SIMPLIFYING COMPLEXITY

CENTAUR®

USER GUIDE

V.2.10

milestone CERTIFIED SOLUTION

milestone GOLD TECHNOLOGY PARTNER

6SS

Table of Contents

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Introduction

As security surveillance networks rapidly develop and applications become diversified, demands for network infrastructure reliability are increasing, especially in nonstop network transmission applications. By allowing Milestone System to have automatic failover feature on the Management Server and the SQL Server levels without the need to use proprietary clustering mechanisms and without the need of dedicated storage and advanced IT personnel skills, 6SS Centaur® will contribute in increased security by maximizing system uptime and eliminating single point of failure in addition to decreasing the deployment cost and the most important thing is that it only takes less than a minute to be configured.

6SS Centaur® is a standalone application developed in order to provide an automatic failover mechanism for both Milestone Management Server and SQL Server including SQL Server Express without the need to use Windows Clustering feature which requires advanced IT competency, a domain environment and shared storage. It is fully integrated with Milestone System Event Server and Alarm Manager in order to allow the operators to be notified once a physical server or service goes down.

Centaur® Main Features

- Seamless Management Server Failover
- Seamless SQL Server Failover
- Server status monitoring
- Real-time data synchronization between primary and secondary servers
- Automatic switching between primary and secondary servers with no data loss
- No system downtime
- Alarm generation in case of any failure on the main server
- Fully integrated with Milestone Alarm Manager and Event
- Server Does not require dedicated storage
- Does not require advanced IT skills
- Does not depend on proprietary clustering technologies
- Does not require a dedicated server
- Fast configuration and deployment

Getting Started

System Requirements

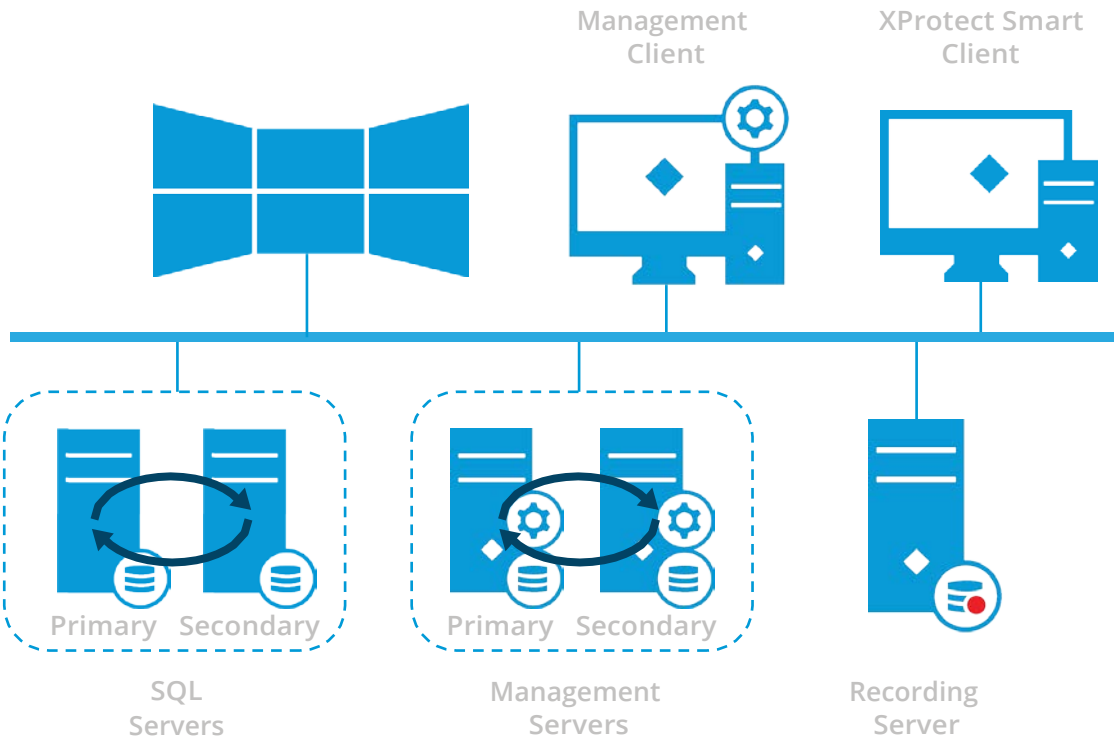
- Windows OS 8.1 or above
- Microsoft SQL Server Express, Standard or Enterprise edition
- Milestone XProtect Corporate, XProtect Expert, XProtect Professional+, or XProtect Express+
- Centaur Application v1.1.8 or above

Quick Start

- Read Best Practice section before installation.
- Microsoft SQL Server Management Studio installed.
- Named pipes and TCP/IP protocols must be enabled on first server (FAQ).
- SQL Server and Windows Authentication mode allowed on both machines (FAQ).
- Same Milestone XProtect product and version installed on both machines.
- Run Centaur setup on the second server as mentioned in Centaur® Setup section.
- Follow Milestone & Centaur® Configuration section.

System Introduction

6SS Centaur® is an application that groups two Milestone Management Servers, or two SQL Servers into a virtual entity. It allows logical devices to work separately from physical devices. The primary server and the secondary server will each have its own physical IP address and they will be combined together to form a virtual server with its own separate virtual IP address. All the Management Server entities including the Event Server and the Alarm Manager in addition to the SQL Server will be configured to use the Virtual IP Address in all system communications and 6SS Centaur® will make sure to forward the data to the primary server. Real-time data replication and synchronization will assure that the secondary server will take over in case the primary server goes down with no downtime or system interruption. An alarm will be triggered in the Smart Client in case of a faulty server. 6SS Centaur® does not require a dedicated server, it can be installed on the secondary server and thus reducing IT infrastructure cost.
The below figure describes the architecture of 6SS Centaur® functionality and its related components.



Best Practice

Centaur best practice is to install it in a domain environment using domain account with full administrator privileges and it's the same domain user used when installing SQL Server and Milestone XProtect.

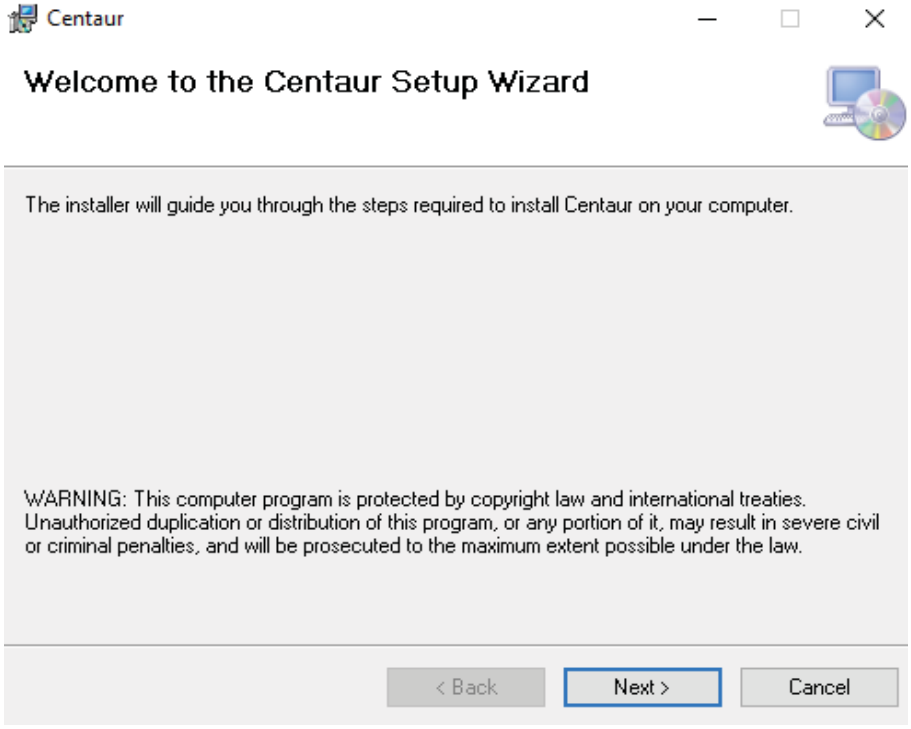
In case domain controller is not available, you need to make sure that SQL Server is installed with local administrator and Milestone XProtect installed using network service. Make sure to define a basic user on Milestone XProtect Management Client and add it to administrator role directly after installing Milestone XProtect on the first machine, and use this basic user whenever you need to log into Milestone XProtect Management Client.
You will no longer be able to log into Milestone XProtect Management Client using windows user, as when replication happens between two machines, windows user cannot be seen by the other machine. This is not the case when using a domain, as both machines belong to a domain controller and they are using the same domain user.

Make sure when installing Centaur software that you are logged in with the same user used to install Microsoft SQL Server.

Both machines should be identical in terms of time, date format, user privileges, Microsoft SQL server version, SQL server instance name, and Milestone XProtect version.

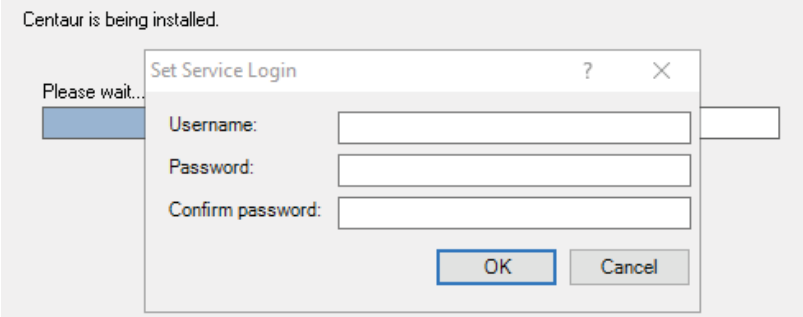
Centaur® Setup

First open the copied file received on the second server and double click to start the installation. The setup wizard opens, click Next to continue.



The wizard will guide you through the installation steps from the default installation folder to specifying the login credentials used to install Centaur service till the installation completion of the application along with a shortcut created on the desktop.

Make sure when you specify the username to enter ".\your local user" if you are in a workgroup, otherwise "your domain name\your domain user" if the machine belongs to a domain name.

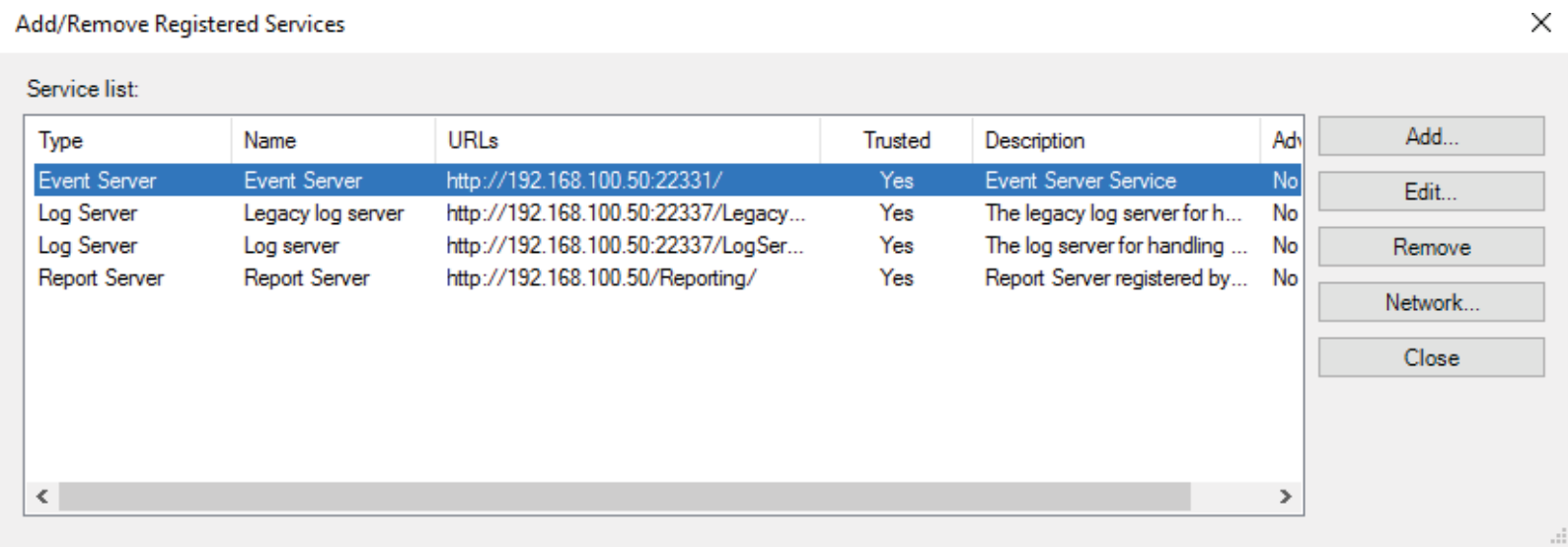


Milestone & Centaur® Configuration

Milestone Configuration

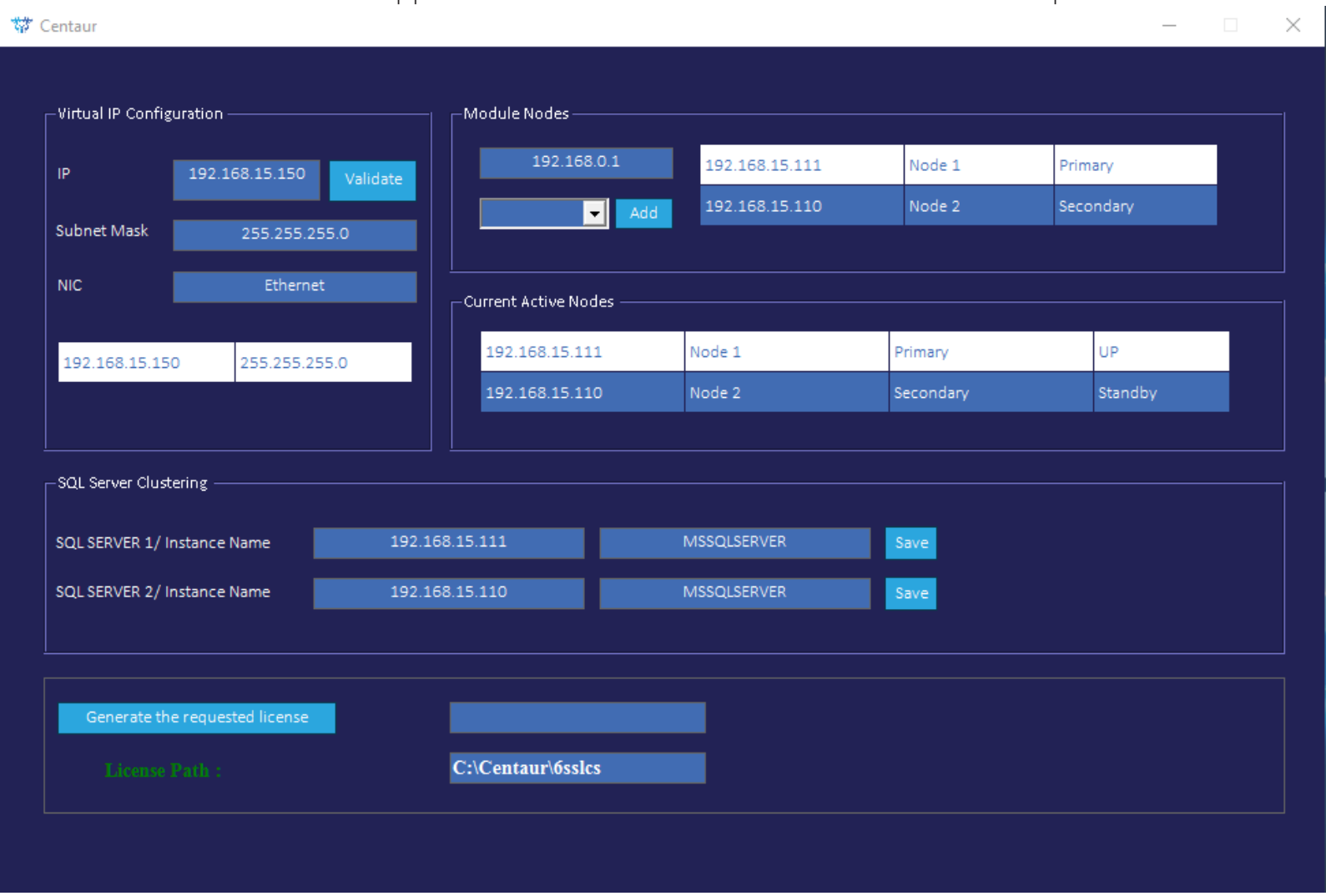
Login to Milestone XProtect Management Client on the first server and navigate to Tools > Registered Services.

From Add/Remove Registered Services windows, edit all the registered services to reflect the virtual IP address (in this example 192.168.100.50 is the chosen virtual IP).
Update as well the network URL to the virtual IP by clicking on the Network... button.
Do the same above steps on the second machine.



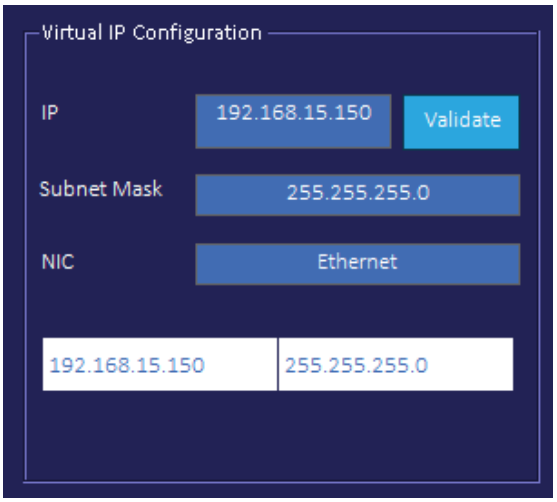
Centaur® Application

- Launch Centaur application from the shortcut created on the desktop.

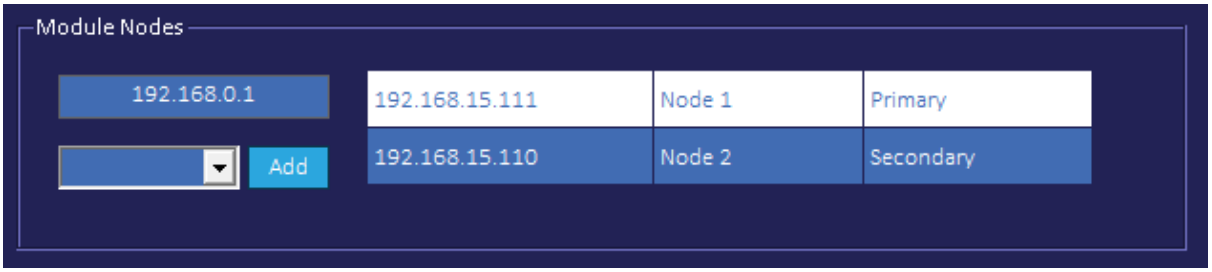


- Start by generating the license needed by clicking the button Generate the requested license and send the generated file saved on the desktop to 6SS Team.
- Once you receive the activated license, make sure to paste it on the path indicated by License Path, and close Centaur application.
- Reopen Centaur application, and start by defining virtual IP address for the cluster and specify the relevant Subnet Mask and Network Interface Card name using Virtual IP Configuration panel.

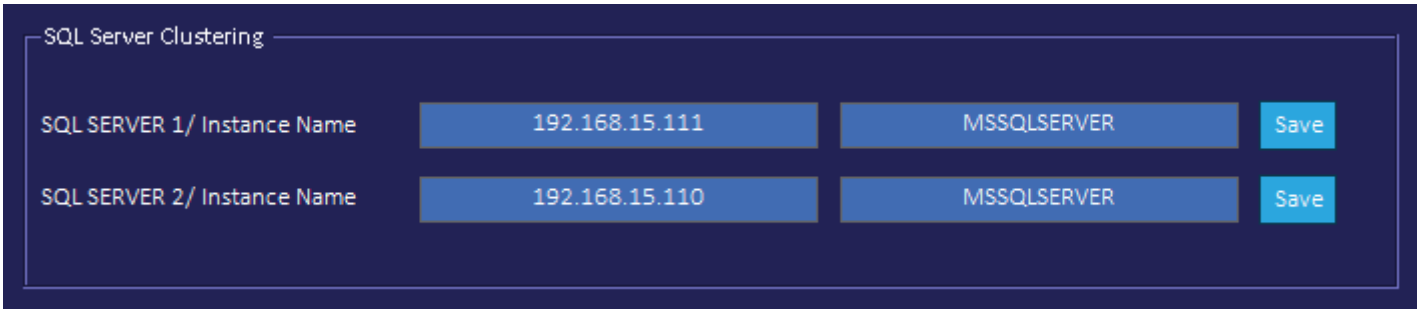
- Click Validate button to make sure that the chosen IP does not conflict with an existing IP on the network.



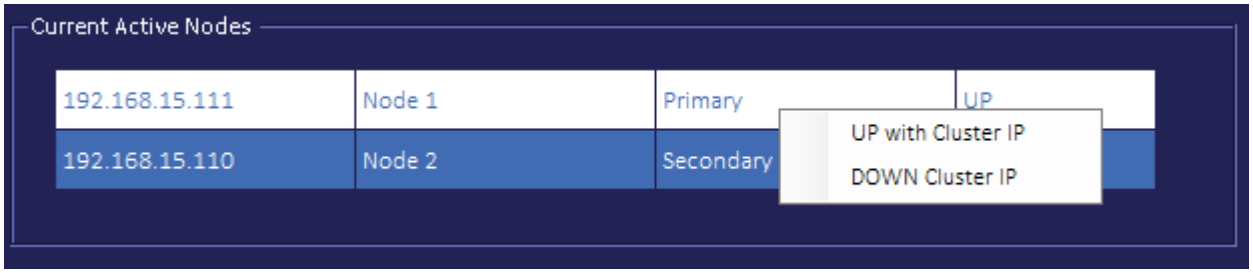
- Next, specify in Module Nodes panel the IP address of Server 1 (in this example 192.168.100.36) and choose Primary as a type, click Add to submit. Then add the IP address of Server 2 (192.168.100.37) with type Secondary and click Add button.



- In SQL Server Clustering panel, specify SQL server instance name for each server. In case it's a default instance enter MSSQLSERVER, otherwise enter the named instance chosen when installing SQL Server. Make sure first that you have enabled both SQL and Windows authentication mode on SQL server level (check FAQ).



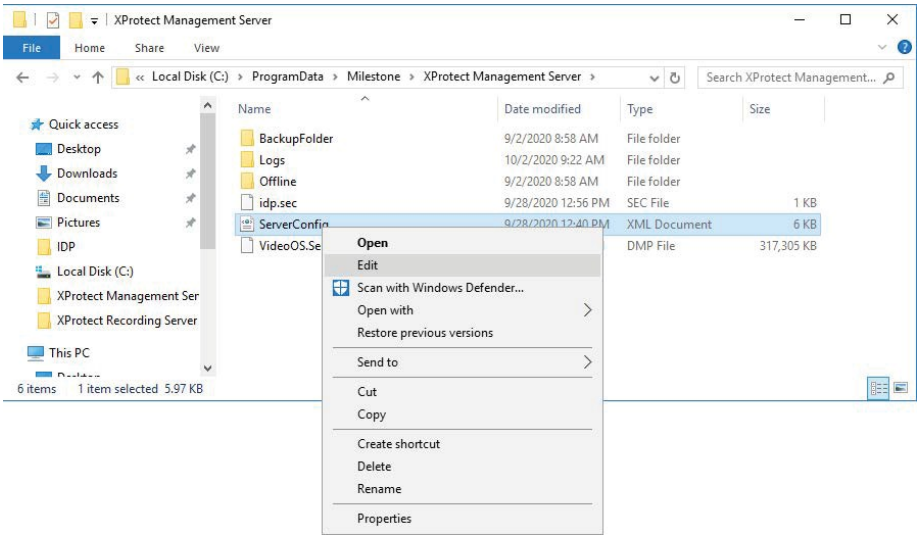
- In the Current Active Nodes panel check the current state of the previously defined nodes.
  Right click on Node 1 and select UP with Cluster IP to assign the virtual IP first to Node 1. Click Agree in the pop up windows to proceed.



Management Server Registration

After you have made sure that the virtual IP address is assigned to server 1, you need to encrypt and register Milestone XProtect Management Server on primary server and only register Milestone XProtect Management Server on secondary server.

- For Milestone XProtect versions prior to 2020 R2, do the following steps:
  Navigate to C:\ProgramData\Milestone\XProtect Management Server and right-click > edit ServerConfig xml file



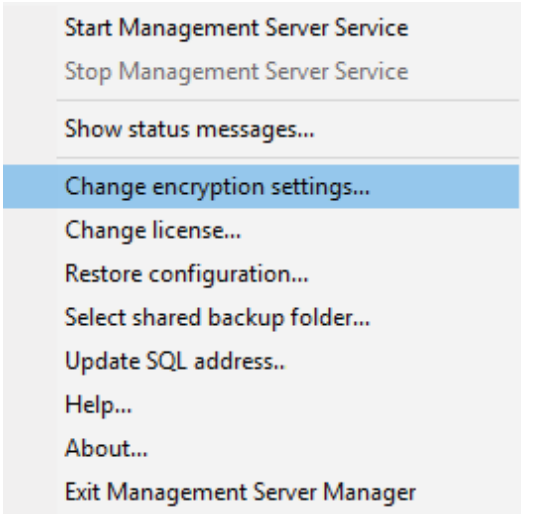
- In the opened file, search for IDP and replace the hostname by the virtual IP. Do the same steps for RecorderConfig.xml located on C:\ProgramData\Milestone\XProtect Recording Server.

ServerConfig - Notepad

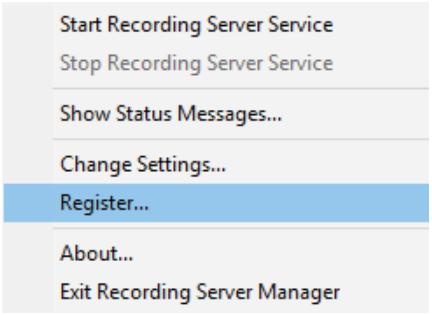
File Edit Format View Help

```
<VMOCommunication>
  <ServerName>localhost</ServerName>
  <Port>80</Port>
  <HttpsPort>443</HttpsPort>
</VMOCommunication>
<Rules>
  <!-- Accept a delay of up to 2000ms without correcting timestamp in ExecuteRuleActionsCommands -->
  <MaxRuleActionExecutionCommandDelay>2000</MaxRuleActionExecutionCommandDelay>
</Rules>
<ClientRegistrationId>b3d3312d-5901-47a1-98ca-4ca14e48bc07</ClientRegistrationId>
<WebApiConfig>
  <Port>9000</Port>
  <ServiceDiscoveryTimeout>10</ServiceDiscoveryTimeout>
  <ServiceDiscoveryCheckInterval>2</ServiceDiscoveryCheckInterval>
  <SleepBetweenRecorderReconnection>2</SleepBetweenRecorderReconnection>
  <AuthorizationServerUri>http://192.168.100.50/IDP</AuthorizationServerUri>
  <SleepBetweenGetCompleteConfigurationReconnection>5</SleepBetweenGetCompleteConfigurationReconnection>
</WebApiConfig>
<!--
RequestTimeout - Timeout in seconds to use when performing online activation.
    Possible value are integers between 30 and 600.
    Default is 360 (6 minutes).
```

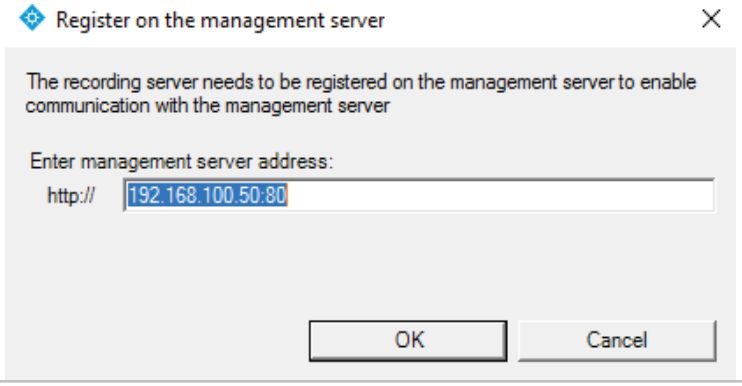
- After this, you need to make sure to encrypt Milestone XProtect Management Server. Skip the encryption step for the second server.
- Right click on Milestone XProtect Management Server service and choose Change encryption settings... click OK



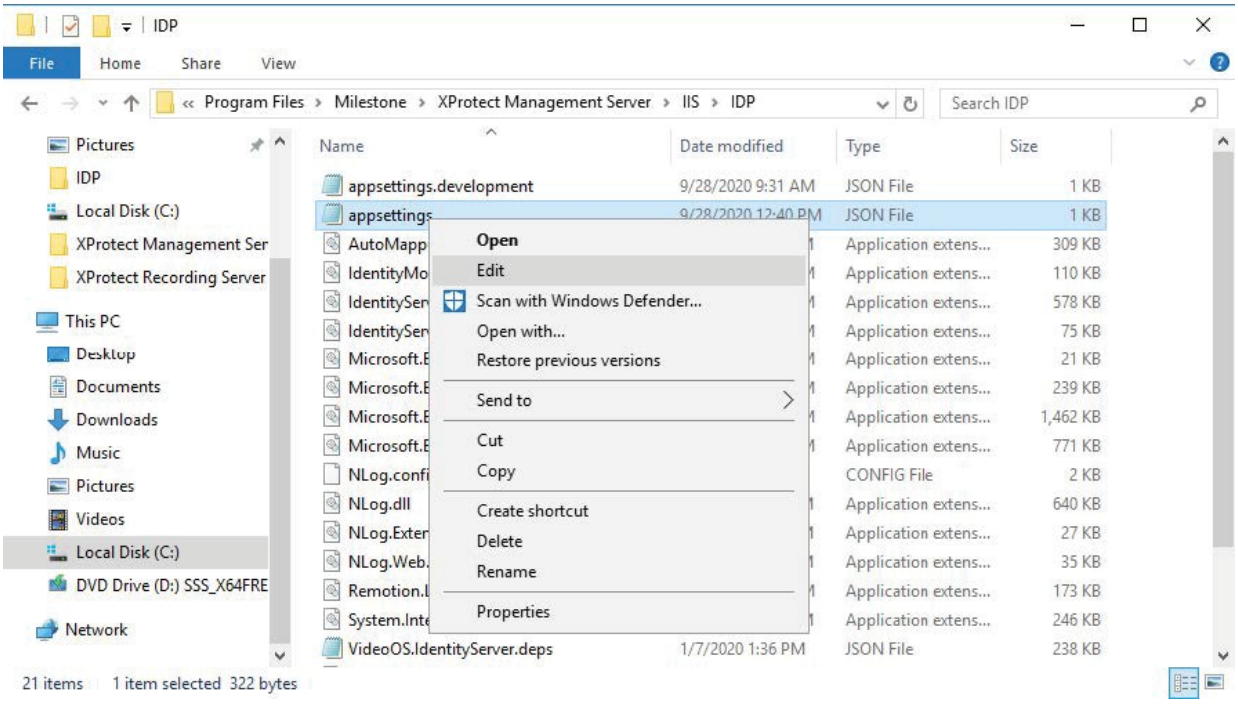
- Then register Milestone XProtect Recording Server by right click on the recording service and choose Register...



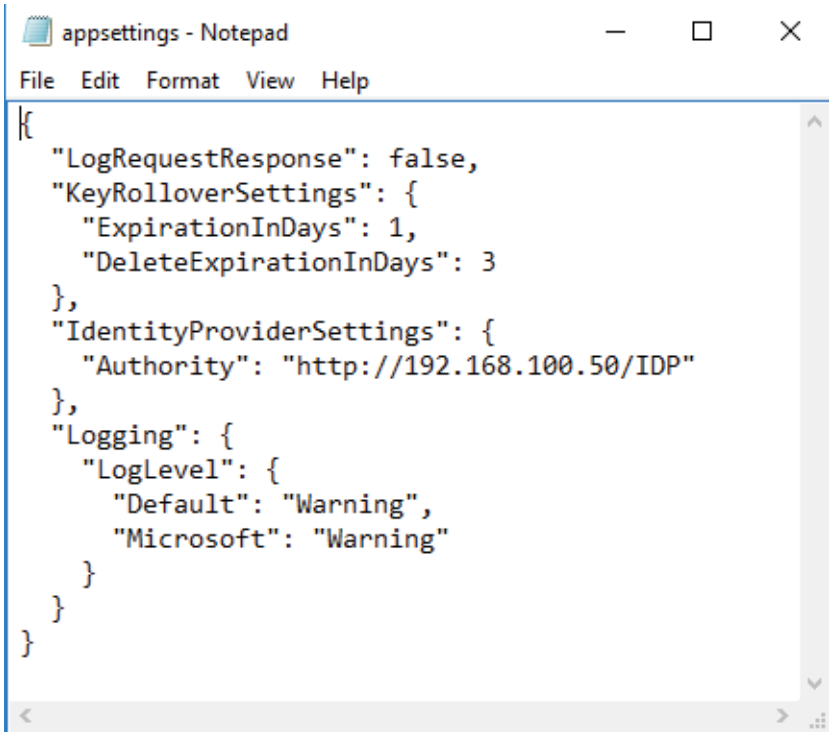
- Update management server address to reflect the virtual IP as shown below and click OK.



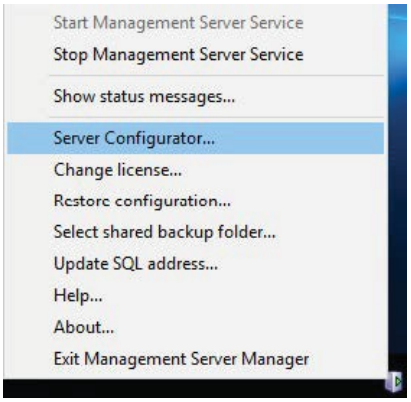
- Navigate now to C:\Program Files\Milestone\XProtect Management Server\IIS\IDP, right click on appsettings and choose Edit.



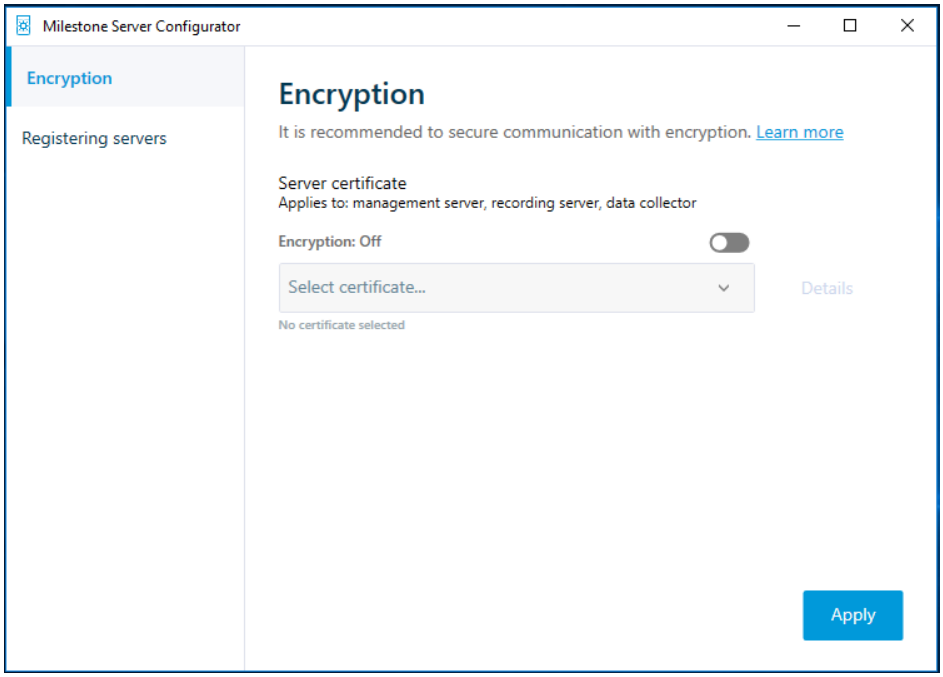
- Edit the JSON file to update the hostname to the virtual IP address for "Authority" value.



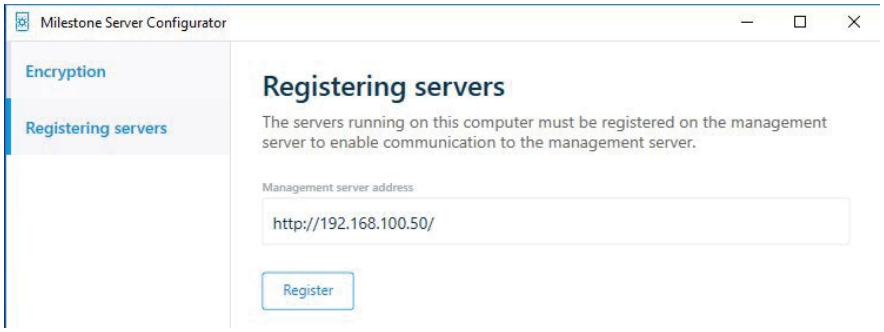
- For Milestone XProtect 2020 R2 version and higher, follow these steps:
  Right click on Management Server Service and choose Server Configurator...



- Click Apply button shown on Encryption tab. Skip the encryption step for the second server.

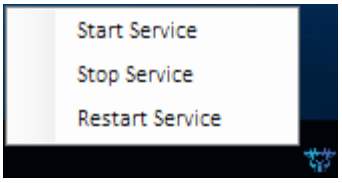


- Navigate to Registering Servers node and change Management server address to the chosen virtual IP address. Click Register button.



Centaur® Service

- Start Centaur service by choosing Start Service from the system tray to scan and synchronize both servers for replication.



- After running the service and whenever the primary node goes down, the secondary node will automatically take over.

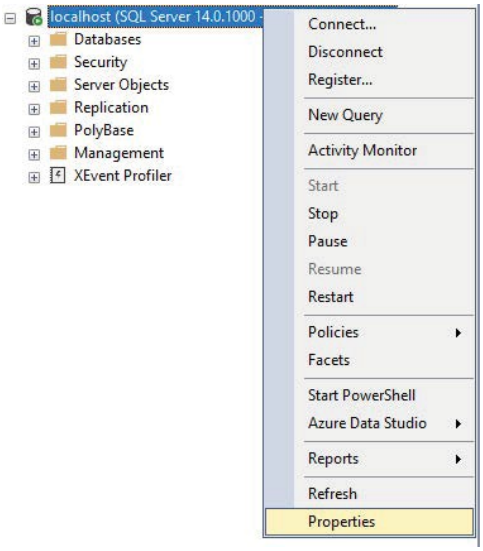
- The services will switch back to the primary node whenever the first server is up again.

FAQ

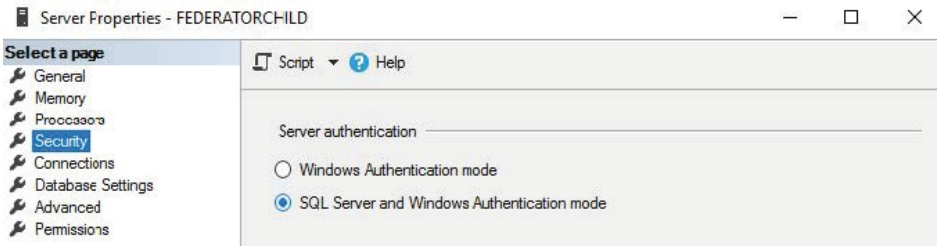
Frequently Asked Questions

How to allow SQL Server and Windows Authentication mode?

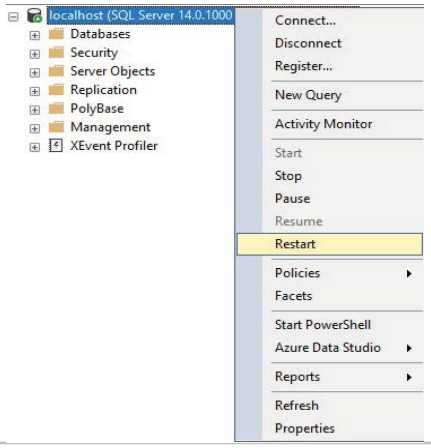
- Open SQL Server Management Studio and connect to the server. Right click on the SQL server name and choose Properties.



- Select Security node and choose SQL Server and Windows Authentication mode option under Server authentication.

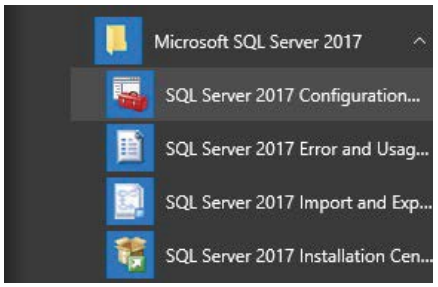


- SQL Server needs to be restarted in order to take effect. Right click again on SQL server name and choose Restart.

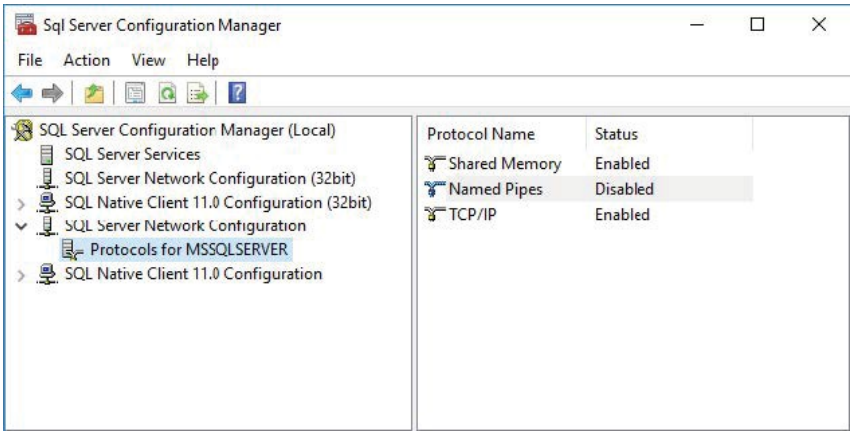


How to enable Named pipes and TCP/IP protocols?

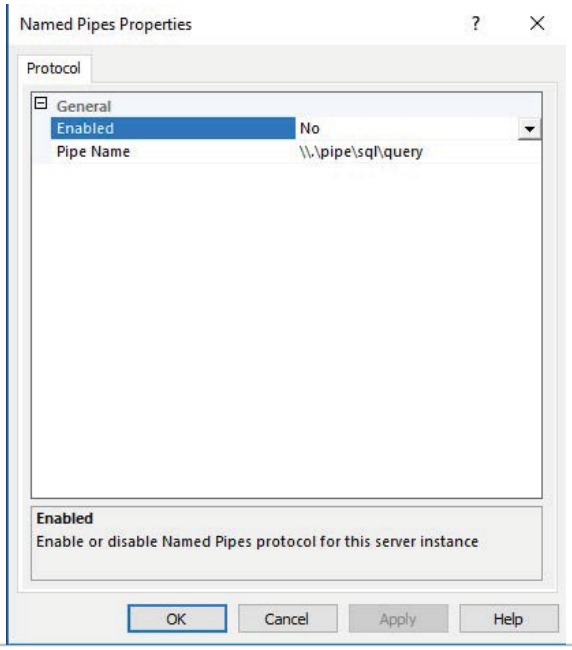
- Go to Windows Start screen and navigate to Microsoft SQL Server folder and click on SQL Server Configuration Manager.



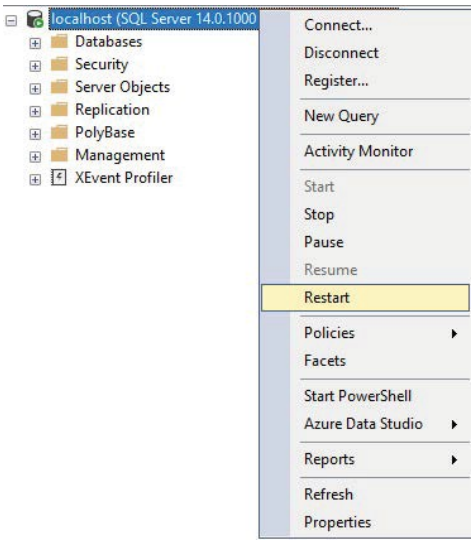
- Navigate to SQL Server Configuration Manager > SQL Server Network Configuration > Protocols for <machine instance>



- Double-click Named Pipes. The Named Pipes Properties screen appears. From Enabled, select Yes. Then click OK.



- From SQL Server Management Studio, restart the server instance.

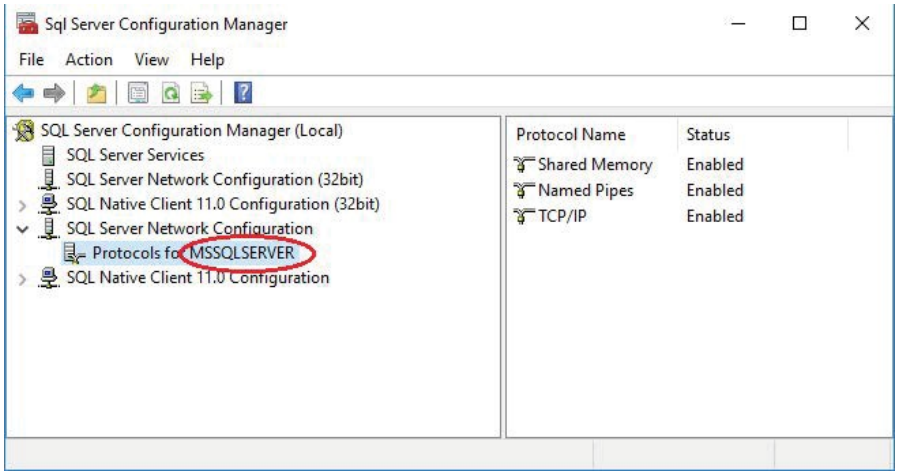


How to find SQL server instance name?

There's lot of ways to obtain SQL instance name.

Option 1:

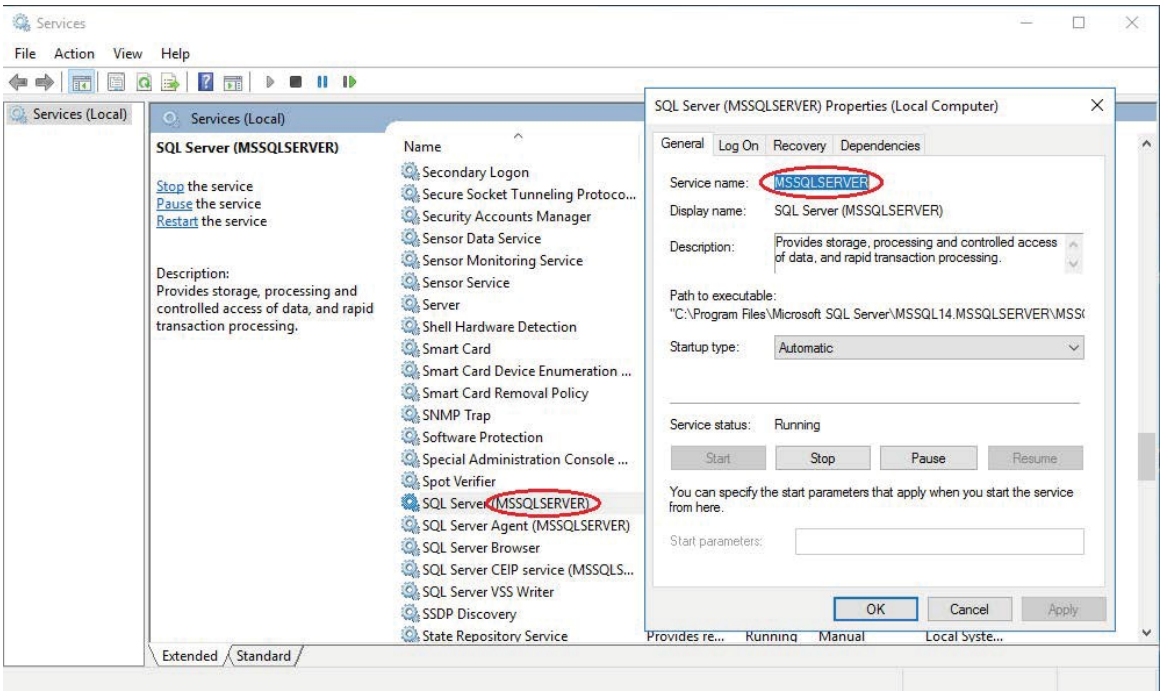
Launch the SQL Server Configuration Manager.
Go to Start > Microsoft SQL Server > SQL Server Configuration Manager. Locate the running MS SQL Server instance name (circled below in red). This is what you'll need to enter in the record.



Option 2:

Launch windows Services app.

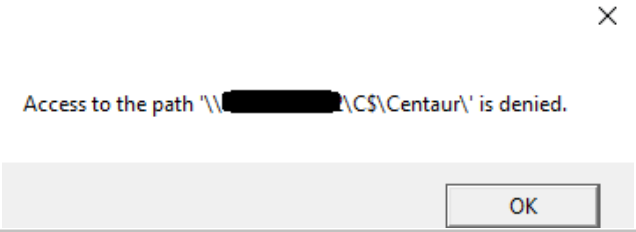
Go to Start and search for services. Locate the running SQL Server instance name (circled below in red). This is what you'll need to enter in the record.



What user privileges are needed to install Centaur?

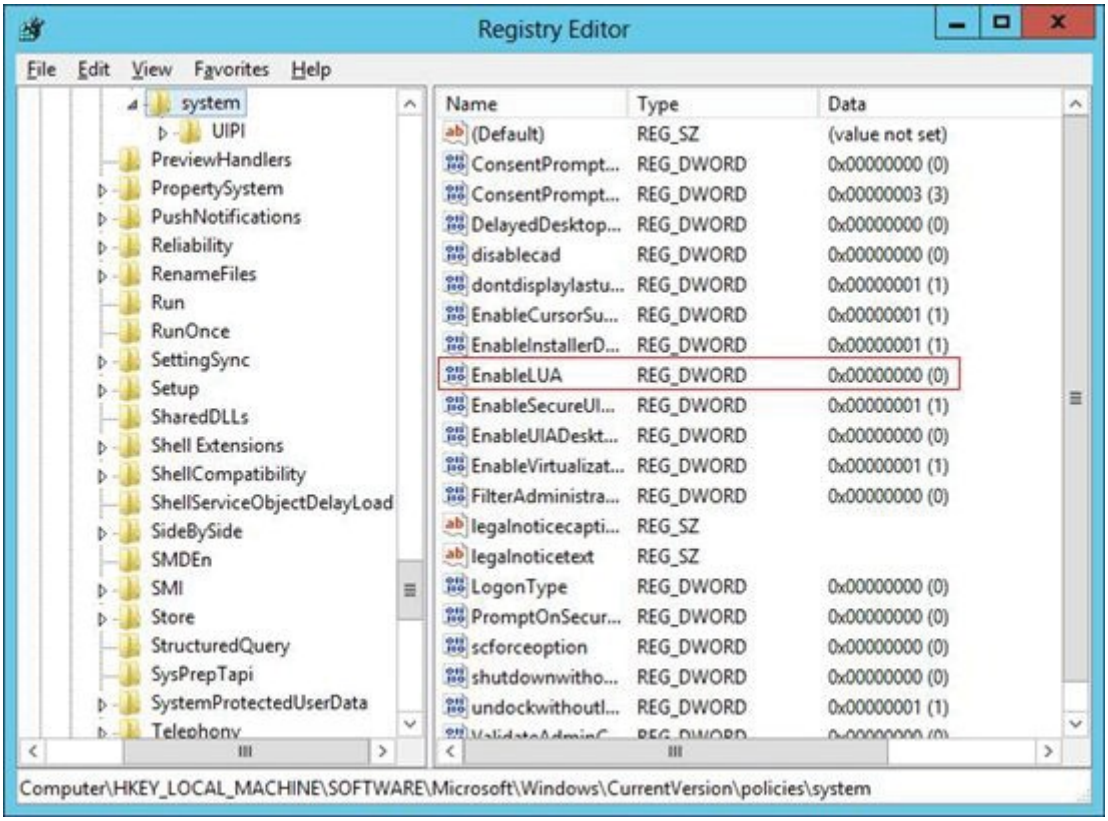
Before installing Centaur application, you need to make sure that the user used to install SQL Server and Milestone XProtect product has full administrator privileges and it's the same user logged in to the machine in order to install Centaur software.

Privilege access might be needed while specifying IP Address for the primary server in Centaur application, especially if you are in a workgroup environment and you are using a local user.

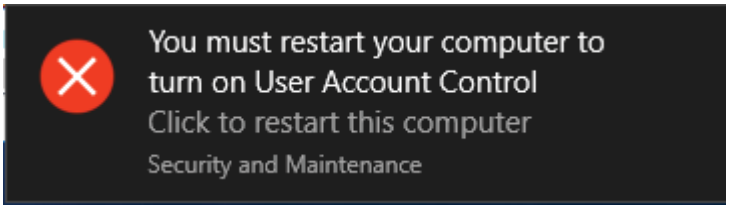


Reason: User Account Control (UAC) is turned on the servers.

Resolution: Turn off UAC on the second server via registry by changing the DWORD "EnableLUA" from 1 to 0 in "HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\policies\system".



You will get a notification that a reboot is required. After the reboot, UAC is disabled.



About 6SS

6SS was founded in 2013 with Headquarters in Minnesota, USA. 6SS is a modern video surveillance and security systems company that provides complete security solution that you need and deserve, from Software to Hardware to Professional Services and Training.

All our products will integrate fully with the Milestone VMS. ◆

Any Questions?

Please reach out to us if you have any question or inquiry
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