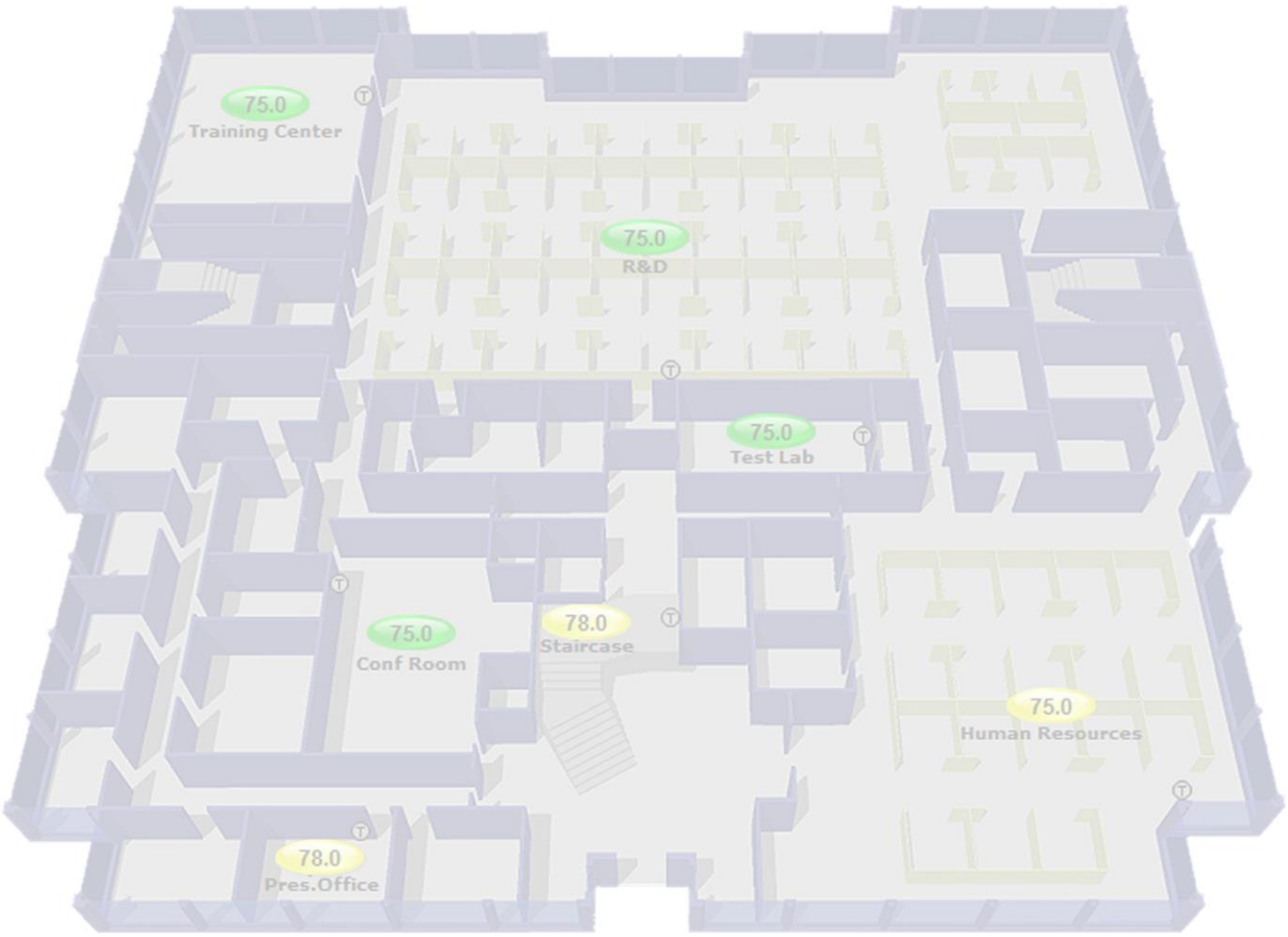
i-Vu® Application v9.0

Upgrade Guide



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 Verify that you have the most current version of this document from **www.hvacpartners.com**, the **Carrier Partner Community** website, or your local Carrier office.

Important changes are listed in **Document revision history** at the end of this document.

Contents

If upgrading from an i-Vu® Standard or Plus system

Prerequisite

Verify that you have the latest version of all the add-ons that are currently used. Some have been updated for the i-Vu® application. Be sure to have those updated add-ons ready to install during the upgrade process.

Before you upgrade an i-Vu® Pro database

- **Server requirements**—Verify that the i-Vu® server computer meets the v9.0 *i-Vu® server requirements* (page 3).

- **Trends**— i-Vu® Pro v6.5 and later systems have a different Trends database structure than earlier systems. If you are upgrading a v6.0 or earlier system, use one of the following methods to convert your current trends:
  - Before upgrading, use the Trend Conversion Utility (highly recommended for large trend databases)
  - As part of the upgrade process in SiteBuilder's upgrade wizard

  See *Converting your trend database* (page 4).

- **BACnet Bindings**—i-Vu® v6.0 and later uses only dynamic binding for communication between devices. Before you upgrade from v4.2 or earlier, uncheck **Use Static BACnet Bindings** on the **System Settings** > **Communications** tab, restart the BACnet connection, and then immediately run the **Reports** > **Network** > **Controller Status** report to verify that you have no communication problems. If you do, contact Carrier Control Systems Support.

- **Access® and MSDE databases**—As of v6.5, SiteBuilder no longer supports Access and MSDE database types. If your system uses one of these, you need to migrate to a Derby database in your current i-Vu® version before upgrading to v9.0.
  NOTE Derby became a supported database type in v6.0. If your current system is v5.1 or earlier, you will need to upgrade to v6.0 or v6.5 (32-bit only), migrate to Derby, and then upgrade to v9.0 (64-bit).

- **SQL Server® Express database**—If your system is currently using an SQL Server Express database running on a 32-bit i-Vu® server, you must do the following before upgrading to v9.0:

  1. Shut down i-Vu Server application.
  2. On the server's **Start** menu, select **All Programs** > **Microsoft SQL Server** > **Configuration Tools** > **SQL Server Configuration Manager**.
  3. In the left pane, select **Protocols for SQLEXPRESS**.
  4. In the right pane, right-click **Named Pipes**, and then select **Enable**.
  5. In the left pane, select **SQL Server Services**.
  6. In the right pane, right-click **SQL Server (SQLEXPRESS)**, and then select **Restart**.

- **Backup**—Always back up your database before upgrading. A failed upgrade could corrupt your data.

  Back up a Derby or SQL Server Express database by copying the system folder in **I-Vu_Pro_x.x\webroot**.

- Back up a MySQL, MS SQL Server, Oracle, or PostgreSQL using the database management system's backup method. Also, copy the system folder in **I-Vu_Pro_x.x\webroot.**

  CAUTION Do not use SiteBuilder's **Replicate** feature to back up your database.

i-Vu® server requirements

The recommended minimum for an i-Vu® server:

- Dual core processor
- 4 GB RAM
- 30 Gigabyte hard drive
- Communications link of 10 Mbps or higher
- 64-bit server (See *Upgrading from a 32-bit server to a 64-bit server* (page 9).)

The i-Vu® application will work with slower computers and slower links, but the results may not be satisfactory.

The i-Vu® server must be 64-bit. Memory requirements vary, based on the:

- number of pieces of equipment and device instances
- size of the control programs
- number of simultaneous users logged in to the i-Vu® application

For this size system...	**With this number of...**		**The computer should have at least a dual core processor and...**				
	Instances of equipment and devices [1]	Physical Points and Display Objects	Passmark Total Score [2]	Passmark Single-threaded Score	RAM Minimum/ Recom-mended	JVM Memory Minimum/ Recom-mended	Disk Mark[4]
Small	0 - 250	0 - 1000	2000	800	4 / 4GB	1 / 1GB	3000
Medium	250 - 1000	1000 - 5000	3000	1000	4 / 8GB	2 / 4GB	5000
Large	1000 - 10,000	5000 - 50,000	5000	1400	6 / 12GB	4 / 8GB	15000
Huge	more than 10,000	more than 50,000	6500	1600	16 / 16GB [3]	12 / 12GB	30000

[1] Total number of control programs and controllers.

[2] For more information, see www.CPUbenchmark.net.

[3] For a huge system with minimal user activity, the average piece of equipment or instance device requires approximately 300KB of server RAM. Contact Technical Support for server sizing recommendations.

[4] SATA SSDs are recommended as baseline performance for i-Vu® on all systems. Large systems benefit from the faster PCIe interface SSDs on both the i-Vu® and database servers. Passmark's Disk Rating "Disk Mark" can be useful in gauging disk performance when designing new servers.
Rotational Drives: 900-1500
SATA SSDs: 3000-5000
PCIe SSDs: 10000-30000

Converting your trend database

If you are upgrading from v6.0 or earlier, you must convert your current trend database to the trend database structure for v6.5 and later systems.

- For a Derby database, the trends are converted as part of the upgrade process in SiteBuilder's upgrade wizard.
- For an SQL Server, MySQL, or PostgreSQL database, use one of the following methods to convert your current trends:
  - As part of the upgrade process in SiteBuilder's upgrade wizard. The i-Vu® system is not running during the upgrade.
  - Before upgrading using the Trend Conversion Utility (highly recommended for large trend databases. See "To determine the size of your trend database" below.) This method is faster and the utility can run while the i-Vu® system is running.

  Before using either of these methods, verify that the trend database management system user has 'drop' authority.

NOTES

- If your trend database is on a different server than the i-Vu® system, you have the option of installing and running the Trend Conversion Utility on either server. However, the conversion will run faster if you run it on the trend database server.
- If you created any custom software to access the i-Vu® trend data, it may not work with the new trend database structure. Contact Carrier Control Systems Support for assistance.
- Upgrading to and/or running a i-Vu v6.5 or later system uses more database resources than previous versions.

CAUTIONS

- If you use the Trend Conversion Utility, back up your system before you run the utility and again before you upgrade the system in SiteBuilder. Make the backup using the database management system's backup method, and also copy the system **webroot** folder.
- Disable trend expiration in your source trend database. In i-Vu®, go to **System Settings** > **Scheduled Tasks**, and uncheck **Remove expired historical trends daily at ___**.

To determine the size of your trend database

In the i-Vu® interface, select **System Options** > **System Settings** > **General** tab > **System Statistics** button.

Size	Small	Medium	Large	X-Large
Trend Samples	< 100M	100M - 500M	500M - 650	> 650M
Conversion time using Trend Conversion Utility	1 hour	1 - 4 hours	4 - 6 hours	> 6 hours

Options for migrating and upgrading the database

NOTE The "system folder" refers to the folder with the name of your site as in the following example, **i-Vu_Pro_x.x** > **webroot** > **acme_corp**.

From	To	Steps to migrate to the 64-bit i-Vu® Pro v9.0 application on a new computer
Access	Access or MSDE	SiteBuilder v6.5 and later no longer supports Access and MSDE database types. If a system uses one of these, we recommend that you migrate to a Derby database in the 32-bit v6.0 i-Vu® application before upgrading to v9.0.
Access	Derby	**1** Install the i-Vu® Pro v6.0 32-bit application from the DVD on your existing computer. **2** Upgrade database in SiteBuilder. Select **File** > **Upgrade i-Vu System**. **3** In SiteBuilder, select **File** > **Manage Database** > **Migrate/Replica** > **Migrate**. Select **Derby**. **4** Copy upgraded i-Vu® system folder to your own USB drive. **5** On your new computer, install the 64-bit i-Vu® Pro v9.0 application from the Installation USB drive. **6** Upgrade database in SiteBuilder. Select **File** > **Upgrade i-Vu System**. **7** Copy the system folder from your USB drive into the **programdata\systems** folder or other folder of your choice. **8** Upgrade database in SiteBuilder. Select **File** > **Upgrade i-Vu System**.
Access	MS SQL	SiteBuilder v6.5 and later no longer supports Access and MSDE database types. If a system uses one of these, we recommend that you migrate to a Derby database in the 32-bit v6.0 i-Vu® application before upgrading to v9.0. **1** On your existing computer, install the 32-bit i-Vu® Pro v6.0 application from the DVD. **2** Upgrade database in SiteBuilder. Select **File** > **Upgrade i-Vu System**. **3** In SiteBuilder, select **File** > **Manage Database** > **Migrate/Replica** > **Migrate**. Select **Derby**. **4** Copy upgraded i-Vu® system folder to your own USB drive. **5** On your new computer, install the 64-bit i-Vu® Pro v9.0 application from the Installation USB drive. **1** Install 2014, 2016, 2017, or 2019 MS SQL. See *Install the i-Vu Pro® application and SQL Server on a new computer* (page 13). **6** Copy the system folder from your USB drive into the **programdata\systems** folder or other folder of your choice. **7** In SiteBuilder, select **File** > **Manage Database** > **Migrate/Replica** > **Migrate**. Select **MS SQL**.

From	To	Steps to migrate to the 64-bit i-Vu® Pro v9.0 application on a new computer
MSDE	MS SQL	SiteBuilder v6.5 and later no longer supports Access and MSDE database types. If a system uses one of these, we recommend that you migrate to a Derby database in the 32-bit v6.0 i-Vu® application before upgrading to v9.0. **1** On your existing computer, install the 32-bit i-Vu® Pro 6.0 application from the DVD. **2** Upgrade database in SiteBuilder. Select **File** > **Upgrade i-Vu System**. **3** In SiteBuilder, select **File** > **Manage Database** > **Migrate/Replica** > **Migrate**. Select **Derby**. **4** Copy upgraded i-Vu® system folder to your own USB drive. **1** On your new computer, install the 64-bit i-Vu® Pro v9.0 application from the Installation USB drive. **2** Install 2014, 2016, 2017, or 2019 MS SQL. See *Install the i-Vu Pro® application and SQL Server on a new computer* (page 13). **5** Copy the system folder from your USB drive into the **programdata\systems** folder or other folder of your choice. **6** In SiteBuilder, select **File** > **Manage Database** > **Migrate/Replica** > **Migrate**. Select **MS SQL**.
MS SQL	MS SQL	**1** Copy existing i-Vu system folder on your own USB drive. **2** Backup 4 databases in MS SQL on your USB drive. **3** On your new computer, install the 64-bit i-Vu® Pro v9.0 application from the Installation USB drive. **4** Install 2014, 2016, 2017, or 2019 MS SQL. See *Install the i-Vu Pro® application and SQL Server on a new computer* (page 13). **5** *Restore above databases to upgraded MS SQL* (page 17). **6** On your new computer, install the 64-bit i-Vu® Pro v9.0 application from the Installation USB drive. **7** Upgrade database in SiteBuilder v9.0. Select **File** > **Upgrade i-Vu System**.

Registering and downloading your i-Vu® license

To register your software, you must obtain a license from Carrier and then apply it in the i-Vu® Pro interface.

1 Log in to the Carrier Community Portal website.

NOTES

- Only Carrier authorized personnel may access the Community Portal website. To set up your account, please contact Control Systems Support with the following information: name, phone number, e-mail address, office address, and your password of choice.
- If you are an end-user or contractor, please contact your local Carrier office to obtain your license.

2 Click **Order Management** > **Licenses & Subscriptions** > **Software Licenses**, then click the link.

3 Expand the section containing the unregistered license(s) indicated by the  symbol on the right side of the blue bar.

4 Click on the row that shows **unregistered** in the **Registration Status** column.

5 In **License Details**, complete the fields under **Owner Information** and **Site Information**.

6 Click **Register License**.

7 Check **I agree to the terms of use**.

8 Click **Download License** and then save the .properties file to a convenient location to use when installing the i-Vu® Pro application.

To apply the license to the i-Vu® application

During the i-Vu® installation, in the **Setup Wizard**, on the **Product License** screen, check **Browse to a different license**, and select the site license you obtained.

NOTES

- Selecting the default license results in a prompt appearing every few minutes in the i-Vu® interface to remind you to apply your site license.
- Do not edit any part of this registered license file. Editing a license file invalidates the license.
- Store the license in a safe location.

To apply the site license after the installation:

1 In the i-Vu® interface, select **System Options** > **License Administration**.

2 Browse to the license file.

3 Click **Apply**.

4 Restart i-Vu® Server using the rebootserver manual command.

Upgrading to the i-Vu® Pro v9.0 application

To begin, see *To register and download your i-Vu® Pro license* (page 7).

If your database is Access®, MSDE, or SQL Server Express, be sure you have followed the instructions in *Before you upgrade* (page 2).

The table below is a quick outline of steps. Each step is explained in detail in the sections that follow.

Existing system	Notes	Procedure
i-Vu® CCN Pro v3.1	You must install the latest driver in all i-Vu® Integrators. They download automatically with the installation. See Upgrade v3.1 or v4.2 database in SiteBuilder.	SiteBuilder v6.5 and later no longer supports Access and MSDE database types. If a system uses one of these, we recommend that you migrate to a Derby database in the 32-bit v6.0 i-Vu® application before upgrading to v9.0. **1** On your new computer, install the 64-bit i-Vu® Pro v9.0 application from the Installation USB drive. **2** Upgrade database in SiteBuilder. Select **File** > **Upgrade i-Vu System**. **3** Upgrade graphics in ViewBuilder, using the plug-in.
i-Vu® CCN Pro v4.2	See Upgrade v3.1 or v4.2 database in SiteBuilder.	SiteBuilder v6.5 and later do not support Access and MSDE database types. If a system uses one of these, we recommend that you migrate to a Derby database in the 32-bit v6.0 i-Vu® application before upgrading to v9.0. **1** On your new computer, install the 64-bit i-Vu® Pro v9.0 application from the Installation USB drive. **2** Upgrade database in SiteBuilder. Select **File** > **Upgrade i-Vu System**.
i-Vu® Pro v6.5		**1** If you have a 32-bit system, you can only run v9.0 on a 64-bit server. See Upgrading from a 32-bit server to a 64-bit server. **2** Follow the steps in *Install the i-Vu* (page 10)® *Pro application and use SiteBuilder to upgrade database.* (page 10)

For more details on upgrading to the i-Vu® Pro v9.0 application and migrating to different databases, see Options for migrating and upgrading the database.

Upgrading from a 32-bit server to a 64-bit server

i-Vu® v9.0 will not run on a 32-bit server. To upgrade, first install i-Vu® v9.0 on a 64-bit server. The method for upgrading your system depends on the database type or size.

Derby database

1. Copy your existing system's **i-Vux.x\webroot**<system name> folder.
2. Paste the copied folder under a folder of your choice on the 64-bit server. For example, **i-Vux.x\programdata\systems**.
3. Open the system in SiteBuilder.
4. Select **File** > **Upgrade** > **i-Vu system** and follow the prompts to upgrade the system.

All Non-Derby databases

1. Open your existing system in SiteBuilder.
2. Select **File** > **Manage Database** > **Migrate/Replicate**, and then select **Replicate database** to create a copy of the system in a Derby database.
3. Copy the replicate system's **i-Vux.x\webroot**<system name> folder.
4. Paste the copied folder under a folder of your choice on the 64-bit server. For example, **i-Vux.x\programdata\systems**.
5. Open the system in SiteBuilder.
6. Select **File** > **Upgrade** > **i-Vu system** and follow the prompts to upgrade the system.
7. Select **File** > **Manage Database** > **Migrate/Replicate**, and then select **Migrate to a different database type** to change the system back to the original database type.

Very large databases

If you are moving a very large system to a 64-bit server, contact Carrier Control Systems Support for assistance.

Install the i-Vu® Pro v9.0 application and use SiteBuilder to upgrade database

SiteBuilder v6.5 and later do not support Access and MSDE database types. If a system uses one of these, we recommend that you migrate to a Derby database in the 32-bit v6.0 i-Vu® application before upgrading to v9.0. See Options for migrating and upgrading the database.

Typically, the file path for an i-Vu® Pro system is the default path: C:\i-Vu_Pro_x.x.

1. Back up your system before upgrading. Once a system is upgraded, you cannot retrieve or access the database with your previous i-Vu® installation.
2. Install the i-Vu® Pro v9.0 application from the Installation USB drive.
3. Open SiteBuilder v9.0 and select **File** > **Upgrade i-Vu System**.
4. Click **Browse** and select the system folder for your previous i-Vu® Pro system: C:\i-Vu_Pro_x.x\webroot.
5. Check **Make this the default system for i-Vu** and click **Next**.
6. Confirm that you have backed up and click **Next** when the **Upgrade complete** message appears.
7. The upgrade process copies the necessary system files to your i-Vu® Pro v9.0 installation folder and performs the required database upgrade steps.

   Upgrading drivers

   - When upgrading a v3.1 database, the drivers for the i-Vu® Integrators are automatically updated to the latest drivers. v3.1 drivers do not function in v9.0.
   - When upgrading a v4.2 or later database, a dialog lists all the current drivers and you can uncheck them if you do not want them to be upgraded. v4.2, v6.0, and v6.5 drivers will function in v9.0.
8. Log in to your new i-Vu® Pro v9.0 application using an Administrator account.

Upgrade from Access and i-Vu® Pro v3.1 or v4.2 application to Derby, new computer, and 64-bit v9.0

i-Vu® Pro v3.1 and v4.2 only ran on a 32-bit platform and v9.0 is only 64-bit. In the 32-bit v6.0 of i-Vu®, Access or MSDE is supported and they are not supported in the 64-bit version.

Access®, MSDE, and SQL Server Express databases—As of v6.5, SiteBuilder no longer supports Access and MSDE database types. As of v7.0, SiteBuilder no longer supports SQL Server Express. If your system uses one of these, you need to migrate to a Derby database in your current i-Vu® version before upgrading to v9.0.
NOTE Derby became a supported database type in v6.0. If your current version is earlier, you will need to upgrade to v6.0 32-bit, migrate to Derby, and then upgrade to v9.0 64-bit.

1. Install the 32-bit version of the i-Vu® Pro v6.0 application on your current computer.

   NOTE You will still have your i-Vu® Pro v3.1 or v4.2 system there, also.
2. Make a backup of your current i-Vu® system by copying the system folder under the **webroot** folder.
3. Upgrade database in SiteBuilder. Select **File** > **Upgrade i-Vu System**.
4. In SiteBuilder, select **File** > **Manage Database** > **Migrate/Replica** > **Migrate**. Select **Derby**.
5. Copy the migrated system folder from the i-Vu® v6.0 **webroot** folder to your own USB drive.
6. Install the i-Vu® v9.0 application from the Installation USB drive.
7. Copy the saved Derby database from your USB drive to the **programdata\systems** folder or any other folder of your choice of the new i-Vu® Pro v9.0 application.

Upgrade from the i-Vu® v3.1, v4.2, or v6.0 application that uses SQL Server 2000, 2005, 2008, 2012 to SQL Server 2016, 2017, or 2019 on a new computer

Follow these procedures to successfully upgrade and migrate your system and computer:

1. *Copy system folder from your previous the i-Vu® Pro application and back up the i-Vu® databases in MS SQL* (page 12).
2. *Install the i-Vu® Pro v9.0 application and SQL Server on your new computer.* (page 13)
3. *Restore previous i-Vu® databases to upgraded SQL.* (page 17)
4. *Upgrade system in SiteBuilder* (page 17).

i-Vu® Pro v3.1 or later system folder and backup in SQL to USB drive

CAUTION You must have installed the i-Vu® Pro v9.0 application on your existing computer and set up a database in SiteBuilder before following these steps.

Use this procedure if you have been using SQL Server 2000, 2005, 2008, or 2012 and are upgrading to SQL Server 2014, 2016, 2017, or 2019 on a new computer.

Copy data from computer used for i-Vu® Pro v3.1 or v4.2

1. Stop the i-Vu® Pro Server and close any i-Vu® applications. If the i-Vu® Pro Server is installed as a service, stop it.
2. Browse to your i-Vu® Pro v3.1 or later webroot folder and copy the system folder to a USB drive.

In SQL, back up the i-Vu® databases to a USB drive

NOTE The i-Vu® databases are named main, alarms, audit, and trends.

1. Log in to **SQL Studio Manager** using your Windows Authentication login.
2. Expand **Databases** on the left.
3. Right-click any of the 4 databases and select **New task** > **Backup**.
4. In the **Backup** > **General** tab, verify that the **Backup Type** is **Full**.
5. Under **Destination**, click **ADD**.
6. In the popup window, browse to the USB drive and enter a filename (i.e. main, alarms etc..)
7. Click **OK** and then **OK** again to return to the original backup window.
8. Under **Options**, check **Overwrite all existing backup sets**.
9. Click **OK** to start the backup.
10. Repeat the above steps for the 3 remaining i-Vu® databases.

Install the i-Vu® Pro v9.0 application and SQL Server on new computer

After installing the i-Vu® Pro v9.0 application from the Installation USB drive on your new computer, use the following steps:

1 If you do not already have MS SQL installed, install one of the supported versions and any applicable SQL service packs. For instructions on how to install any version of SQL Server, go to http://msdn.microsoft.com/en-us/library/default.aspx and, in the Search window, type **Install <your SQL Version >**. Select Authentication Mode - Mixed Mode during setup and enable TCP/IP on port 1433.

NOTE As you install MS SQL Server, you must select certain options to use with i-Vu®. For all other options, you may keep the defaults or select your own values. Select the following:

- SQL Server Database Services
- Workstation components, Books Online, and development tools
- Authentication Mode - Mixed Mode (Windows Authentication and SQL Server Authentication)

  NOTE The password you specify grants extensive privileges.
- Service Account for database engine – NT Authority\System
- Enable TCP/IP on port 1433

2 If already installed, you must have selected **Authentication Mode - Mixed Mode** during setup and have TCP/IP enabled on port 1433.

If you are the database administrator and TCP/IP is not enabled on port 1433, or you are unsure of the port, follow the procedure below, 'To enable TCP/IP on port 1433' and then proceed to Step 1.

Install the program and follow the instructions below.

To enable TCP/IP on port 1433

a Click **Start** > **All Programs** > **Microsoft SQL Server <your SQL version>** > **Configuration Tools** > **SQL Server Configuration Manager**.

b Expand the **SQL Server Network Configuration**.

c Select **Protocols** for <server instance> where <server instance> is the SQL Server running the i-Vu® application.

d In the next window, under **Protocol Name**, double-click **TCP/IP**.

e On the **Protocol** tab, under **General**, next to **Enabled**, select **Yes**.

f On the **IP Address** tab, scroll down to the **IPAll** section.

g Clear any values from the **TCP Dynamics Port** field.

h In the **TCP Port** field, enter `1433`, then click **OK**.

i Close the **SQL Server Configuration Manager**.

j Restart the SQL Server Service.

Step 1: Connect to the database engine for i-Vu® SQL Server

a Determine if Microsoft SQL is running on the i-Vu® server:

- If Microsoft SQL is running on the i-Vu® server, select **Start** > **Programs** > **Microsoft SQL Server** > **SQL Server <your SQL version>** > **Management Studio**.
- If Microsoft SQL is running on a different computer, download the SQL Management Studio and install it on the i-Vu® server.

b In the **Connect to Server** dialog box, select or enter the information using the table below.

c Click **Connect**.

To set up the databases for a new i-Vu® system, complete steps 2, 3, and 4 below.

Field	Notes
Server type	Database engine.
Server Name	The address or name of the computer running the SQL Server service. Get from your database administrator.
Authentication	Get from your database administrator.
Username	Get from your database administrator.
Password	Get from your database administrator.

Step 2: Create a database instance

a In the **Object Explorer** pane, right-click **Databases**, then select **New Database**.

b In the **Database name** field, type a name such as `xxx_main`; this will be your **Main Database Connect String Instance** in SiteBuilder. Record the name below.

c Under **Select a Page**, select the **Options** page.

d From the **Recovery model** drop-down list, select **Simple**.

e Click **OK**.

f Repeat steps a-e to create the **Alarms**, **Trends**, and **Audit Log** databases.

NOTE Database names are case-sensitive and must be 18 characters or less in length.

Step 3: Create a database user

a In the **Object Explorer** pane, click the plus sign to the left of **Security**.

b Right-click **Logins**, then select **New Login**.

c In the **Login name** field, type in a login name for i-Vu®, such as xxx_User; this will be your **Database User Login** in SiteBuilder.

d Select **SQL Server authentication**.

e In the **Password** and **Confirm password** fields, type a password; this will be your **Database User Password** in SiteBuilder.

f Clear the following checkboxes:

- **Enforce password policy**
- **Enforce password expiration**
- **User must change password at next login**

g In the **Default database** drop-down list, select **master**.

h In the **Select a page** pane, select the **User Mapping**.

i Under **Users mapped to this login**, select the **Map** checkbox next to a database name you created in Step 2.

j Under **Database role membership for:** section, select the following checkboxes:

- **db_owner**
- **public**

k Click **OK**.

l Repeat steps i-k for each remaining database.

m Close SQL Server Management Studio.

Step 4: Set up the SQL Server databases in SiteBuilder

a In SiteBuilder, select **File** > **New**.

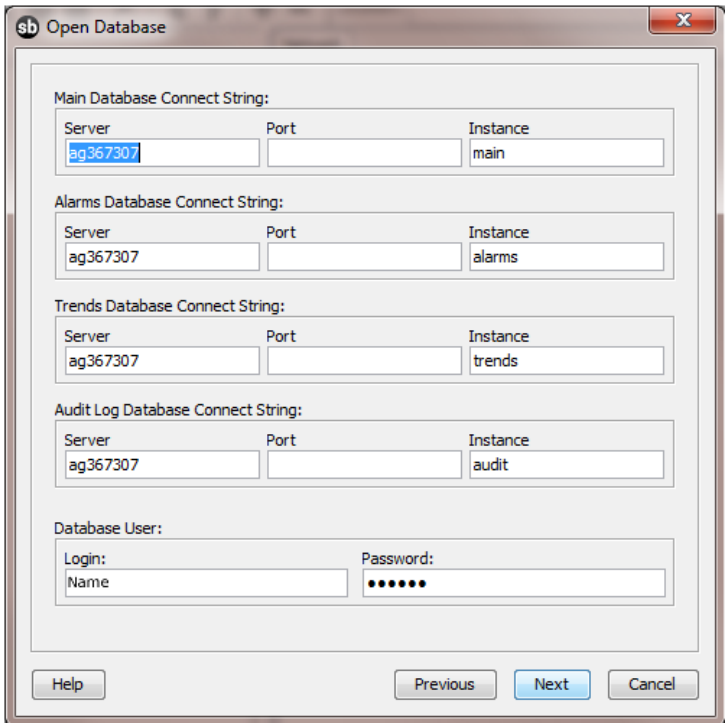
b Type a name for the system.

c Select SQL Server from the **Database Type** drop-down list.

d Select **Make this the default system for i-Vu®** if you want the i-Vu® application to automatically run this system each time it starts.

e Complete the remaining fields, then click **Next**.

f Enter the **Connect String** information for each i-Vu® database. See below.



g Click **Finish**.

NOTE To change **Database Connect Strings** for an existing system, select **Modify database connection parameters** in the **File** > **Open** dialog box and then click **Next**.

Database Connect Strings:	
Server	Type one of the following: • `localhost` if the i-Vu® application and the database are on the same machine • The name or IP address of the machine that the database is on if different than the i-Vu® application
Port	Do one of the following: • Type the default port of 1433. • Type the port number that the database uses for communication if different than the database default.
Instance	The name that you gave the i-Vu® database in step 2b. **NOTE** If the 4 i-Vu® databases do not reside under the default instance of SQL, then the instance name must be specified under the **Instance** column. The syntax for specifying the instance name of the SQL server is `<Database>;instance=<instance name>`. For example, if the SQL instance name is hvac, the syntax for the Instance field for the main database called i-Vu_Main would be `i-Vu_Main;instance=hvac`.

Database User:	
Login	The username that you entered in step 3c.
Password	The password that you entered in step 3e.

Restore i-Vu® Pro v3.1 or later databases to upgraded SQL

1. Insert the USB drive that contains the database backups from your i-Vu® Pro v3.1 or later system into your computer.
2. Open **SQL Studio Manager** and expand Databases.
3. Right-click the **Main database** and select **Tasks** > **Restore** > **Database**.
4. Under **Source** for restore, select **From device**.
5. Click on the browse icon on the right.
6. Click the **Add** button in the **Specify Backup** window.
7. Browse to the USB drive that contains the backed-up databases and select main.back (or whatever name you assigned to the main database).
8. Click **OK** twice to return to the **Restore database** window.
9. Check the box under the Restore column.
10. Select Options at the top left of the **Restore database** window.
11. Check **Overwrite existing database** and click **OK**.
12. A popup message will appear showing the restore was successful.
13. Repeat the above for the remain three databases.
14. Close **SLQ Studio Manage**r.

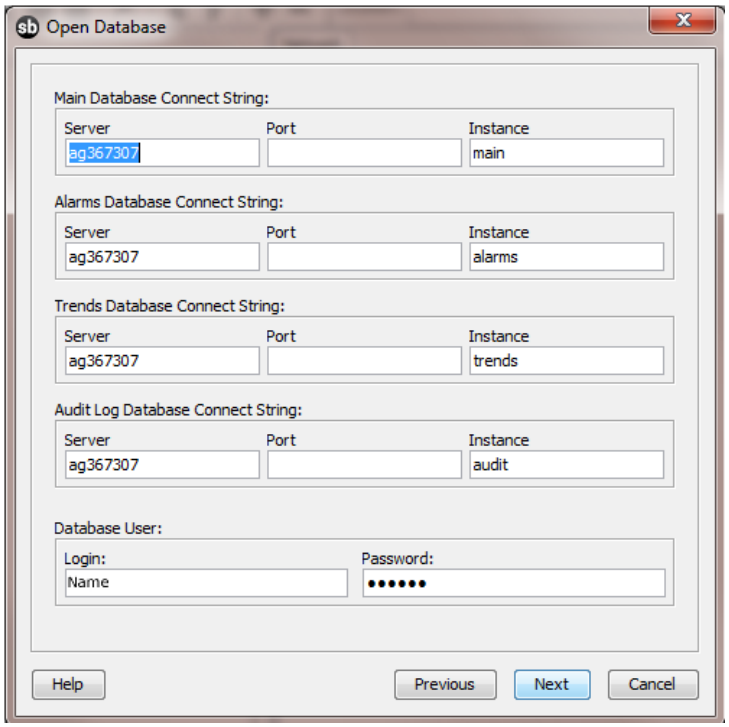
Upgrade in SiteBuilder v9.0

1. Open **SiteBuilder** v9.0 and select **File** > **Upgrade i-Vu Pro System**.
2. Browse to your i-Vu® Pro v3.1 or later system folder on the USB drive.
3. Enter a new system name, if desired.
4. Enter the name of the computer where the SQL server is installed.

   NOTE This is usually the PC name itself. (See below)
5. Leave the port field blank unless the IT department insists that a port number be entered.

   NOTE Default port number for SQL Server is 1433.
6. Enter the name of the four databases that were created in SQL Studio Manager on the new computer.
7. Enter the username and password that was created in SQL Studio manager for the new i-Vu® Pro v9.0 installation.

8 Click **Next**.



9 Confirm that you have backed up and click **Next** when the **Upgrade complete** message appears.

10 The upgrade process copies the necessary system files to your i-Vu® Pro v9.0 installation folder and performs the required database upgrade steps.

Upgrading drivers

- When upgrading a v3.1 database, the drivers for the i-Vu® Integrators are automatically updated to the latest drivers. v3.1 drivers do not function in v9.0.
- When upgrading a v4.2 database, a dialog lists all the current drivers and you can uncheck them if you do not want them to be upgraded. v4.2 drivers will function in v9.0.

11 Enter a password and click **Next** to complete the database upgrade.

NOTE If the 4 i-Vu databases do not reside under the default instance of SQL, then the instance name must be specified under the **Instance** column. The syntax for specifying the instance name of the SQL server is `<Database>;instance=<instance name>`. For example, if the SQL instance name is hvac , the syntax for the Instance field for the main database called iVu_Main would be `iVu_Main;instance=hvac`.

Update your routers and controllers for the i-Vu® Pro v9.0 application

IMPORTANT! Update your routers and controllers only **once**. Use either the i-Vu® **or** Field Assistant application.

Router and controller configurations are maintained when they are updated using the procedure below.

Step 1: Update the files for routers and controllers

1 On the i-Vu® navigation tree, right-click the router or controller to update and select **Driver Properties**.

2 Select **Properties** tab > **Update** tab > **Add New Driver** tab.

3 If the database contains two or more controllers, select which routers to change:

- This controller only
- All controllers on this network that use the current driver version
- All controllers in the system that use the current driver version

4 Click **Update**.

5 Click **Save**.

NOTES

- Check **Stage driver in controller** to stage the driver to the controller before installing it. Use this option to avoid interrupting controller function when installing the driver.
- Click **Delete Unused** to delete all unused drivers in <system_name>**drivers**.

Step 2: Update the files for CCN controllers

1 In the navigation tree, select the CCN device manager associated with the controllers that are to be updated.

2 Select **Devices** > **CCN Discovery** and re-scan any controllers that need to be updated by checking **Rescan Controllers Selected Below for Configuration Changes** and clicking **Start Scan**.

Step 3: Apply the update to routers and controllers

1 Select the **System**  in the navigation tree and then select the **Downloads** page.

2 If you wish to apply the new SAL file to your entire system, you can use this page to compare to your navigation tree and verify that you have selected all of your routers and controllers for download.

NOTE Only the CCN Gateway and device managers require download, so the CCN controllers/equipment are not listed.

3 A network's controllers download in the order shown. To change the order, select a controller(s), then drag and drop or click **Move to Top** or **Move to Bottom**.
EXCEPTION If a controller's router requires a download, it will download first regardless of its position on the Downloads page. Click the **Start** button.

NOTES

- Use **Ctrl+click**, **Shift+click**, or the **Select All** checkbox to select multiple controllers.

4 See To download from the Downloads page in Help for more details.

Upgrade i-Vu® Pro v3.1 graphics and custom control programs

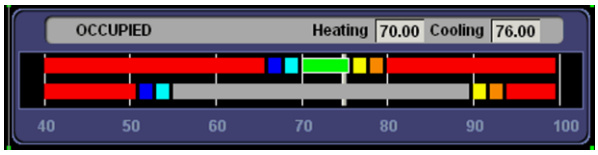
Upgrade v3.1 graphics

i-Vu® 3.1 graphics files (.view files) must be upgraded to be used in the i-Vu® Pro v9.0 application.

The graphics were copied to your v9.0 system when you upgraded the database in SiteBuilder v9.0. However, you must upgrade your graphics in ViewBuilder v9.0.

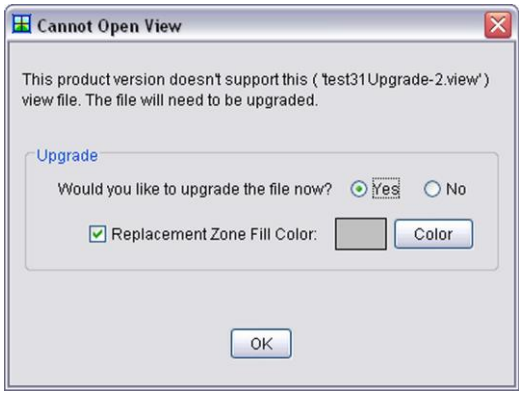
Area graphics in the i-Vu® CCN Pro v3.1 application may have been designed to use variable color expressions, which change zone color based on fixed temperature ranges. Colors in a zone on a floorplan graphic do not change dynamically in i-Vu® Pro v9.0. The Equipment Color control oval  takes over this function and changes color based on the specific setpoints for the zone.

The equipment's color in the oval is based on the current zone temperature and the position of the colored bands in the setpoint control.



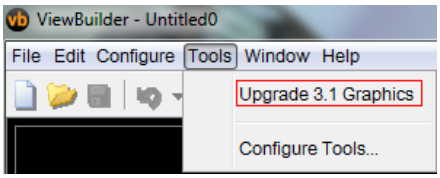
Floorplan images used in the i-Vu® v3.1 application often had random background colors assigned to each dynamically changing zone. These background colors will **not** be shown once the graphics have been upgraded.

When you open an i-Vu® v3.1 .view file in ViewBuilder, you are prompted to upgrade the graphic and select a fill color for the zone. We recommend selecting a neutral color that is distinguishable from the wall color.



You can convert one graphic at a time, or you can convert an entire folder at once by installing the plug-in before upgrading your graphics.

1 Select **Tools** > **Configure Tools** > **Upgrade 3.1 graphics** and click **Add.**



2 Select **upgrade-3_1-graphics.viewbuilder-plugin** and click **Open.**

3 Once the plug-in is installed, all the graphics in a folder (views and symbols) may be upgraded at once by selecting **Tools** > **Upgrade 3.1 Graphics.**

Upgrade v3.1 custom control programs

Library

The number of types of devices supported in the built-in equipment library has been greatly expanded since the i-Vu® Pro v3.1 application.

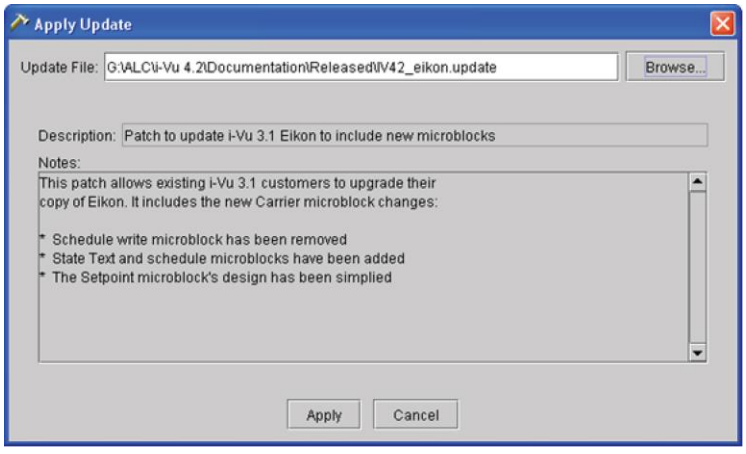
- If the control program in the Integrator is only being used to access values in the CCN device, it is strongly recommended to use the control programs that are automatically generated when the devices are discovered.
- If equipment is using control programs that were automatically generated during discovery in v3.1, you can select those equipment on the **Devices** page and re-scan them to update their control programs and graphics to the current versions.
- If you wish to replace a control program that was made in the Snap application with a program that is automatically generated, you will have to delete the equipment from the **Devices** page and rediscover it. Deleting an equipment results in losing schedules, alarm actions, setpoints, or other parameters that are defined in that equipment. Schedules or alarm actions defined further up the hierarchy will not be affected.

Custom Control Programs

- If you have custom logic created in the Snap application that is being used as a part of the control sequence, you cannot replace the custom control program with the automatically-generated one.
- Your Snap-created control program will still run in an i-Vu® Integrator that has been upgraded to run with the i-Vu® Pro v9.0 application.
- In order for a custom control program to support any of the new features available in the i-Vu® Pro v9.0 application, it is necessary to apply an update to the Snap application under the i-Vu® Pro v3.1 application.

To apply the Snap update:

1. Download the update file called **Iv42_eikon.update** from the Service Intranet.
2. Open SiteBuilder v3.1.
3. Select **Actions** > **Apply Update.**
4. Browse to the location of the .update file and select it.
5. The screen should appear as seen below. Click **Apply** to apply the Snap patch.



- You will need to use the Snap application that was a part of your i-Vu® Pro v3.1 system to edit any custom control programs.

  NOTE Custom programs created with Snap will only run in an i-Vu® Integrator. They are not supported in i-Vu® CCN Routers.

Local override

- Local overrides were not allowed in the i-Vu® Pro v3.1 application.
- Control programs that are automatically generated during the discovery process in the i-Vu® CCN Pro v4.2 application will support local overrides.
- To support new features in a Snap-generated control program, you need to make some small changes.
  - v3.1 control programs typically had a section like the one shown in Figure 1. This took the current schedule state and used a Carrier Schedule Write microblock to write it to a CCN device. This should be replaced with logic similar to that shown in Figure 2.

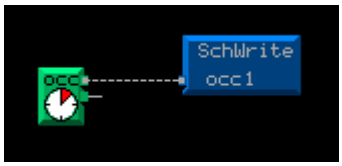


Figure 1

  - The logic shown in Figure 2 uses a new Carrier Schedule microblock and DOES NOT use either of the microblocks shown in Figure 1. The bottom output from the new Carrier Schedule microblock indicates if the device is in override. If you wish to use the Tenant Override Billing add-on, you must add a binary trend with a reference name of **override** (case sensitive) to this output, as shown in Figure 2.

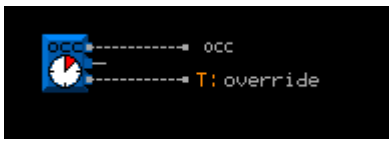


Figure 2

After the upgrade

- **Add-ons**
  - Some add-ons have been updated for compatibility with the i-Vu® v9.0 application . Be sure that you have the latest version of the add-ons that were used in the previous i-Vu® version.
    - Click **System Menu**  > **System Options** > **System Settings** > **Add-ons** tab, select the add-on, then click **Remove Add-on and Keep Data**. Install the latest version of the add-on.
  - To increase security of a i-Vu® system, by default, v9.0 allows only add-ons that are supported and signed by Carrier®. However, you can run an unsigned add-on. You must open SiteBuilder and go to **Configure** > **Preferences** > **Web Server**, and check **Allow unsigned add-ons**.

- **Schedules**—Descriptions are limited to 50 characters in a v6.0 or later system using v6-00a or later drivers. You must shorten any schedule descriptions over 50 characters or the schedules will not download.

- **Alarm sounds**—If an operator's **My Settings** page had an alarm sound file defined, copy the file from the old system to the new system.

- **Interface images and Graphics pages**—On each client computer, clear the web browser's cache to avoid error messages, strange graphics, or images.
  - In Edge®, search on "Clear browsing data".
  - In Safari®, search on "empty cache".
  - In Mozilla® Firefox®, search on "clear cache".
  - In Google™ Chrome™, search on "delete cache".

i-Vu® Pro application only:

- **SSL**—If your old system used SSL, you will need to set up TLS again after upgrading. See "To set up i-Vu® server communication" in SiteBuilder Help.
- **Windows® service**—If you run i-Vu Pro Server as a Windows service, you must uninstall the service for your previous i-Vu® Pro version, and then install the service for your new i-Vu® Pro version. See "Running i-Vu Pro Server as a Windows® service" in i-Vu® Pro Help for instructions on uninstalling and installing i-Vu Pro Server service.
- **MySQL**
  If you use MySQL and your system is v4.2 or earlier, copy the MySQL driver from **i-Vu.x\lib** to the **i-Vu.x\database-drivers** folder.
  If you use MySQL and your system is v3.1, copy the MySQL driver from **i-Vu.x\bin\lib** to the **i-Vu.x\database-drivers** folder.
  If the driver is not named **mysql-driver.jar**, change its name to this.

Document revision history

Important changes to this document are listed below. Minor changes such as typographical or formatting errors are not listed.

Date	Topic	Change description	Code*
4/15/25	Update your controllers and routers for the i-Vu® application	Updated procedure for new interface	X-PM-RD-J-RD

* For internal use only