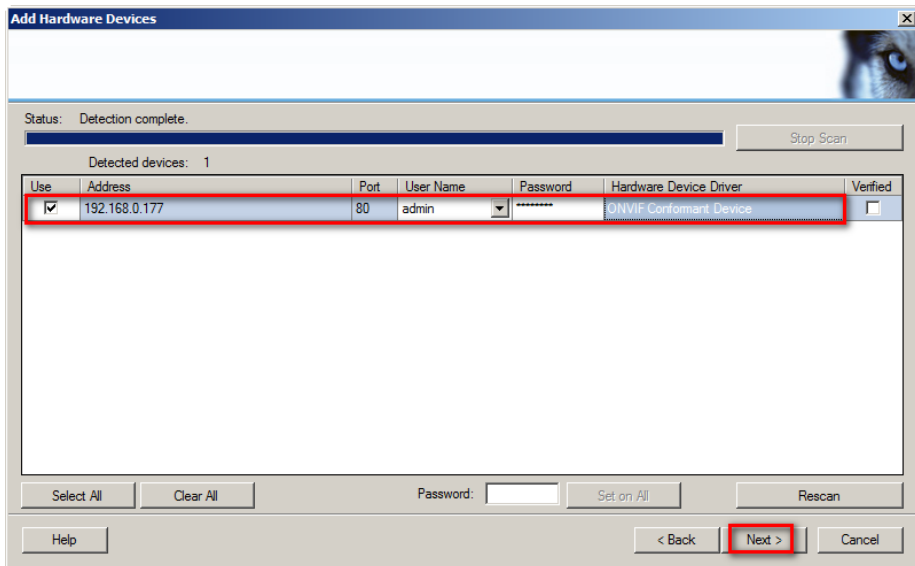
- Click “Add Hardware Devices...” button.



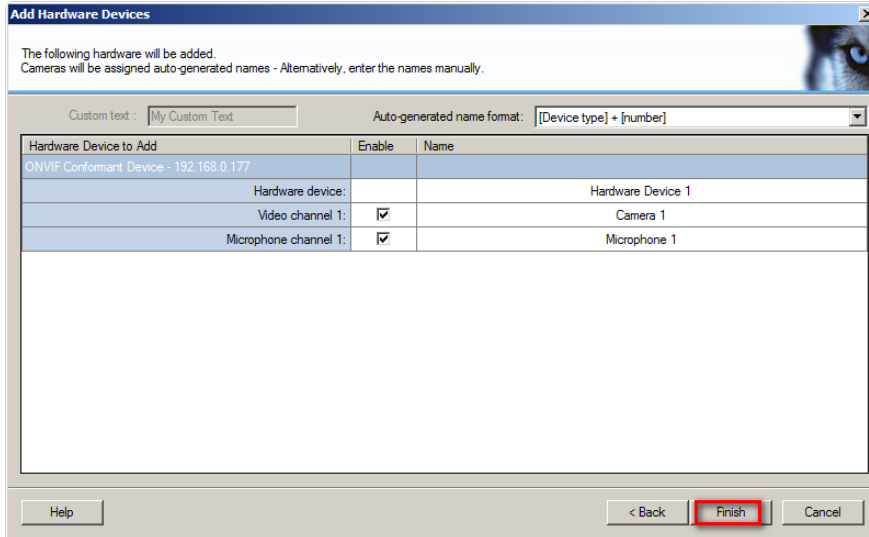
- Click “Next” button.



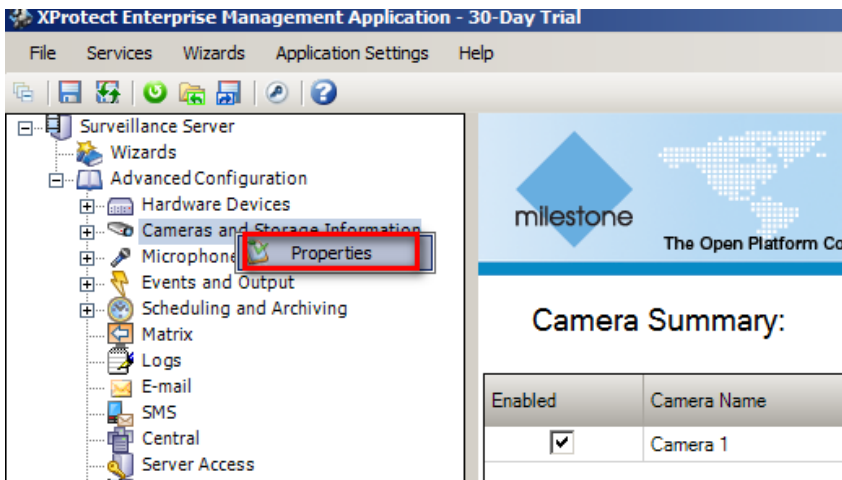
- Select at least 1 IPCAM and click “Next” button.



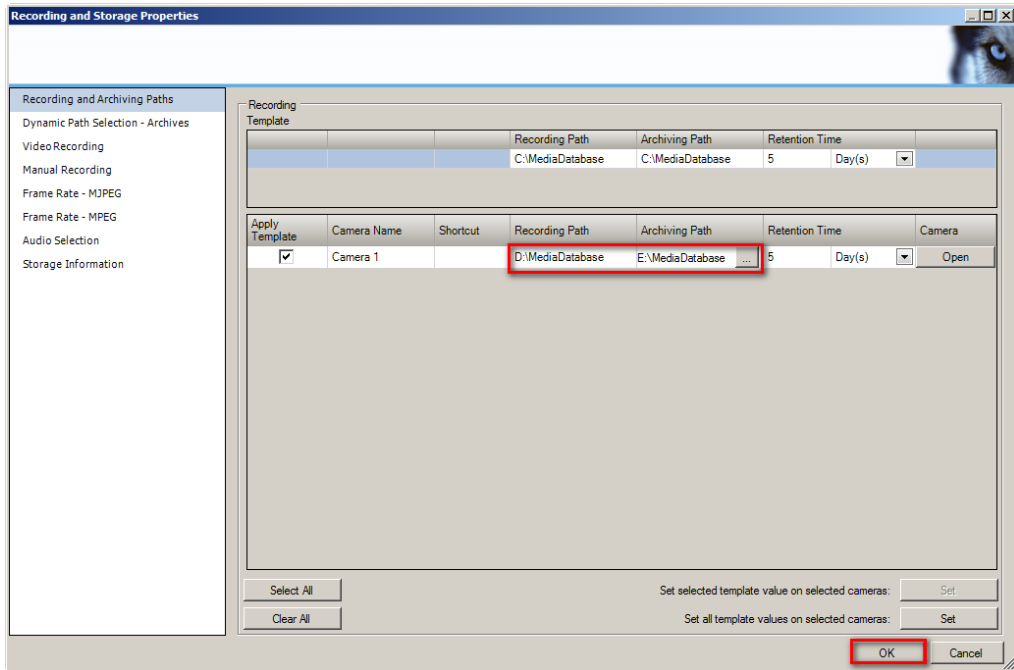
- Click “Finish” button.



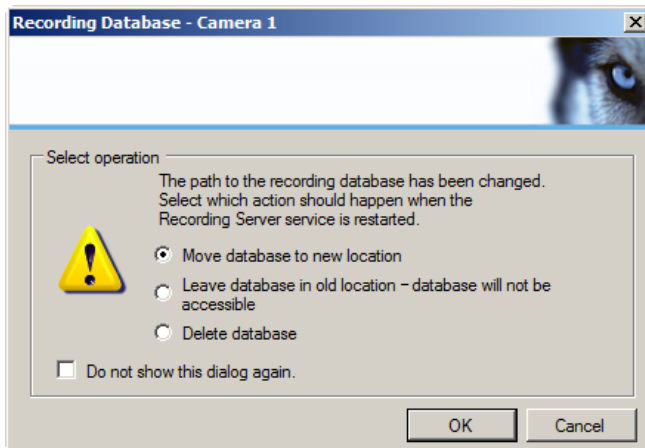
- Right click “Cameras and Storage Information” and click “Properties”



- Set **Recording Path** to RAID 1 disk **D drive**.
- Set **Archiving Path** to RAID 6 disk **E drive**.
- Click “OK” button to save the setting.



- Click "OK" button.



- User can see the Recording and Archiving disk have been setup correctly.

Storage Usage Summary:

Drive	Path	Usage	Drive Size	Video Data	Other Data	Free Space
C:\	C:\	Not in use	931 GB	0 GB	364 GB	567 GB
D:\	D:\	Recording	3,722 GB	0 GB	0 GB	3,722 GB
E:\	E:\	Archiving	11 TB	0.3 GB	0.1 GB	11 TB