Legal Considerations

Laws that can vary from country to country may prohibit camera surveillance. Please ensure that the relevant laws are fully understood for the particular country or region in which you will be operating this equipment. IndigoVision Ltd. accepts no liability for improper or illegal use of this product.

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1 ABOUT THIS GUIDE

This guide is written for users of IndigoVision Site Database Server. It provides installation and configuration information for the system, as well as a description of the hardware and details of operation.

Please ensure you read the instructions provided in the guide before using the system.

Safety notices

This guide uses the following formats for safety notices:

⚠️ Warning

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠️ Caution

Indicates a hazardous situation which, if not avoided, could result in moderate injury, damage the product, or lead to loss of data.

⚠️ Notice

Indicates a hazardous situation which, if not avoided, may seriously impair operations.

💡 Additional information relating to the current section.
SITE DATABASE SERVER OVERVIEW

The Control Center suite is made up of multiple products which work together to provide a complete end-to-end IP security solution. The IndigoVision Site Database Server provides:

- A secure store for the Control Center site database.
- An authentication service for the Control Center operators and administrators.
- Resilience to hardware failures through use of a failover Site Database Server.

Site database overview

The Control Center site database stores the site configuration information.

There are two components to a Control Center site database:

- The Site Database Server which hosts configuration information for users and cameras. This is provided as a network service.
- The Site Database Files which hosts additional media files such as maps and audio messages. This is provided as a Windows file share.

IndigoVision recommends hosting the Site Database Files on the same PC as the Site Database Server.
This section details how to install the Site Database Server. For more information on installing the complete Control Center system, refer to the "IndigoVision Control Center Installation Guide".

Choosing the location of the site database

There are two ways to use the site database:

- **Local** - the Site Database Server, Site Database Files and Control Center front-end application are all installed on the same PC and the Site Database Files directory is not shared on the network. If you have installed the Control Center front-end application on only one PC you should use a local site database.
- **Central** - the Site Database Server and Site Database Files are installed on a central Windows server accessible to all Control Center workstations. If you have installed the Control Center front-end application on several PCs you should use a central site database.

When you use a central site database, the Site Database Server and Site Database Files can be stored in one of the following locations:

- a PC where the Control Center front-end application is installed
- an NVR-AS 4000 Windows Appliance
- a Windows server

**Notice**

Ensure that the folder you select for the Site Database Files is accessible by all PCs running the Control Center front-end application.

System requirements

**Notice**

To install IndigoVision Site Database Server, you must have a License Server installed and available, with a valid Control Center license.

For more information, see the "IndigoVision Control Center Installation Guide"

You can install the Site Database Server on any of the following operating systems:

- Windows Server 2019 (recommended)
- Windows Server 2016
- Windows Server 2012 R2
• Windows 10 64-bit v1607 and later
• Windows 8.1 64-bit

Ensure that the Universal C Runtime is installed on the Site Database Server PC.
• For Windows 10 and Windows Server 2016 or later, the Universal C Runtime is shipped automatically.
• For earlier operating systems, the Universal C Runtime is distributed through Windows Update.

IndigoVision recommends that you install the Site Database Server on a server-style system, with a server network adaptor, and the following minimum requirements:
• Server class PC
• 4 GB RAM

The Site Database Server is compatible with common virtualization software, including VMWare ESXi and Microsoft Hyper-V.

Notice  The Site Database Server is a critical component of the IndigoVision Control Center suite. It is recommended that it is installed on a robust and highly available server.

The Site Database Server can be installed alongside other IndigoVision server software, including the Windows NVR-AS and License Server.

Install the Site Database Server

The Site Database Server must be installed and running before installing Control Center. If this is not the case, you will be unable to start Control Center. The Site Database Server Setup tool will take you through configuring the Control Center site database. It can be run later from the Start Menu to change the configuration.

To install the Site Database Server, follow these steps:

Notice  Your operating system may require you to authorize this installation.

1. Perform one of the following operations:
   • Insert the IndigoVision Control Center CD-ROM.
   • Download the CD image from the support section of the IndigoVision website.
2. If the IndigoVision Control Center install screen does not open automatically, open Windows Explorer and navigate to the downloaded image or CD-ROM drive, and double-click the Installer.exe file.
3. Click Install for the Site Database Server component.
4. Read the End-User License Agreement, select the box to accept the agreement, and click Next.
The Site Database Server installation begins.

Notice  You must complete the steps in the Site Database Server Setup tool before Control Center workstations can be configured to use the site database.
5. In the Site Database Server Setup tool, you have the following options to set up a site database:

   • **Use an existing site database**
     Use this option if you have already created a Control Center 17 or later site database which you want to use. This option will also allow you to modify the site database, by changing the License Server address for example.
     ▶ For more information, see "Modify or use an existing site database" on page 13

   • **Create a new site database**
     Use this option if this is the first time you have installed the Site Database Server and do not have an existing Control Center 16 system to upgrade from.
     ▶ For more information, see "Create a new site database" on page 11

   • **Upgrade from a Control Center 16 site database**
     Use this option if you are upgrading from Control Center 16 and wish to create a Control Center 17 compatible site database from your Control Center 16 site database.
     ▶ For more information, see "Upgrade from a Control Center 16 site database" on page 13

---

**Notice**

You cannot directly upgrade from versions of Control Center prior to Control Center 16.

▶ For more information on migrating from Control Center 15 or earlier, see "Upgrade from Control Center 15 or earlier" on page 26

   • **Configure as a failover Site Database Server**
     ▶ For more information on configuring a failover Site Database Server, see "Failover Site Database" on page 17

6. After the Site Database Server Setup tool is closed, click **Finish** on the Installer to complete the installation process.

---

**Create a new site database**

Use the Site Database Server Setup tool to create a new site database if this is a new installation of Control Center. Site Database Server Setup is run automatically during installation, or it can be started later from the Windows Start menu.

1. In the Site Database Server Setup tool, click **Next** to proceed to the Site Database Configuration page.
2. Select **Create a new site database** and click **Next**.
3. On the New Site Database page, perform the following operations:
   a. Provide a location for the Site Database Files directory. This will be shared as a Windows file share with all Control Center workstations. This could be an empty directory in an existing file share hosted on a different PC.
   b. Provide a location on the local PC for storing the database hosted by the Site Database Server.
   c. Click **Next**.
4. Enter the IP address of the License Server, then click **Next**.
5. Select the default site database access permissions for non-administrator users:
   • **None** (recommended) - users are not able to access any database objects by default. An administrator must grant each user permissions to the objects they need to access.
• **All** - users are able to access all database objects by default, unless explicitly denied permissions.

6. Click **Next**. The Control Center Administrator page opens.

7. Create the initial Control Center administrator account:
   a. Specify a username.
   b. Select either a Windows account or password for authentication.
   c. Click **Next**.

8. If you have chosen an insecure password, the **Password Strength Warning** will be displayed. Perform one of the following actions:
   • Click **Yes** to continue with an insecure password.
   • Click **No** to return and change the password.

9. On the **Site Database Server Administrator** page, enter a username and password for the authenticating with the database service, then click **Next**.

**Notice** These credentials will be required to configure a failover Site Database Server or recover from a backup in the future.

10. If you have chosen an insecure password, the **Password Strength Warning** will be displayed. Perform one of the following actions:
    • Click **Yes** to continue with an insecure password.
    • Click **No** to return and change the password.

11. On the **Network Binding** page, do the following:
    a. Choose the IP address and port on the local PC that the Site Database Server will bind to. The IP and port selected here must be accessible to all Control Center workstations in the system.
    b. Choose the IP address on the local PC that will be used for replication. The IP selected here must be accessible to the failover Site Database Server.

12. Click **Next**.

13. On the **Server Certificate** page, choose a TLS certificate for Site Database Server, then click **Next**. The Site Database Server requires a certificate for secure communication with Control Center. If you do not have a valid certificate signed by a trusted Certificate Authority (CA) for this PC, you can select **Generate a self-signed certificate**.

**Caution** IndigoVision recommend that self-signed certificates are only used for initial demonstration and test purposes. Correctly secured systems must use certificates from a trusted CA.

► For more information on security, refer to the "Control Center Security Hardening Guide"

► For more information on creating certificates for the Site Database Server, see "Request a new certificate from a third party Certificate Authority (CA)" on page 24

► For more information on changing certificates for the Site Database Server, see "Replace the certificate used by the Site Database Server" on page 25

14. If you have chosen to create a self-signed certificate, or if the chosen certificate is otherwise untrusted by Windows, the **Certificate Security Warning** appears. Perform one of the following actions:
Site Database Server

3 Installation

- Check to confirm you have read and understood the warning and click Next to proceed.
- Click Back to choose a different certificate.

15. On the Camera HTTPS Configuration page, select if support for HTTPS for communication with cameras is to be enabled for the database, then click Next.
   ▶ For more information on HTTPS, see "HTTPS technical notes" in "IndigoVision Control Center Installation Guide".

16. After the configuration is completed, click Finish to close the Site Database Server Setup tool.

Modify or use an existing site database

If you have previously created a Control Center 17 or later site database, use the existing database when installing Control Center. The Site Database Server Setup tool will allow you to edit the existing configuration, such as the License Server IP address, at the same time.

1. In the Site Database Server Setup tool, click Next to proceed to the Site Database Configuration page.
2. Select Use an existing site database and click Next.
3. On the Site Database Location page, provide the location on the local PC where the existing Site Database Server database is stored. This is separate from the Site Database Files directory.
4. Click Next to continue to the License Server page.
   Optionally, change the License Server IP address, and click Next to continue.
5. On the Network Binding page, do the following:
   a. Choose the IP address and port on the local PC that the Site Database Server will bind to. The IP and port selected here must be accessible to all Control Center workstations in the system.
   b. Choose the IP address on the local PC that will be used for replication. The IP selected here must be accessible to the failover Site Database Server.
6. On the Server Certificate page, optionally change the TLS certificate for Site Database Server, then click Next.
   ▶ For more information on creating certificates for the Site Database Server, see "Request a new certificate from a third party Certificate Authority (CA)" on page 24,
   ▶ For more information on changing certificates for the Site Database Server, see "Replace the certificate used by the Site Database Server" on page 25.
7. If you have chosen to create a self-signed certificate, or if the chosen certificate is otherwise untrusted by Windows, the Certificate Security Warning will display. Perform one of the following actions:
   • Check to confirm you have read and understood the warning and click Next to proceed.
   • Click Back to choose a different certificate.
8. After the configuration is completed, click Finish to close the Site Database Server tool.

Upgrade from a Control Center 16 site database

If you have are upgrading from Control Center 16, use the Site Database Server Setup tool to automatically migrate your old site database.
1. In Site Database Server Setup tool, click Next to proceed to the Site Database Configuration page.
2. Select Upgrade from a Control Center 16 site database and click Next.
3. Read introduction to the upgrade process and then click Next.
4. On the New Site Database page, perform the following operations:
   a. Provide a location for the existing Control Center 16 site database. This will become the Site Database Files location for the upgraded system.
   b. Provide a location on the local PC for storing the database hosted by the Site Database Server.
5. Click Next to continue.
6. Enter the IP address of the License Server, then click Next.
7. On the Site Database Server Administrator page, enter a username and password for the authenticating with the database service, then click Next.

**Notice**

These credentials will be required to export or recover the database the in the future. Store these credentials for future use.

8. If you have chosen an insecure password, the Password Strength Warning will display. Perform one of the following actions:
   - Click Yes to continue with an insecure password.
   - Click No to return and change the password.
9. On the Network Binding page, do the following:
   a. Choose the IP address and port on the local PC that the Site Database Server will bind to. The IP and port selected here must be accessible to all Control Center workstations in the system.
   b. Choose the IP address on the local PC that will be used for replication. The IP selected here must be accessible to the failover Site Database Server.
10. On the Server Certificate page, choose a TLS certificate for Site Database Server, then click Next.
    The Site Database Server requires a certificate for secure communication with Control Center. If you do not have a valid certificate signed by a trusted Certificate Authority (CA) for this PC, you can select Generate a self-signed certificate.

**Caution**

IndigVision recommend that self-signed certificates are only used for initial demonstration and test purposes. Correctly secured systems must use certificates from a trusted CA.

- For more information on security, refer to the "Control Center Security Hardening Guide"
- For more information on creating certificates for the Site Database Server, see "Request a new certificate from a third party Certificate Authority (CA)" on page 24.
- For more information on changing certificates for the Site Database Server, see "Replace the certificate used by the Site Database Server" on page 25.
11. If you have chosen to create a self-signed certificate, or if the chosen certificate is otherwise untrusted by Windows, the Certificate Security Warning will display. Perform one of the following actions:
   - Check to confirm you have read and understood the warning and click Next to proceed.
   - Click Back to choose a different certificate.
12. After the configuration is completed, click **Finish** to close the Site Database Server Setup tool.
A failover Control Center site database consists of a failover Site Database Server and a failover Site Database Files directory. If the primary Site Database Server or primary Site Database Files directory is unavailable when an operator or administrator attempts to log into the Control Center front-end application, they will be able to use the failover site database instead. This ensures that there is no interruption of service and makes the system more robust in the face of hardware failures.

**Notice**

*When logged into a failover Site Database Server, administrators are prevented from making changes to the site configuration, such as adding or removing cameras.*

![Diagram of network configuration with failover Site Database Server](image)

**Figure 1:** Network configuration with the failover Site Database Server

The failover Site Database Server is configured to automatically synchronize all of the configuration information directly from the primary Site Database Server. There must be a persistent network route between the two Site Database Servers in order to achieve this.

The failover Site Database Files directory is expected to be a copy of the primary Site Database Files. There are many tools that can be used to ensure that changes made to the primary Site Database Files directory are synchronized regularly to the failover directory. IndigoVision does not provide automatic tooling to accomplish this.
4 Failover Site Database

Configuring a failover Site Database Server

Notice There can only be one failover Site Database Server for each Control Center system. If you configure a second failover Site Database Server, the first failover is removed from the primary and will stop synchronization.

To configure a failover Site Database Server, follow these steps:

1. Ensure the Site Database Server is already installed and configured on a separate PC or virtual machine. This is the primary Site Database Server.
   ▶ For more information, see "Installation" on page 9
2. Ensure that there is no firewall blocking access to the MongoDB service on the primary server.
   ▶ For more information, see "Firewall" on page 33
3. On the PC that will host the failover Site Database Server (this must be separate from the primary server), do the following:
   a. Insert the IndigoVision Control Center CD-ROM or download the CD image from the support section of the IndigoVision website.
   b. If the IndigoVision Control Center install screen does not open automatically, open Windows Explorer and navigate to the downloaded image or CD-ROM drive, and double-click the **Installer.exe** file.
   c. Click **Install** for the Site Database Server component.
   d. Read the **End-User License Agreement**, select the box to accept the agreement, and click **Next**.
      The Site Database Server installation begins.
   e. In the Site Database Server Setup tool, choose to **Configure as a failover Site Database Server**, and click **Next**.
   f. Read the overview page and click **Next**.
   g. On the primary **Site Database Server connection** page, enter the address, username, and password for the primary Site Database Server.
      The primary address can be the IPv4 address or a resolvable hostname, or fully qualified domain name.

Notice To avoid reconfiguring the failover if the IP address of the primary changes, consider using a fully qualified domain name for the primary.

h. Click **Next** and the connection is tested.
   If there is a problem connecting to the primary Site Database Server, the **Site Database Server connection** is shown again. Check that the details entered are correct and that the primary Site Database Server is available.

i. On the **New failover Site Database Location** page, enter the location on this PC where the site database server will store the data synchronized from the primary.

j. On the **Network Binding** page, do the following:
   • Choose the IP address and port on the local PC that the Site Database Server will bind to. The IP and Port selected here must be accessible to all Control Center workstations in the system.
   • Choose the IP address on the local PC that will be used for replication. The IP selected here must be accessible to the primary Site Database Server.
k. On the Server Certificate page, specify the TLS certificate for Site Database Server, then click Next.
   ▶ For more information on creating certificates for the Site Database Server, see "Request a new certificate from a third party Certificate Authority (CA)" on page 24
   ▶ For more information on changing certificates for the Site Database Server, see "Replace the certificate used by the Site Database Server" on page 25.

l. If you have chosen to create a self-signed certificate, or if the chosen certificate is otherwise untrusted by Windows, the Certificate Security Warning will display. Check to confirm you have read and understood the warning and click Next to proceed, or click Back to choose a different certificate.

m. After the configuration is completed, click Finish to close the Site Database Server tool.

Notice  There can only be one failover Site Database Server for each Control Center system.

Configuring Control Center to use a failover site database

After the failover site database files and failover Site Database Server have been configured, each Control Center workstation must be configured to use the failover when the primary site database is unavailable.

To configure the Control Center front-end application to use a failover site database:

1. Run the Control Center Setup tool from Start > IndigoVision > Control Center Setup.
2. On the Site Database page, modify the existing primary site database details if necessary, then click Next.
3. After the primary Site Database Server has been tested, click Next to continue.
4. The Failover Site Database page is shown.
5. Select Specify a failover site database and then enter the details of the failover Site Database Server and Site Database Files directories.
6. Click Next and the Testing Failover Connection page appears, and automatically connects to the Site Database Server.
   • If the Site Database Server is available but the server’s certificate is not trusted by this workstation:
     a. Click View Certificate to view the server certificate and check if it matches the expected server certificate configured when installing the Site Database Server. Then click OK to close the Certificate dialog.
     If the certificate does not match the certificate configured on the Site Database Server, check that you are connecting to the correct address and consider if the network could be compromised.
     b. To enable Control Center to trust the Site Database Server, click Install Certificate on the Testing Connection page. This will install the certificate and retest the connection.

   If Control Center is installed on Windows 8.1, the address used to connect to the Site Database Server in the Control Center Setup tool must match the Subject (or Common Name) field in the Site Database Server certificate. Otherwise the workstation will not trust the certificate even after it is installed. For a self-signed certificate, this will either be the fully qualified domain name, if the Site Database Server is a member of a
Windows domain, or the machine name if it is not on a domain. This must be entered to match the case (upper or lower case) of the field in the certificate.

- If the Site Database Server cannot be contacted, check if the Site Database Server is available over the network and click **Retry Connection** to try again.
- If the Site Database Server is available and the server’s certificate is trusted by this workstation:
  - Click **View Certificate** to view the server certificate and check if it matches the expected server certificate configured when installing the Site Database Server.
  - Click **Next**. The **Failover Site Database** page is displayed.

After updating the Control Center front-end application with a configured failover site database, it is worthwhile testing the failover by temporarily shutting down or disconnecting the primary Site Database Server, then logging into Control Center.
5 OPERATIONS

This chapter describes common tasks required for the administration of the Site Database Server.

Change the Site Database Server Administrator username or password

The Site Database Server Administrator account is used by the Site Database Server to access the database and protects the data from rogue users with access to the host operating system. IndigoVision recommend that these credentials are changed regularly.

To change the Site Database Server Administrator username or password:

1. Open the Windows Start menu and select IndigoVision > Site Database Server Setup.
   If you have a failover Site Database Server, it is the primary server where the tool should be run.
2. In the Site Database Server Setup tool, click Next.
3. Select Change the Site Database Server administrator password and click Next.
4. On the Site Database Server Administrator page, enter the current username and password for the Site Database Server administrator, and click Next.
   These are the credentials specified when the database was originally created with this tool, or when you last changed them following this procedure.
5. Enter the new username and password for the Site Database Server administrator, then click Next.
6. If you have chosen an insecure password, the Password Strength Warning will display. Perform one of the following actions:
   • Click Yes to continue with an insecure password.
   • Click No to return and change the password.
7. The configuration changes are applied.
   To close the application, click Finish.
8. If there is a failover Site Database Server configured, you must also reconfigure it after changing the credentials to keep the database synchronized.
   ▶ For more information, see “Re-configure a failover Site Database Server” on page 26

Changing session duration for Keep me logged in

After logging into your Control Center session with Keep me logged in selected, it remains active for 30 days without re-logging into Control Center. Each time you start a Control Center session, the session is extended for 30 days from the point you started.
If it is more than 30 days since you last logged in, the session expires and you will need to re-enter your credentials. It is possible to change the default 30 days for the active session.

To override the default 30 days session duration, do the following:

1. From the Windows start menu, type `REGEDIT`. The Registry Editor opens.
2. Navigate to `HKEY_LOCAL_MACHINE\SOFTWARE\IndigoVision\Site Database Server`
3. Create a DWORD called `AuthenticationCookieDurationSeconds`
4. Edit the DWORD and specify the session duration to be used. The DWORD key and duration is specified in seconds. For example, 30 days would be 2592000 seconds.
5. Close the Registry Editor.
6. Restart the Site Database Server after editing the registry key.

**Notice**  
The registry key should be set on the system running the Site Database Server.

### Change the address or port used by the Site Database Server

If the network environment for the Site Database Server changes, you may want to adjust the IP address and port that it binds to.

**Notice**  
If you change the binding address for the Site Database Server, any Control Center workstations configured to connect using the IP address, rather than a DNS address, will need to be reconfigured as well. Consider using fully qualified domain names for the Site Database Server when configuring Control Center to avoid this in the future.

To change the address or port used by the primary Site Database Server, perform the following operations:

1. Open the Windows Start menu and select `IndigoVision > Site Database Server Setup`.
2. In the Site Database Server Setup tool, click Next.
3. Select *Use an existing site database*.
4. Leave the Site Database Location page unchanged and click Next.
5. Leave the License Server page unchanged and click Next.
6. On the Network Binding page, perform one of the following actions:
   - Choose the IP address on the local PC that the Site Database Server will bind to.
   - Choose *All* to bind to all addresses.
   The IP and Port selected here must be accessible to all Control Center workstations in the system.
7. Continue through the wizard to the final page.
8. After the configuration is completed, click Finish to close the Site Database Server Setup tool.
9. If there is a failover Site Database Server configured, and it was using the old IP address rather than a DNS hostname for the primary Site Database Server, you must reconfigure it after changing the IP address to keep the database synchronized.
   
   For more information, see "Reconfigure a failover Site Database Server" on page 26

10. Update any installations of the Control Center front-end application to use the new Site Database Server address and port using the Control Center Setup tool on each workstation.

To change the address or port used by a failover Site Database Server:

1. To change the IP address or port, see "Reconfigure a failover Site Database Server" on page 26
2. Update any installations of the Control Center front-end application to use the new failover Site Database Server address and port using the Control Center Setup tool on each workstation.

Back up and restore the Control Center site database

You can make back ups without interruption to the Site Database Server service. To back up or restore the Control Center site database, perform the following operations:

**Notice**

When restoring the database, you will also need the Site Database Server Administrator username and password.

To back up the Control Center site database:

1. Open an administrator command prompt on the server where the primary Site Database Server was installed.
2. Navigate to the directory that contains mongodump.exe.
   
   Typically, the path is C:\Program Files\MongoDB\Server\4.2\bin.
3. To get a backup of the site database, execute the following command:

   mongodump.exe --host="127.0.0.1:27017" -u="<SDS administrator username>" -p="<SDS administrator password>" --ssl --sslAllowInvalidCertificates

4. After the command has completed, create a copy of output folder generated by mongodump.exe.
   
   Typically, the output folder path is dump/.

To restore a backup of the Control Center site database:

**Notice**

Any changes made to the Control Center Site Database since the backup will be lost in this process.

1. Create a new site database using Site Database Server Setup tool.
2. Navigate to the directory that contains mongorestore.exe
   
   Typically, the path is C:\Program Files\MongoDB\Server\4.2\bin.
3. Copy the output folder, generated by mongodump.exe, into the same directory as mongorestore.exe.
4. To restore the dump of the site database, execute the following command:
mongorestore.exe --host="127.0.0.1:8134" -u="<SDS administrator username>" - p="<SDS administrator password>" --ssl --drop --preserveUUID --sslAllowInvalidCertificates dump/

The database will be restored from the dump output folder.
5. Restart the IndigoVision Site Database Server and the MongoDB Server services.
6. Restart any instances of Control Center that use the Site Database Server that has been replaced.

**Notice**
To fully back up a Control Center site database, both the Site Database Server and the Site Database Files must be backed up. Ensure that you make regular copies of the Site Database Files alongside backups of the Site Database Server.
As the Site Database Files are stored as a regular Windows directory and file share, you can back them up using a third-party solution.

**Restore the Site Database Server after a hardware failure**
If the Site Database Server host PC has failed and needs to be rebuilt from a backup of the database, follow this procedure.

1. Copy the backed up Site Database Server database directory to the new PC.
2. Install the Site Database Server, following the steps to “Modify or use an existing site database”.
   ► For more information, see "Modify or use an existing site database" on page 13
3. If the same PC was used to host the Site Database Files, it can be recovered by copying the backed up directory and creating a new Windows file share.
4. If a new self-signed certificate has been generated, install it on each Control Center workstation that will use the Site Database Server.
   a. On each Control Center workstation, from the Start menu: IndigoVision > Control Center Setup run the Control Center Setup tool.
   b. To proceed to the Testing Connection page, click Next.
      If the certificate is not trusted by the workstation, you can install it here by clicking Install Certificate.
      ► For more information, refer to the “IndigoVision Control Center Installation Guide”

**Request a new certificate from a third party Certificate Authority (CA)**
IndigoVision recommend that the Site Database Server is secured with a certificate from a trusted CA.

1. Use the CA’s recommended tooling to request a new certificate and ensure that:
   a. The private key is at least 2048 bits in length.
   b. The Common Name (Subject) field matches the address (IP address or hostname) that Control Center workstations will use when connecting to the Site Database Server.
Site Database Server

Subject Alternate Name fields can also be used for Control Center workstations using Windows 10 or later.

c. The Enhanced Key Usage field contains Server Authentication (1.3.6.1.5.5.7.3.1).
d. The PC that will host the Site Database Server generates the request, or that the private key is later imported to that PC.

2. When you have a .pfx or .cer file from the CA, install the certificate on the Site Database Server PC.
   a. Double-click on the certificate file (.pfx or .cer).
   b. In the Windows Certificate dialog, click Install Certificate... to open the Certificate Import Wizard.
   c. Select Local Machine, then click Next.
   d. When asked to confirm that the application can make changes to your device, click Yes to continue.
   e. Allow the tool to determine the correct certificate store and complete the import wizard by clicking Next, then Finish.

3. Now that the certificate is installed, you can choose it from the Site Database Server Setup tool.
   ▶ For more information, see see "Replace the certificate used by the Site Database Server" on page 25

Replace the certificate used by the Site Database Server

To choose a different certificate to use with the Site Database Server, for example when your existing certificate is expiring, or after you have received a certificate from a trusted CA, follow these steps.

If this is a primary Site Database Server:

1. To use the new certificate, from Start > IndigoVision > Site Database Server Setup run the Site Database Server Setup tool.
2. To open the Site Database Configuration page, click Next.
3. Ensure the Use an existing site database option is selected.
4. Proceed through the wizard clicking Next until you get to the Server Certificate page.
5. To choose a different certificate, click Browse, then More choices to find the new certificate.
   Certificates stored in the local machine certificate store that are not expired are listed here.
6. To close the Windows security dialog, click OK.
7. Proceed to the end of the Site Database Server Setup tool by clicking Next.
8. To close the application, click Finish.
9. If this is a failover Site Database Server, it must be re-configured as a failover with the new certificate.
   ▶ For more information, see “Re-configure a failover Site Database Server” on page 26
Upgrade from Control Center 15 or earlier

Notice Control Center is a 64-bit application from 17.1 onwards. This may affect some settings from the earlier versions.

► For more information, see Control Center Installation Guide

If the current system is running Control Center 15 or earlier, a direct upgrade is not possible. At least one Control Center Workstation and License Server must first be upgraded to version 16 to ensure that the Control Center site database is compatible before upgrading to Control Center 17 or later.

1. Follow the Control Center 16 installation guide to upgrade at least one installation of the Control Center front-end application and the License Server to version 16.

💡 You can use a copy of the Control Center 15 or earlier site database during this upgrade to avoid impacting the existing live system.

2. Log in to the Control Center 16 front-end application as an administrator and make a small temporary change to the user configuration, to ensure that the underlying database is upgraded as required.
   For example, add a new user and then delete them.
3. Close the Control Center front-end application.
4. Follow the Control Center Installation guide to upgrade from Control Center 16 as normal.

Re-configure a failover Site Database Server

If the primary Site Database Server IP address, Site Database Administrator credentials, or database location is changed, then the failover Site Database Server must be re-configured to continue synchronizing.

To re-configure the failover Site Database Server:

1. On the failover Site Database Server PC, run the Site Database Server Setup tool from Start > IndigoVision > Site Database Server Setup.
2. On the Site Database Configuration page, choose to Configure as a failover Site Database Server and click Next.
3. On the primary Site Database Server connection page enter the address, username and password for the primary Site Database Server.
4. Click Next and the connection is tested.
   If there is a problem connecting to the primary Site Database Server, the Site Database Server connection is shown again. Check that the details entered are correct and that the primary Site Database Server is available.
5. On the New failover Site Database Location page, enter a new location on this PC where the site database server will store the data synchronized from the primary.

Notice You must choose a new location for the failover database each time the failover Site Database is configured.
6. On the **Network Binding** page, choose the IP address on the local PC that the Site Database Server will bind to. The IP and Port selected here must be accessible to all Control Center workstations in the system.

7. On the **Server Certificate** page, optionally change the TLS certificate for Site Database Server, then click **Next**.
   - For more information on creating certificates for the Site Database Server, see "Request a new certificate from a third party Certificate Authority (CA)" on page 24.
   - For more information on changing certificates for the Site Database Server, see "Replace the certificate used by the Site Database Server" on page 25.

8. If you have chosen to create a self-signed certificate, or if the chosen certificate is otherwise untrusted by Windows, the **Certificate Security Warning** will display. Perform one of the following actions:
   - Check to confirm you have read and understood the warning and click **Next** to proceed.
   - Click **Back** to choose a different certificate.

9. After the configuration is completed, click **Finish** to close the Site Database Server tool.

**Generate a service authentication token for use by Control Center Web or other services**

A service authentication token is needed for use by Control Center Web and other services that access the site database through IndigoVision SDKs.

There is no need to generate a service authentication token if you are not using Control Center Web or another product which instructs you to do as part of its installation and configuration process.

To generate a service authentication token, follow these steps:

1. Open the Windows Start menu and select **IndigoVision > Site Database Server Setup**.
2. In the Site Database Server Setup tool, click **Next**.
3. On the Site Database Configuration page select **Generate a service authentication token** and click **Next**.
4. Take note of the token displayed on the **Generate a Service Authentication Token** page. This will be needed when configuring the service that requires authenticated access to the site database, for example, Control Center Web.
5. Click **Next** to add it to the Site Database Server.
6. After the configuration has completed, click **Finish** to close the Site Database Server tool.

**Change the service authentication token**

If you are using a service, for example, Control Center Web, that requires a service authentication token, it is good practice to change the token on a regular basis.
When changing the service authentication token, any existing services using the old token will not be able to access the Control Center site database until the service is reconfigured with the new token.

To change the service authentication token follow the steps to generate a service authentication token, see “Generate a service authentication token for use by Control Center Web or other services” on page 27. The existing token is replaced with the new token when the changes are applied.
Control Center cannot connect to the Site Database Server or Site Database Files

If the Control Center front-end application cannot connect to the Site Database Server or Site Database Files, it will not start unless the Control Center user has permission for caching the site database.

To diagnose this problem, perform the following operations:

1. On the workstation where the Control Center front-end application is installed, access Start menu > IndigoVision > Control Center Setup to run the Control Center Setup tool.
2. To progress to the Site Database page, click Next.
3. Check that the configured address and port for the Site Database Server and the location of the Site Database Files directory are correct and accessible over the network.
4. Click Next.
   The tool will test the connection to the Site Database Server. Further steps depend on the problem that was detected.

Site Database Server is unavailable

If the Site Database Server is unavailable, perform the following operations:

1. Check that there is a valid network route from the workstation to the server and that all firewalls are correctly configured.
2. Check that the Site Database Server service is running on the Site Database Server PC:
   a. On the Site Database Server PC, click on the Start menu and type services.msc to open the Windows services applet.
   b. Check that IndigoVision Site Database Server is running and start it if it is not.
   c. If the service will not start, re-run the Site Database Server Setup tool (Start menu > IndigoVision > Site Database Server Setup) and check that the configuration is correct.

The Site Database Server certificate is untrusted

If the Site Database Server certificate is untrusted, perform the following operations:

1. View the certificate and check it has not expired or changed unexpectedly
   If the certificate has expired, you need to install a new certificate on the Site Database Server.
For more information, see "Replace the certificate used by the Site Database Server" on page 25

2. If not already done so, install the certificate on the workstation by clicking the **Install Certificate** button.

3. If this is a Windows 8.1 or Windows Server 2012 R2 workstation running the Control Center front-end application, then check the address used by Control Center to connect to the Site Database Server:
   a. Check if the address matches (case sensitive) the **Subject** field in the Site Database Server certificate as these versions of Windows will not validate the **Subject Alternate Name** fields.
      - If the Site Database Server is using the automatically generated self-signed certificate, the subject will be the fully qualified domain name if the server is on a Windows domain, or the machine name if the server is not on a Windows domain.
   b. If the address used to connect to the Site Database Server doesn’t match the **Subject** field, change the address to match the **Subject** field and try again.

No issue with the Site Database Server connection is reported

If the Control Center Setup tool does not report any problems connecting to the Site Database Server, check the following:

- Are the clocks of the Site Database Server and Control Center workstation synchronized?
  - If the clocks are more than 5 minutes apart, it is not possible to log in to Control Center.
  - IndigoVision recommend that all devices, including workstations and the PC hosting the Site Database Server, are synchronized using NTP.
    - For more information, refer to *Installing a Windows NTP Server* in the Control Center Installation Guide.
- Check that there is a stable network connection between the Control Center workstation, Site Database Files directory and the Site Database Server.

If you continue to experience difficulties, contact IndigoVision Technical Support for more assistance.

The Site Database Server Setup tool warns about the security of a certificate

When running the Site Database Server Setup tool, the application checks that the local Operating System trusts the server certificate. If the certificate is revoked by the CA, or is self-signed or has other such security issues, a warning is shown after the **Server Certificate** page.

It is still possible to use the certificate with Control Center and the Site Database Server, if it meets specific criteria. However, IndigoVision recommend that a certificate from a trusted CA is used instead.

- For the list of criteria the certificate needs to meet, see "Request a new certificate from a third party Certificate Authority (CA)" on page 24
Error “Service ‘IndigoVision Site Database Server’ (IVSDS) could not be installed” during installation

When installing, upgrading or uninstalling the Site Database Server, if the following error is shown:

Service ‘IndigoVision Site Database Server’ (IVSDS) could not be installed

Check if the Windows services applet is open and close it, then click the Retry button to continue.

Failure to configure the failover Site Database Server

If you experience difficulty configuring a failover Site Database Server, check the following:

• Is the primary Site Database Server available on the network from the failover PC?
• Is there a firewall blocking access to the MongoDB service on either the failover or the primary PC?
  ▶ For more information, see "Firewall" on page 33
  ▶ For more information on failover Site Database Server, see "Failover Site Database" on page 17
FIREWALL

The direction specified for each port refers to the direction in which a new connection is initiated:

<table>
<thead>
<tr>
<th>Direction</th>
<th>Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN</td>
<td>Connection made to the device on the specified port</td>
</tr>
<tr>
<td>OUT</td>
<td>Connection made by the device to the specified destination port</td>
</tr>
<tr>
<td>IN/OUT</td>
<td>Connection made either to or from the specified port</td>
</tr>
</tbody>
</table>

Ports required by the Site Database Server

<table>
<thead>
<tr>
<th>Service</th>
<th>Port</th>
<th>Destination port</th>
<th>Dir</th>
<th>Comments</th>
<th>Windows Firewall exception automatically added</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Database Server</td>
<td>TCP</td>
<td>8135 (default)</td>
<td>IN</td>
<td>Provides Control Center with secure access to the configuration data for the site.</td>
<td>Yes</td>
</tr>
<tr>
<td>MongoDB</td>
<td>TCP</td>
<td>8134</td>
<td>IN</td>
<td>Required on both primary and failover Site Database Server only if the site is configured with a failover Site Database Server.</td>
<td>No</td>
</tr>
</tbody>
</table>

Additional ports may be required for Windows services including access to network drives for the Site Database Files.