

# Upgrading to Citect SCADA 2018 UPGRADE GUIDE

**Citect SCADA 2018**

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The AVEVA logo is displayed in white text on a blue triangular background. The logo consists of the word "AVEVA" in a bold, sans-serif font, with a small trademark symbol (TM) to the upper right of the final "A". The background of the entire page features a large, dark blue triangle containing a faint, technical drawing of an industrial facility, including various pipes, tanks, and structural elements.

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## 1. Executive Summary

The aim of this white paper is to centralize all sources of information in relation to the upgrade process and pathways to Citect SCADA 2018, from versions as early as CitectSCADA 5.21.

Two main methods are described:

- ▲ Offline upgrade
- ▲ Online upgrade

Pre-requisites and post upgrade considerations will also be discussed.

## 2. Introduction

The purpose of this document is to outline best practices for upgrading to Citect SCADA 2018. It is also intended to provide you with links to various documentation and resources, to assist you in the upgrade process.

In the first section of this white paper we will highlight the advantages of upgrading to the latest version, including the new features available in Citect SCADA 2018.

Later, we will go into the system requirements and planning stage of the upgrade: what you will need to backup and keep from your current version, and what you will need for your new system to deliver optimum performance after the upgrade.

After that we will describe how to upgrade one SCADA server. This will help us build the foundation for an online upgrade; in this process, you will need to upgrade a second server, allowing you to upgrade without any downtime.

There will be two cases described for an online upgrade:

Starting from Citect SCADA 7.20 SP4 / SP5A  
Starting from Citect SCADA 7.40 SP1

There are minor differences that need to be taken into consideration when upgrading from these two starting points.

Finally, we will describe the steps you need to take to help ensure the upgrade has been successful, as well as other changes you will need to make after your project is running stable on Citect SCADA 2018.

## 3. Benefits of Upgrading

It is always recommended to keep your software applications updated to the latest version. There are general advantages of being on the latest release of Citect SCADA, as well as the new functionality in Citect SCADA 2018.

### 3.1. Why upgrade?

- ▲ Operating System (OS) and System Compatibility

Citect SCADA 2018 has been validated for Windows 10 and Windows Server 2016 . Please check our [Compatibility Matrix](#) for a comprehensive list of compatible OS.

- ▲ Supportability and latest releases

Most updates and fixes have been developed for Citect SCADA 2018. Versions 7.20, 7.30 and 7.40 have matured which means neither Service packs nor fixes are developed for versions in the mature phase and limited support will be provided. For more information on this, please check [Citect SCADA's Support Lifecycle](#).

#### ▲ Access to new features

Any new release of Citect SCADA will contain new and unique functionality and features that have been developed in order to satisfy market trends and our customer's needs.

## 3.2. What's new in Citect SCADA 2018

Depending on your starting version, there will be a lot of features that might be new to you. Please refer to the help document for information on 2018 new features, see the topic "What's New in Citect SCADA 2018" in the "Getting Started" section.

You can also check all the details in the product documentation in the following section for previous releases:

You can visit [Ideas@SCADA](#) forum to find ideas that have already been proposed and vote for them, or to create new ideas for features.

*Getting Started > What's New in v7.x > Previous Releases.* [Also available online.](#)

In this section of the document we will go into the details of the preparation steps required before you start the upgrade process.

First we will introduce terminology and differentiate the different types of upgrade. Then, we will describe briefly the suggested upgrade path for different versions of Citect SCADA.

Finally, we will enumerate the system requirements and files you need to get from your current system before you proceed to upgrade.

## 4. Planning your upgrade

Before you start thinking about upgrading there is one important question you need to answer:

**Can my system tolerate downtime and loss of data?**

If the answer is **yes**, then an **offline upgrade** will be suitable for you.

If the answer is **no**, then you require an **online upgrade**.

The main difference between them is the resources and system requirements necessary to achieve it.

To be able to conduct an online upgrade, you must have at the very least a pair of redundant servers.

In the sections below, you will learn in detail about the two processes. Regardless of your desired option, you will need to learn how to do a offline upgrade, since this is required to execute an online upgrade.

### 4.1. Upgrade Path

Historically, some versions of Citect have included substantial changes to the product, which required incremental upgrades involving many intermediate steps between very distant versions (i.e. 5.21 to 7.20).

We have improved the upgrade code so that fewer steps are necessary to go from 5.21 to Citect SCADA 2018, and the number of necessary steps will once again depend on your answer to the question: *Can my system tolerate loss of data?*

If the answer is yes, then you can upgrade your project from as early a version as 5.21, directly into Citect SCADA 2018.

If the answer is no, then you need to follow an online upgrade process and you need to also follow an upgrade path that will depend on your starting version:

**If your starting version is previous to v7.20 SP4**

You need to restore your project into v7.20 SP4 or SP5A compile and run the project to restore and convert your historic alarm data.

**If your starting version is v7.30, v7.30SP1**

You need to restore your project into v7.40 SP1 and compile and run the project to restore and convert your historic alarm data.

**If your starting version is v7.40**

Install SP1 and compile and run the project to restore and convert your historic alarm data.

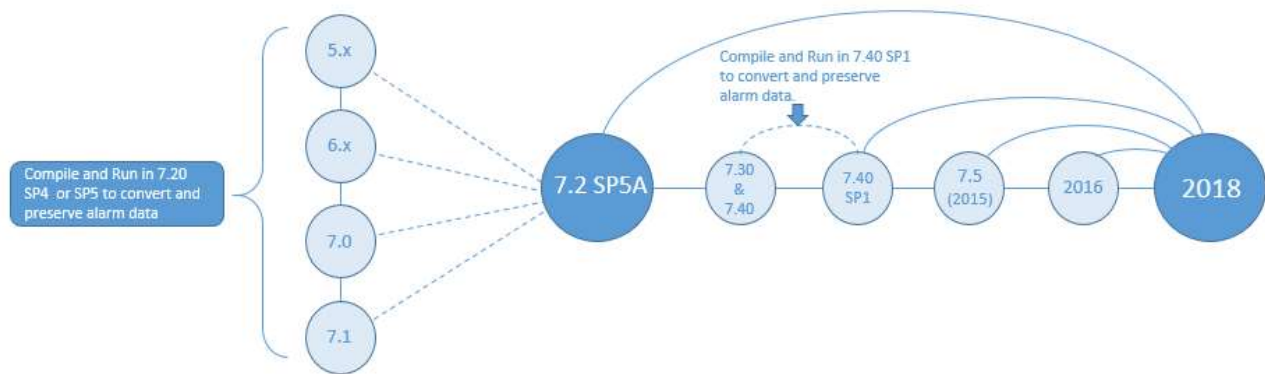


Figure 1: Recommended upgrade path to avoid loss of data

## 4.2. Hardware Requirements

Selecting hardware is dependent upon several factors such as:

- ▲ The role of the hardware in your SCADA system
- ▲ The amount of I/O, Alarms, Trends and the frequency of change
- ▲ Number of Clients (for Servers)
- ▲ Server Clustering
- ▲ Complexity of your user interface
- ▲ Degree of customization

The requirements below have been tested using a simulated SCADA system with 10 clients connected maintaining a server CPU load of less than 25% and should be used as a guideline only due to the impact of the factors listed earlier.

**PC Performance**

General PC performance will be affected by the major elements of CPU, RAM, Bus, and HDD speed.

The clock speed no longer defines how powerful a CPU is; the required processor is defined according to an average CPU mark given by PassMark® Software. To check CPU performance, for example for a Core i3 CPU, type "PassMark Core i3" in the search engine of your internet browser. This will give you the CPU's calculated performance as compared to other similar well-known processors.

In general, it is recommended that computers in your SCADA network utilize no more than ~25% CPU in normal state. This allows the system to be responsive, and handle abnormal situations better.

**Client Recommendations**

CPU PassMark®	Cores *1	RAM	HDD *2	Graphics	Screen Resolution *3	Network
2000	2	4 GB	10 GB	DirectX 9 or later with WDDM 1.0 Driver, 128 MB of dedicated VRAM	1920 x 1080	100 Mb

- The complexity of your pages such as the number of graphical animations and Cicode running in the background will impact your client CPU choice. It is recommended to use a higher performing PC with high clock speed when building complex user interfaces. As a guidance, the following will require high clock speed to maintain a Client CPU load of less than 25% on a single core:
  - HD user interface with 50 complex genies
  - UHD4K user interface with 100 complex genies
- If the Deployment feature is being used, the HDD needs to have the required space for the number of configured version+2 of the project.
- Citect SCADA supports lower and higher resolutions including 4K UHD Resolution (3840 x 2160). A 4K UHD will require a high clock speed CPU.
- A multi-monitor client will typically require a higher clock speed CPU and more memory.

**Server Recommendation**

I/O per Server *1	CPU PassMark®	Cores	RAM	HDD *2 *3	Graphics	Screen Resolution	Network
Compact (<1,500 pts)	1800	1	4 GB	10 GB	DirectX 9 or later with WDDM 1.0 Driver, 64 MB of dedicated VRAM	1920 x 1080	100 Mb

<b>Small (&lt;15,000 pts)</b>	4500	4	8 GB	20 GB	DirectX 9 or later with WDDM 1.0 Driver, 128 MB of dedicated VRAM	1920 x 1080	100 Mb
<b>Medium (&lt;50,000 pts)</b>	8000	4	8 GB	100 GB	DirectX 9 or later with WDDM 1.0 Driver, 128 MB of dedicated VRAM	1920 x 1080	100 Mb
<b>Large (&lt;200,000 pts)</b>	10000	8	16 GB	500 GB	DirectX 9 or later with WDDM 1.0 Driver, 128 MB of dedicated VRAM	1920 x 1080	1 Gb

1. This is a recommendation for a single server only running I/O, alarms, trends and reports. For larger systems, services can be distributed to their own PC and/or clustering can be used to add additional servers. System resources of CPU and Memory should be increased when:
  - Using clustering
  - There is high rate of change of data (I/O or Alarms)
2. If the Deployment feature is being used, the HDD needs to have the required space for the number of configured versions+ 2 of your project.
3. Disk space is an estimate only and includes:
  - Runtime components
  - Compiled project
  - 20% of the I/O trending with a change on average every 10 seconds, 24 x 7 for 3 months.
  - Alarm changes equal to the number of I/O changing per day

1. The exception to the 10-client simulation is the HMI role, with a Server/Client combination operating without networking.
2. Refer to the detailed Hardware Requirements in the Citect SCADA 2018 Installation Guide to better gauge hardware recommendations specific to the size of your SCADA system.



**Engineering Workstation Recommendation**

Total System Size	CPU PassMark®	Cores	RAM	HDD *1 *2 *3	Graphics	Screen Resolution *4	Network
<b>Compact (&lt;1,500 pts)</b>	2000	2	8 GB	10 GB	DirectX 9 or later with WDDM 1.0 Driver, 128 MB of dedicated VRAM	1920 x 1080	100 Mb
<b>Small (&lt;15,000 pts)</b>	2000	2	8 GB	20 GB	DirectX 9 or later with WDDM 1.0 Driver, 128 MB of dedicated VRAM.	1920 x 1080	100 Mb
<b>Medium (&lt;50,000 pts)</b>	4250	4	8 GB	50 GB	DirectX 9 or later with WDDM 1.0 Driver, 128 MB of dedicated VRAM.	1920 x 1080	100 Mb
<b>Large (&lt;500,000 pts)</b>	4250	4	8 GB	50 GB	DirectX 9 or later with WDDM 1.0 Driver, 128 MB of dedicated VRAM.	1920 x 1080	100 Mb
<b>Huge (&gt;500,000 pts)</b>	8000	4	8 GB	100 GB	DirectX 9 or later with WDDM 1.0 Driver, 128 MB of dedicated VRAM.	1920 x 1080	100 Mb *5

1. SSD is recommended for Engineering machines for a smoother and faster experience. If a non-SSD is used, select a minimum RPM of 7200.
2. If the Engineering machine is being used as a Deployment Server, the size of the HDD will determine how many versions of the system you can retain.
3. Disk space is an estimate only and includes:
  - Full Citect SCADA installation including optional components and documentation
  - Project Assets for the specified system size
4. Citect Studio is designed for a minimum desktop resolution of 1920 x 1080.
5. If the Engineering machine is being used as a Deployment Server, a 1Gb network connection is recommended.

**HMI Recommendation**

System Size*1	CPU PassMark®	Cores	RAM	HDD	Graphics	Screen Resolution	Network
<b>Compact (&lt;1,200 pts)</b>	1400	1	8 GB	10 GB	DirectX 9 or later with WDDM 1.0 Driver, 64 MB of dedicated VRAM	1920 x 1080	n/a

**Table 1: Recommended hardware requirements for Citect SCADA 2018**

1. HMI Client/Server combination.

### 4.3. Software Requirements

Citect SCADA 2018 can be run on:

- ▲ Windows® 7 SP1 (64 bit only)
- ▲ Windows® 8.1 (64 bit only)
- ▲ Windows® 10 version 1607 and later (64 bit only)
- ▲ Windows® 10 LTSB version 1607 (64 bit only)
- ▲ Windows® Server 2008 R2 SP1
- ▲ Windows® Server 2012
- ▲ Windows® Server 2012 R2
- ▲ Windows® Server 2016

Internet Explorer Version 9 or later is the minimum requirement when using the Process Analyst, the Citect SCADA Web Client, or the Citect SCADA Web Server. However, in line with Microsoft advice, we recommend you use the latest version of Internet Explorer with these products.

Extended Memory mode for an alarm server can only be run on a 64-bit operating system.

The requirements for Microsoft .NET Framework are 4.0, 4.5.1, 4.6.1 and 4.7 (installed with Citect SCADA if not already installed).

Microsoft .NET Framework 2.0 (x64) is required by "Schneider Electric License Manager" and "Schneider Electric Software Update" if using Windows Server 2012.

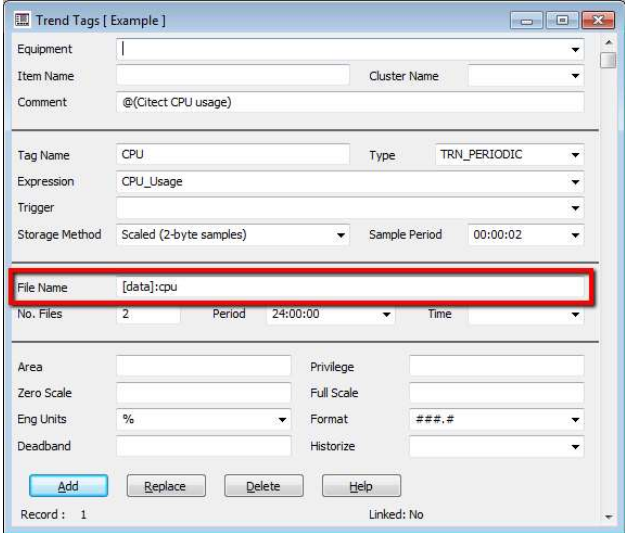
For more information please refer to Chapter 4: Installation Requirements > Software system of the installation guide which comes with the Citect Scada disk or installer.

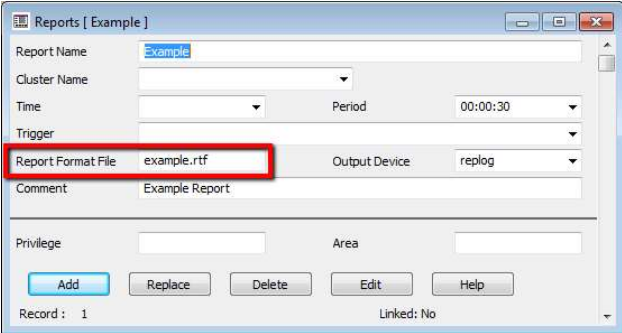
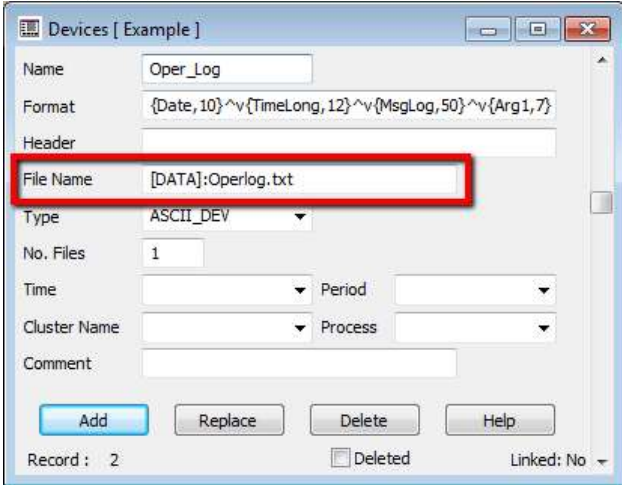
### 4.4. File Inventory

To ensure a smooth upgrade and minimal disruption during this process there are few files, apart from your project backup, that you will need to take from your current system. The number of files you need to collect will depend on if your system can tolerate loss of data, but still, there are several files you need to collect regardless of your system conditions.

These files will depend heavily on your project configuration, and we recommend, when possible, contacting the developer of your project, since they will have the global picture of your project’s dependencies.

In the table on the next page you will find a list of the files you need to backup from your current system, or where to look for these files based on your project settings.

File	Description
Project backup (.ctz file)	This is the main file to capture. You can do this from Citect Explorer: Citect Explorer→Tools→Backup Please make sure you back up your project and all included projects.
Citect.ini	This file is found in the config folder
Data directory	This file is found on the path [CtEdit]Data
ALMSAV.DAT and ALMINDEXSAVE.DAT (For 7.20 and previous versions)  OR  Alarm Database (For 7.30 and 7.40)	These files contain alarm configuration data as well as runtime data. Their path is defined on Citect.INI, or you can check Citect Explorer→Tools → Computer Setup Editor→ [Alarm]SavePrimary <b>Default path:</b> Same as Data directory The alarm database will be found on your Data directory, using the following naming convention: [Data]\MyProjectName\ClusterName.AlarmServerName There will be as many databases as Alarm Servers you have on your project, please make sure you back up all of them.
Trend files: .HST and .00X	<p>The path and names of these files is defined on the trend tag itself i.e.:</p>  <p>(screenshot for CitectSCADA 7.20 Trend Tags form) In this case, the files will be created on the data directory defined in [CtEdit]Data. The files will be named CPU.HST, CPU.001 and CPU.002 (after the trend name and number of files) If the filename is left blank it will put all files in default DATA directory, with the trend tag name as filename. <b>Default directory:</b> Same as Data directory</p>

File	Description
<p><b>Report files</b></p>	<p>These files contain the code that is executed on your Citect reports. They will always be under [CtEdit]User\MyProjectName, and should be copied when you backup the project.</p> <p>These file names are defined on the reports form: Project Editor → System → Reports</p>  <p>(screenshot for CitectSCADA 7.20 Reports form)</p>
<p><b>Custom ActiveX controls (.OCX)</b></p>	<p>Citect includes a number of ActiveX controls and most of these will be available with the Citect SCADA 2018 installation, but you need to backup your custom ActiveX controls. The developer of your project will know where these can be found.</p> <p>Alternatively, you can check the contents of the ActiveX.dbf file on your [CtEdit]User\MyProjectName directory. On this file you will find an inventory of all the ActiveX controls used in your project, and their GUID.</p> <p>Using the GUID, you can find the path to the ActiveX, as defined in the windows registry key:              KEY_LOCAL_MACHINE\SOFTWARE\Classes\CLSID\{GUID}\InProcServer32\              The default value for this key is a path to the .DLL or .OCX you need to backup.</p>
<p><b>Device logs</b></p>	<p>These files will contain any logging you have configured in your project i.e. alarm logs, reports logs. You will find their locations on the devices form: Project Editor → System → Devices</p>  <p>(screenshot for CitectSCADA 7.20 Devices Form)</p>

File	Description
<p><b>Additional Files</b></p>	<p>Check your citect.ini or use your computer setup editor, on the Paths Section as it could contain runtime files used by custom code in the project. Also, check your system parameters, and any parameter defined under the Paths section. You will find their locations on the Parameters form, and look for Path:  <i>Project Editor → System → Parameters</i></p> <div data-bbox="488 449 1109 751" style="border: 1px solid #ccc; padding: 5px; margin: 10px 0;"> </div> <p>(screenshot for CitectSCADA 7.20 Parameters form)</p> <p>In this example this path points to the Data directory, which you should have backed up already, but it might not be the case, so please double check.</p>
<p><b>Driver Hotfixes</b></p>	<p>If you are aware of any driver hotfix in your system, please backup this driver dll, which you'll find on the BIN directory, with all SCADA program files. Also, be aware that the fixes contained in this hotfix may have already been included in the drivers which ship with Citect SCADA 2018. Additionally, you can check our <a href="#">Driver Web</a> for the latest releases.</p>

**Table 2:** File inventory: All the files you need to backup before upgrade

When backing up files it is always useful to know the location for the Citect SCADA Data, User, Logs and Config folders.

The current path for these can be found using the computer setup editor, or by looking at your Citect.INI file. To access the computer setup editor you can go to Citect Explorer > Tools > Computer Setup Editor

Under this section you will find the Data, Logs, Config and User parameters, which contain the path under which to find these files. In older versions, the Computer Setup Editor didn't exist, but you can still access the .INI file through the menu Citect Explorer > View > Citect.INI

It is also good to know the default installation paths for these directories:

Default path for Windows 7, Windows Server 2003-2012:  
 C:\ProgramData\Schneider Electric\CitectSCADA 7.XX\

Default path for windows XP:  
 C:\Documents and Settings\All Users\Citect\CitectSCADA 6.XX\

## 5. Offline Upgrade Process

There is a known performance limitation of the file operating system when more than 3000 files reside in the directory. Also, care must be taken if changing filename structure, as Trend server doesn't support these types of changes.

Please read KB article Q3823 for more information.

Once you have figured out which kind of upgrade you need, outlined the upgrade path, checked your hardware and software requirements and backed up all necessary files, it is time to proceed with the upgrade process.

Earlier in this document we asked you to answer a simple question: Can your system tolerate any downtime and loss of data?

Based on your answer you will need an offline or online upgrade, as well as a determined upgrade path.

Now that you have done all that, we will introduce the concept of an Offline upgrade. This is the basic upgrade process and it will be required whether or not you are going through an online upgrade.

Please review carefully the steps to take in order to produce a successful offline upgrade. We will be using a starting version of 6.10 in this example.

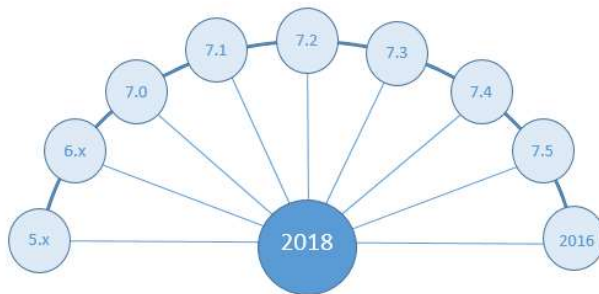


Figure 2: Upgrade path for offline upgrade

### 5.1. Backup your current project and relevant files

In this particular case, you need to be aware that 6.10 is not supported on Windows 7, and Citect SCADA 2018 is not supported on Windows XP, hence, this particular case would involve a change in Operating System, as well as on the default directory and paths definition.

To perform a backup of your project go to Citect Explorer and select your project from the list, and then go to *Tools* → *Backup...* Please ensure you select *Save sub-directories* and *Save configuration files* is selected on the Backup dialog.

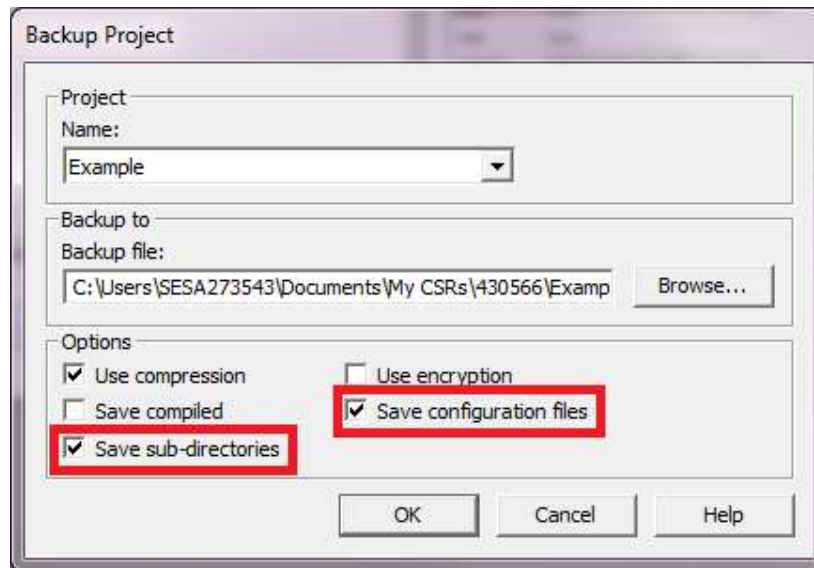


Figure 3: Backup project dialog

Please keep in mind the changes you make to file locations when backing up and restoring custom files, as you will need to change the paths reference in the project to reflect the new file locations.

## 5.2. Upgrade your licenses

In order to do this, your site will need to have a valid support agreement or you need to purchase a license upgrade. You can upgrade your key or soft license using our online [license generator](#). You can also check the support status of the key or soft license at the same URL.

- If your license is out of support, please get in touch with your Schneider Electric account manager/sales rep who will help you with pricing and guide you through the purchase process.
- If your license appears as out of support, but you are not sure who your account manager is, please send an email to [scada.orders@schneider-electric.com](mailto:scada.orders@schneider-electric.com) with your license and Site ID details or your purchase order information to sort out your support status.

All our licenses are backwards compatible. Therefore, we recommend upgrading your license as a first step, since it will be valid for any Citect SCADA version on your upgrade path.

## 5.3. Plan your upgrade path

To upgrade the key go to “Licensing” menu option from Citect Studio and use the Sentinel Key Update for USB dongle and Floating License Manager for Soft license.

Also, if you are using soft licenses, please read KB article Q7698 before restoring your OS or using Virtual Machines that have soft license activations.

If you need to preserve historical data, then you should follow the upgrade path described in this section. For this you will need to backup files and projects at every milestone of the upgrade path. Also, you will need to be able to install and run all versions of Citect indicated on the upgrade path.

### 5.4. Uninstall your current SCADA version

In this particular case, you most likely need new hardware or a new OS, so this step would be unnecessary. In the case in which you don't need to format your machine or a new machine in itself, we recommend uninstalling the older version and installing the newer version defined on your upgrade path once you have completely uninstalled the previous one.

In this example (because the initial version was 6.10 and it's only supported on Windows XP or earlier) you would need to restore the project in a new machine with Windows 7 or newer and Citect SCADA v7.20 SP4 or SP5A.

After completing the first iteration of the workflow, you would need to uninstall v7.20 and install Citect SCADA 2018.

### 5.5. Restore your project

The following steps you will need to repeat as many times as milestones you have on your upgrade path (It should not be more than two milestones if upgrading from v5.21 or greater).

Please check the workflow in Figure 3 below for a better idea of the process:



Figure 4: Upgrade projects progress status

### 5.6. Upgrade your project

As default, when you restore a project from a previous version into 2018, Citect SCADA design environment will force an update, and you will get the following message:

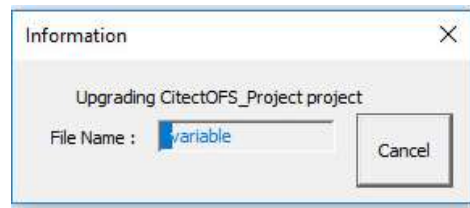
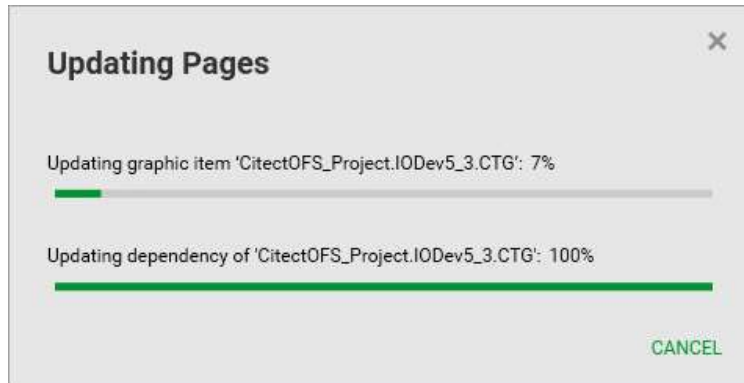
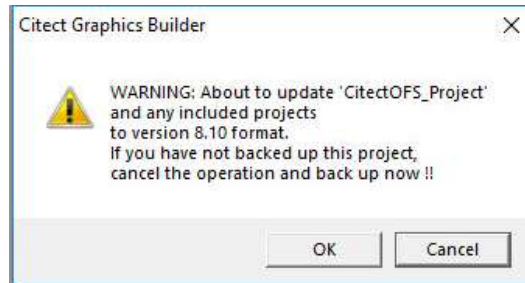


Figure 5: Warning displayed before updating a single project

Once you make the project “Active” in Citect Studio the following warning message will pop up to upgrade the graphics to version 8.10 format:

Projects	Compiled	Revision	Date
CitectOFS_Project	Active Project	1.0	12/03/2009
CitectOFSInclude		1.0	15/05/2009





Click "OK" button to upgrade the graphics to the new format. If you click "Cancel" the graphic pages will not be displayed at runtime.

NOTE: If you do not go through the graphic upgrade process, the graphic pages will not be displayed at runtime.

This action may take a long time depends on the number of pages and genies you have in your project. This process will go through all the pages and genies and will update them to the new format. Once the pages are updated and you can make a change to a genie it will only update the pages this genie belongs to instead of going through all the pages.

## 5.7. Migrate your project

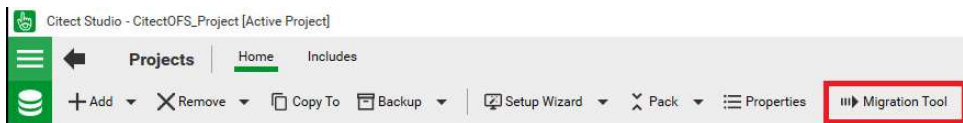
The automatic update that occurs when you restore your older project into the newer Citect SCADA version does not fully upgrade your projects, and needs to be followed by the Migration Tool (if migrating from v6.x this is particularly noteworthy).

The automatic upgrade is a passive action which updates the database field definition for any database that has been changed between the two versions and copies new files that are necessary in the current version.

The Migration Tool is a separate application which should be manually run after the automatic upgrade has been executed. It can be initiated after you have prepared the project for final migration. This tool will accommodate the changes in project functionality that are incorporated in 7.0 through to the current version.

Before you use the migration tool, it is advisable you backup your upgraded projects. Some of the changes this tool makes are not easily reversible, and, if you interrupt the migration process before it's finished you will need to restore your original project and go through the upgrade and migration process again.

To use the Migration tool, make your project active in Citect Studio and go to Projects view and then click on "Migration Tool".



You will be presented with the following dialog:

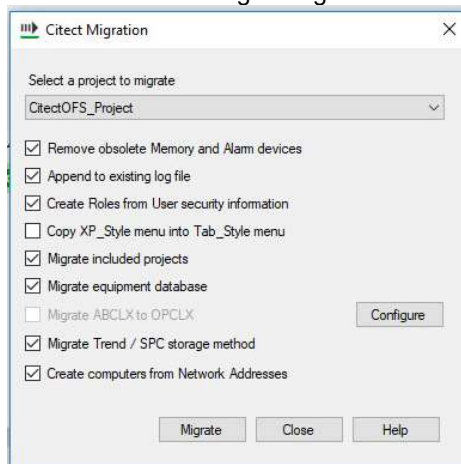


Figure 6: Citect SCADA 2018's Migration tool

Please find in the next table a description of what every option does.

Option	Description
Remove obsolete Memory and Alarm devices	Select this check box if you wish to delete these types of devices after successful migration Note: Do not select this check box when you run the tool for the first time on a project that contains any included projects which are shared with more than one master project. If you want to delete obsolete devices under these circumstances, you can run the tool a second time using this option if the migration is successful after it is run the first time.
Append to existing log file	Use this option to append information about the migration process to the existing Migration Tool log file (located in Citect SCADA's User directory). If this option is not selected, a new log file will be created when migration is complete.
Create roles from User security information	Select this option if you wish to migrate the users' database from an existing project.

Copy XP_Style menu into Tab_Style menu	Select this option to convert legacy menu entries to the format necessary for the new menu configuration system. By default, this option is unchecked to avoid potential compile errors that may occur if the legacy menu.dbf contains functions which have been removed.
Migrate included projects	Select this option to migrate the included projects associated with the selected project.
Migrate equipment database	Select this option if you have an existing equipment database that you want to migrate into this version. When upgrading from an earlier version, and the "PARENT" field of the equipment table was used, you should select this check box. Otherwise existing data from the PARENT field will be ignored. If runtime browsing is used, the PARENT field will return the equipment parent (the substring of the equipment name without the last '.' and anything after that). To retrieve information that was stored in the previous "PARENT" field the "COMPOSITE" field should be used.
Migrate ABCLX to OPCLX	Select this option if you want to migrate devices that currently use the ABCLX driver to the OPCLX driver. Select the Configure button to indicate which I/O devices you would like to migrate. Note: You should confirm that the OPCLX driver is installed before you use this option.
Migrate Trend/SPC storage method	If you select this option, the storage method will be set to scaled (2-byte samples) for all trends that have no storage method defined. Use this option to stop the compiler error message "The Storage Method is not defined". In previous versions, a blank storage method would default to scaled. However, this is no longer supported, resulting in a compilation error.

**Table 3:** Options for Citect SCADA 2018's Migration Tool

### 5.8. Merge your .INI file

So far, you should have been using the default .INI file that comes with the default installation of the version you are upgrading to. We do not recommend replacing your old .INI file into the new version, since it is likely that many parameters have been deprecated or changed behaviour.

However, we do recommend paying special attention to the following parameters, as they will be necessary to compile your project correctly and to set your design environment to your preferences.

If the following parameters are defined in your old .INI file, please ensure they are merged into the new version's .INI file:

Parameter [Section] Name = Value	Description
[General] TagStartDigit=1	Without this parameter you will encounter the 'Tag not defined' compiler error. Setting this to one, allows to define tag names that begin with numbers or symbols.
[General] CheckAddressBoundary=0	Without this parameter you could encounter the 'Bad Raw Data' or other tag address related errors. Setting this to zero, allows defining variable tags of the same data type in odd or even addresses. When this parameter is set to 1, all variable tags from the same data type must be defined on odd OR even addresses.

[CtDraw.RSC] ListSystemPages=1	This allows you to open popup pages from the Graphics builder.
[CtDraw.RSC] AllowEditSuperGeniePage=1	This allows you to edit super genie pages from the Graphics Builder.

**Table 4:** Citect.INI parameters to be merged from your OLD Citect.INI file.  
Please add these parameters ONLY if they are found on your old .INI file

Also, please merge any driver parameters from your old .INI file as they will most likely be necessary to interface with your I/O network.

### 5.9. Compile your project

After upgrading and migrating your project, you need to ensure runtime functionality works as it used to. As usual, you need to successfully compile your project before going to runtime.

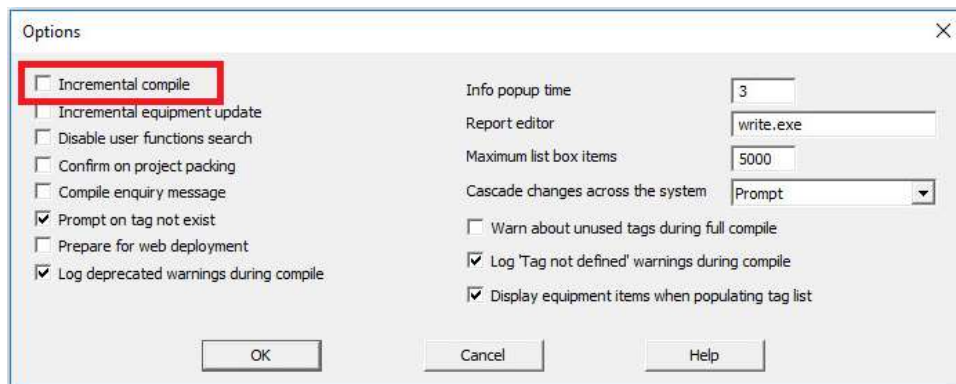
When upgrading from previous versions, it is not uncommon to encounter compiling errors, particularly if you are upgrading from a very mature version.

One of the most common sources of compiling errors when upgrading is Cicode functions. This is because the functions have been added, changed, deprecated, or simply because the compiler has become stricter to help you better prevent runtime errors.

You can find a list of the new, modified, reinstated, deprecated and removed cicode functions in the product help: *Getting Started > What's New in Citect SCADA > What's New in Citect SCADA 2018 > Cicode Functions in Citect SCADA 2018.*

After clearing all the compiling errors, you need to ensure that your project is compiled in its entirety. To do this, please make sure that Incremental Compile is turned off.

To do this, go to *Project Editor → Tools → Options* and un-tick Incremental Compile.



**Figure 7:** Project Editor's options: Disabling Incremental Compile

Incremental Compile is an option that allows faster compiling, by only compiling the latest changes to the project. This is necessary on large scale projects in which a full compile can take several minutes.

We recommend only enabling this option after deployment/development of the project is finalised, or when introducing small, limited changes.

The most common compiling errors when upgrading can be found on the product documentation: *Compile > Compile a Project > Compile Messages > Compile Error Messages*.

After that, please Pack, Update Pages and Pack Libraries on your included projects before compiling one last time.

## 5.10. Run the Computer Setup Wizard

Before running a project for the first time, you need to run the Computer Setup Wizard. This wizard is used to configure the Runtime Manager and other settings that are relevant to the runtime process.

The computer setup wizard will automatically determine your computer role based on the network addresses you have defined in your project.

After finishing the computer setup wizard, you can proceed to restore your historic data and other files and run the project.

If your local address is not a part of the Network Addresses of your project (or any included project), the computer setup wizard will default the role of the computer to Client. If your computer is meant to be a server, you need to add the local address to the Network Addresses definitions and server instances of your project.

## 5.11. Restore runtime files

After compiling your project, you'll want to ensure that all the files necessary for runtime are placed in the correct directories. For this, you'll need the files you collected in [File Inventory](#) and you need to place the files in the corresponding directories, as defined in your .INI file and project configuration. Please read the note in [this section](#) for more information.

## 5.12. Restore historical data files

The last step before running your upgraded project is to restore the historic data files.

### Alarms:

#### For versions prior to 7.30:

In this example, and whenever upgrading from a version earlier than 7.20 SP4, particular attention needs to be given to the ALMSAV.DAT and ALMINDEXSAVE.DAT files.

The reason why 7.20 SP4 is an intermediate step in the upgrade path for these versions, is precisely that 7.20 SP4 contains the code that will convert these files into a format that can be read by the new alarm server architecture, introduced in v7.30, and maintained in Citect SCADA 2018.

Follow these steps to convert the files:

1. Take a copy of the ALMSAV.DAT and ALMINDEXSAVE.DAT from your existing project (previous 7.20 SP3 and below versions)
2. Place the files in 7.20 SP4 or SP5 machine and point [Alarm]SavePrimary parameter points to the directory in which you have placed your backed-up ALMSAV.DAT and ALMINDEXSAVE.DAT.
3. Run the project and verify you can see the alarm data, then take the new ALMSAV.DAT and ALMINDEXSAVE.DAT files, as you will need to repeat this process when you upgrade to Citect SCADA 2018 (for an offline upgrade).

**For versions 7.30, 7.30 SP1 and 7.40:**

Whenever upgrading from a version between 7.30 and 7.40 SP1 particular attention needs to be given to the Alarm Database on the Data directory of the project.

Follow these steps to convert the files:

1. Make sure to place your backed-up Alarm Database on the directory defined by the [CtEdit]Data parameter.
2. Before starting runtime, please confirm that the directory that [Alarm]SavePrimary does NOT contain ANY ALMSAV.DAT nor ALMINDEXSAVE.DAT files.
3. After you run and verify the project, take the new Alarm Database, as you will need to repeat this process when you upgrade to Citect SCADA 2018.

#### **Trends:**

Follow these steps to convert the files:

1. Create the same file hierarchy on the new system.
2. Place the files in the same folders.
3. If you want to change the folder location, or you cannot replicate the same file hierarchy, please use the trend renamer tool:

<http://www.citect-kb.schneider-electric.com/ToolBox/KnowledgebaseArticle1244.aspx>

### **5.13. Run your project**

By now, your project should be ready to run. Now, it is a matter of checking all previous functionality works as intended, now that you have successfully upgraded from version 6.10.

As a rule of thumb, you need to check any Cicode that you needed to modify to compile in the new version.

You also need to test communications to your I/O devices, Alarm triggering and Trend capture are working ok.

### **5.14. Install Citect SCADA 2018**

After you have completed all the milestones in your upgrade path, you will be ready to install Citect SCADA 2018.

Once your environment is clean from previous versions, you can proceed to install Citect SCADA 2018. If you are not familiar with previous versions of Citect SCADA, we suggest following the process outlined in the installation guide available with the installation files. You can download the Citect SCADA 2018 Installation guide from our website.

## 6. Troubleshooting Offline Upgrade

In this section, we will list common issues you might encounter during your Offline Upgrade which will be related to Compiling Errors and any other pre-runtime matters:

### 6.1. Cannot upgrade License Key

1. Please make sure you have correctly installed the latest versions of [CiUSafe](#) and [Sentinel Driver](#).
2. Please make sure the Authorization code matches the Key you are trying to upgrade. If you still cannot upgrade your license, please check KB article [Q3672](#) for more information on the error codes.

We recommend checking our knowledge base for useful information.

To search specifically for upgrade issues, you can select the Upgrade issues category on the left pane of the page. Alternatively, [use this link](#) for direct access to this category.

### 6.2. Compiler errors and warnings that are not related to deprecated functions

As Citect SCADA evolves, the compiler feature becomes stricter in order to ensure project quality and runtime success. The fact that you are getting compiling errors that were not appearing before is a symptom of stricter compilation, which will result in more predictable and stable runtime.

Citect SCADA 2018 includes a new feature that will help you understand compiling warnings and fatal errors easier. There is a new field included in the compiling record:

Row	Type	Name	Field	Table	Error
1	ERROR	NAME	C:\ProgramData\Schneider Electric\Citect SCADA 2018\User\CitectOFS_Project\USERS.DBF		Record already defined (E2021)
2	WARNING	ALLOW_RI	C:\ProgramData\Schneider Electric\Citect SCADA 2018\User\CitectOFS_Project\ROLES.DBF		'Allow RPC' permission is not define
3	WARNING	ALLOW_RI	C:\ProgramData\Schneider Electric\Citect SCADA 2018\User\CitectOFS_Project\ROLES.DBF		'Allow RPC' permission is not define
4	WARNING	ALLOW_E	C:\ProgramData\Schneider Electric\Citect SCADA 2018\User\CitectOFS_Project\ROLES.DBF		'Allow Exec' permission is not define

If you search for 'E2021' in the Citect SCADA 2018 help, you will find more information for this specific error code. In this example:

Error Code	Message	Description
E2016	Protocol expected	the I/O Device.
E2019	Open bracket expected	This error can be generated when a variable tag is placed on a graphics page and the name of the tag is identical to the name of a Cicode function in the project or an included project.
E2020	Syntax error	A malformed Cicode expression has been specified. Check the structure of the expression.
E2021	Record already defined	Tag names, alarms, trends, users and Cicode functions all need to be unique within a project and any included projects. Check for duplicated names.
E2022	Incorrect number of arguments for function	Too many or not enough arguments have been specified for a Cicode function. Check the number of arguments being passed to the function and make the required adjustments.
E2023	Trailing characters in Cicode	There are extra trailing characters in a Cicode statement, following the semi-colon.

Figure 9: Help topic for error E2021

## 7. Online upgrade process

Now that you have learned how to do an offline upgrade, you can proceed to complete the online upgrade.

An online upgrade takes advantage of Citect SCADA's native Server redundancy to minimize or avoid loss of data or downtime on your production system, allowing for one server to take ownership while the other is being upgraded.

Also, it is important to note that an online upgrade is the only way to avoid loss of data. It is a customary practice in the industry to perform an upgrade in parallel. This is the process in which the two SCADA systems (the old version and the newer one) are running side-by-side. The old version is decommissioned after the new version has been fully tested and validated.

Using an upgrade in parallel approach, it is not possible to convert the data for the time in which the new version is being brought online, even if restoring historic files from the older version that is online at the same time. There will always be a data gap from the time you take the historic files, to the time you start your parallel SCADA system. An online upgrade is the only way to avoid loss of data.

Similar to the offline upgrade, you will need to follow the upgrade path, and repeat the process as many times as milestones you have in your upgrade path (It should not be more than two milestones if upgrading from v5.21 or greater).

In this chapter we will list the pre-requisites for an online upgrade, and discuss two scenarios considering the starting version: from 7.20 SP4 or SP5A and from 7.40 SP1.

### Pre-requisites

As discussed previously, the online upgrade will allow you to avoid downtime and loss of data.

It is important that you take into consideration the complexity and size of your project when planning for this upgrade.

As you saw in the previous chapter, an offline upgrade can be a complex process, and it is important this has been completed thoroughly in order to avoid downtime and loss of data in your production system.

Please read the list of pre-requisites below before you start the online upgrade:

**At least one pair of redundant servers:** this is to upgrade one server at the time, while the redundant server assumes primary operation, avoiding downtime and loss of data.

**Upgraded project:** make sure your project runs and works properly on Citect SCADA 2018 before deploying to production and starting the online upgrade. If your project is complex or you are upgrading from a version earlier than 7.20 SP4, it is strongly recommended that you have a test environment, as the offline upgrade could be complex and could involve a long server downtime if done on your production system.

**Restore runtime files:** ensure you have restored the necessary files for runtime onto the appropriate directories to avoid any disturbances on the upgraded live system.

**Capture data files:** to allow historic data to be restored into the new version, you need to capture the data files at the right time. This is described in detail in the online upgrade steps outlined below.

**Configure your running system for Online upgrade:** to allow this process to be as smooth as possible, we recommend leveraging of your current redundant system and adding the following citect.ini parameters before the online upgrade:



- ▲ **[LAN] EarliestLegacyVersion:** use 7200 for 7.20 upgrade and 7400 for 7.40 upgrade. This will allow your upgraded servers to accept connections from the older version
- ▲ **[Alarm]EnableStateLogging:** set this parameter to 1, as it will allow logging the alarm synchronization messages into the syslog. The importance of this will be addresses in upcoming sections
- ▲ **Alarm.<ClusterName>.<AlarmServerName>]KeepOnlineFor:** This parameter is configured for each Alarm Server instance and default to 6 weeks.

When configuring this parameter you need to decide what time period of data you want to keep online after the upgrade has finished, when running your system.

In a redundant setup this should be the same on the primary and standby alarm server.

- ▲ **[Alarm.<ClusterName>.<AlarmServerName>]ArchiveAfter:** This parameter is configured for each Alarm Server instance and defaults to 4 weeks.

When configuring this parameter you need to decide what time period of data is that you wish to maintain during upgrade. For example, if you set this parameter to 1 week, it means that during the upgrade process you will lose any summary data that is older than 1 week. If you don't want to lose any data, you need to set this parameter to the earliest data in your summary (7.20) or SOE (7.30 and above).

In a redundant setup this should be the same on the primary and standby alarm server.

Note: **ArchiveAfter** has to be smaller than **KeepOnlineFor**.

- ▲ **[Debug] Kernel = 1** (optional): we recommend enabling this to allow you to monitor the kernel during the upgrade. Specific situations in which you can check the kernel will be highlighted in later sections

## 7.1. Online Upgrade steps: 7.20 to Citect SCADA 2018

In this particular scenario, you will NOT need to restore the alarm data files (ALARMSAV.DAT and ALRMSAVEINDEX.DAT) under most circumstances.

To enhance your experience during the online upgrade process, Citect SCADA 2018 is equipped to read this information from the redundant 7.20 (SP4 or greater) server that is still not upgraded.

1. Add the following parameter on the .INI file to all your server nodes before you start the online upgrade.  
**[LAN]EarliestLegacyVersion = 7200.**  
You will need to restart the servers after adding the parameter for the changes to take effect.
2. Shutdown SCADA runtime on the Primary server
3. Upgrade Citect SCADA on this server according to the offline upgrade procedure.
4. Restart the primary server, now upgraded.
5. Now, the Citect SCADA 2018 server will build the new alarm database, and will import the historic data from the Standby 7.20 server.
6. Please check the status of the alarm server synchronization using the Alarm Server Kernel, on the Main Window:
  - ▲ When the Alarm Servers synchronization starts you should see the following message:  
**Alarm: Peer update request sent.**
  - ▲ Then you should see a number of messages with Update packets (number is dependent on your Alarm historic events and configuration).

**Alarm: Update packet XXXX received.**

- ▲ Finally, the following messages will indicate that the synchronisation has been finalised successfully:

**Alarm: Database objects state synchronization completed.**

Alarm: Database is initialized, preparing to Start the Alarm Engine.

Alarm: Starting Alarm Engine

**Alarm: Server startup complete.**

7. If you find that your Alarm Server synchronization cannot finalize, please place the ALARMSAV.DAT and ALRMSAVEINDEX.DAT on the [Alarm]SavePrimary directory. Please note that this should be a last resort.
8. Upgrade your client nodes one by one.
9. Once you are confident that synchronization of alarms, trends etc., is complete, and that your 2018 clients are working correctly, shutdown runtime on the Standby server.

Please be aware that during this stage, the client nodes will only communicate with their corresponding server.

A 7.20 client will not be able to communicate with Citect SCADA 2018 Server. Likewise, Citect SCADA 2018 Client will not be able to talk to v7.20 Server.

10. Upgrade Citect SCADA on this server according to the offline upgrade procedure.
11. Restart the Standby server, now upgraded.
12. Once the Standby is running fine, check for hardware alarms on connection to Primary.
13. Check functionality of the system as a whole.
14. Finally, test redundancy by switching off the Primary server and assuring Standby takes over and Clients switch over.

### 7.1.1. Special Considerations: 7.20 to Citect SCADA 2018

#### Custom Alarm Filtering

The AlarmSetQuery CiCode function was deprecated in 7.30. This means that if you are using custom alarm filtering code, you will most likely need to convert it.

Please refer to the following help topic for more detailed help with this process *Using Citect SCADA > Alarms > Using Custom Alarm Filters > Converting Legacy AlarmSetQuery Functions.*

#### Alarm server synchronization during online upgrade

As part of Citect SCADA 2018 development efforts, we have spent time ensuring and testing the online upgrade from 7.20. This process should go smoothly as long as you follow this guide. However, in the event that there is a disconnection or timeout during synchronization between the 2018 and 7.20 alarm servers you only need to shutdown your 2018 server, delete the alarm database and re-start it again and wait for the synchronization between servers to finish.

Also, you can increase the timeout using the **[Alarm]StartTimeout** .INI parameter. This will allow the 2018 server to wait for connection from its 7.20 peer.

If you find that the synchronization between the two servers is failing repeatedly, then you can delete the alarm database, and place your ALARMSAV.DAT and ALARMSAVINDEX.DAT on the [Alarm]SavePrimary directory and the 2018 server will convert the data. However, we recommend always trying the peer synchronization first.

Once the Citect SCADA 2018 has created the [Alarm Database](#) it will not attempt to read alarm history files nor try to synchronize with its 7.20 peer. This is why you need to delete the Alarm Database before attempting conversion of files or peer synchronization.

### Changes during the upgrade process

Because of the differences between Citect SCADA 2018 and 7.20, any actions that happen during the online upgrade process are subject to the incompatibilities that are not reconcilable between versions. However, the scenarios are quite particular and should not have a great impact if any, on your SCADA system's ability to fulfil its purposes.

## 7.2. Online Upgrade steps: 7.40 SP1 to Citect SCADA 2018

1. Make sure you have added the following parameters on the .INI file to all your server nodes before you start the online upgrade.

**[LAN]EarliestLegacyVersion = 7400.**

You will need to restart the servers after adding the parameter for the changes to take effect.

2. Shutdown SCADA runtime on the Primary server
3. Upgrade Citect SCADA on this server according to the offline upgrade procedure.
4. Place the backed-up Alarm database on the [CtEdit]Data directory. This will allow a quicker synchronization of alarm servers.
5. Restart the primary server, now upgraded.
6. Now, the Citect SCADA 2018 server will synchronize its alarm database with the running 7.40 SP1 server. You need to wait for the synchronization process to finish, and this will depend on the size of your alarm database. The synchronization information is available from the main kernel window of the Alarm Process as well as the syslog.
7. Upgrade your client nodes one by one.
8. Shutdown runtime on the Standby server.
9. When the newly upgraded 2018 server assumes the primary server role it will migrate the entire alarm database to the new format, and you should now be able to see Alarm Summary data on all migrated Clients.
10. Upgrade Citect SCADA on this server according to the offline upgrade procedure.
11. Restart the Standby server, now upgraded.
12. Check functionality of the system as a whole.
13. Finally, test redundancy by switching off the Primary server and assuring Standby takes over and Clients switch over.

Due to technical limitations Citect SCADA 2018 nodes will not be able to display Alarm Summary data until after the upgrade.

### 7.2.1. Special Considerations: 7.40 SP1 to Citect SCADA 2018

#### Alarm Summary

The v2018 Summary feature will be disabled when connecting to a v7.40 server. You may still see summary records for active alarms.

#### Alarm Save files

When doing an online upgrade from 7.40 SP1 to 2018 please ensure that any pre 7.20 Alarm Save files are removed from the 2018 project folders (e.g. <project\_cluster>\_ALMSAVE.DAT and <project\_cluster>\_ALMINDEXSAVE.DAT).

#### Historical Alarm Events

Set the [Alarm.<Cluster Name>.<Server Name>]KeepOnlineFor and [Alarm.<Cluster Name>.<Server Name>]ArchiveAfter .INI parameter to a date prior to the earliest historical event date from which you want to migrate.

## 7.3. Upgrading from v2015

To upgrade from v2015:

1. Check that you have SP1, Patch 6 or later installed. For instructions on upgrading to this version, refer to the v2015 documentation.
2. Check that you have added the following parameters on the .INI file to all your server nodes before you start the online upgrade.

#### **[LAN]EarliestLegacyVersion = 7500**

Restart the servers after adding the parameter for the changes to take effect.

3. Shutdown SCADA runtime on the primary server
4. Upgrade Citect SCADA on this server according to the offline upgrade procedure.
5. Place the backed-up Alarm database in the [CtEdit]Data directory. This will allow a quicker synchronization of alarm servers.
6. Restart the primary server, which is now upgraded.
7. Citect SCADA 2018 server will synchronize its alarm database with the running v2015 server. You need to wait for the synchronization process to finish, and this will depend on the size of your alarm database. The synchronization information is available from the main kernel window of the Alarm Process as well as the syslog.
8. Upgrade your client nodes one by one.
9. Shutdown runtime on the standby server.
10. When the newly upgraded v2018 server assumes the primary server role it will migrate the entire alarm database to the new format, and you should now be able to see Alarm Summary data on all migrated Clients.
11. Upgrade Citect SCADA on this server according to the offline upgrade procedure.
12. Restart the standby server, which is now upgraded.
13. Check functionality of the system as a whole.
14. Test redundancy by switching off the primary server and assuring standby takes over and Clients switch over.

### 7.3.1. Special Considerations: 2015 SP1 Patch 6 to Citect SCADA 2018

#### Alarm Save Files

When doing an online upgrade from v7.50 to v2018 check that any pre-7.20 Alarm Save files are removed from the v2018 project folders (e.g. <project\_cluster>\_ALMSAVE.DAT and <project\_cluster>\_ALMINDEXSAVE.DAT).

## 7.4. Upgrading from v2016

To upgrade from v2016:

1. Check that you have the release version installed. For instructions on upgrading to this version, refer to the v2016 documentation.
2. Check that you have added the following parameters on the .INI file to all your server nodes before you start the online upgrade.

```
[LAN]EarliestLegacyVersion = 8000.
```

Restart the servers after adding the parameter for the changes to take effect.

3. Shutdown SCADA runtime on the primary server
4. Upgrade Citect SCADA on this server according to the offline upgrade procedure.
5. Place the backed-up Alarm database in the [CtEdit]Data directory. This will allow a quicker synchronization of alarm servers.
6. Restart the primary server, which is now upgraded.
7. Citect SCADA v2018 server will synchronize its alarm database with the running v2016 server. You need to wait for the synchronization process to finish, and this will depend on the size of your alarm database. The synchronization information is available from the main kernel window of the Alarm Process as well as the syslog.
8. Upgrade your client nodes one by one.
9. Shutdown runtime on the standby server.
10. When the newly upgraded v2018 server assumes the primary server role it will migrate the entire alarm database to the new format, and you should now be able to see Alarm Summary data on all migrated Clients.
11. Upgrade Citect SCADA on this server according to the offline upgrade procedure.
12. Restart the standby server, which is now upgraded.
13. Check functionality of the system as a whole.
14. Test redundancy by switching off the primary server and assuring standby takes over and Clients switch over.

## 7.5. Troubleshooting Online upgrade

The issues you might encounter during your Online Upgrade will be related to runtime issues and redundancy connectivity. For pre-runtime issues such as Compiler Errors please refer [to this section](#).

It is important that your redundant servers are in communication during the upgrade, otherwise, it is not really an Online upgrade and you will end up losing data.

**My redundant servers fail to communicate**

I cannot make my redundant servers communicate and I keep getting the hardware alarm “Redundant Server not found”

1. Please make sure you have set your [LAN]EarliestLegacyVersion parameter correctly.
  - a. In the case you are upgrading 7.20 use [LAN]EarliestLegacyVersion=7200.
  - b. In the case you are upgrading 7.40 use [LAN]EarliestLegacyVersion=7400.
2. Please make sure you have run the computer setup wizard and set both servers to Networked mode:
3. Also, make sure to set the same server password on both servers on the computer setup wizard:



Figure 10: Computer Setup Wizard: Server Authentication section

**My system is performing slowly even though Hardware and software requirements are met**

Please check your system’s power options: Control Panel → All Control Panel Items → Power Options.

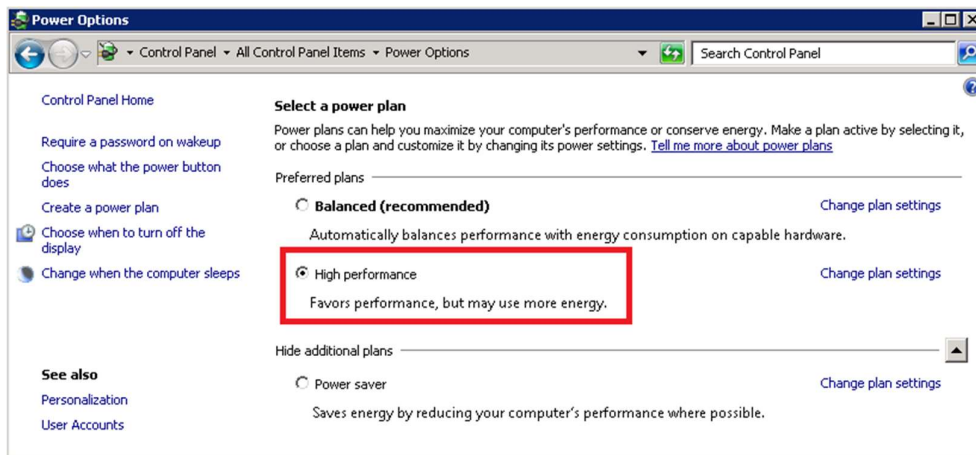


Figure 11: Windows' Power Options

This is particularly relevant on Windows Server machines, which have this option enabled by default.

**Remove Upgrade related parameters**

After finalizing the upgrade process and confirming that runtime is fully functional, we recommend removing or updating the following .INI parameters accordingly. You will need to restart the servers after changing the parameters for the changes to take effect.

- **[Alarm]SavePrimary**: please remove.
- **[Alarm]SaveStandby**: please remove.
- **[Debug]Kernel = 0**: this is to enhance security and keep operators out of the kernel.
- **[LAN]EarliestLegacyVersion**: please remove.

It is important to note that after removing the EarliestLegacyVersion parameter, the next time you change your user's passwords, we recommend you change all the passwords on one server, and then roll out the updated project in the same order in which you conducted the online upgrade (Primary Server, Clients, and finally, Standby Server). Please read [KB article Q7865](#) for more information.

**Upgrade third party applications**

Please ensure that any CtAPI client is upgraded to use the DLL's included in Citect SCADA 2018. Keep in mind that you also need to be aware of the User password's changes. Please read [KB article Q7866](#) for more information.

For a complete list of the DLL's you need to upgrade, please read the Technical Reference > CtAPI Functions help topic. [Also available online.](#)

Also, if you find that upgrading your CtAPI clients is not possible, please get in touch with Citect support for further clarifications.

## 8. Reference to knowledge base articles

**Q8998:** Cannot Convert Project Error in Graphics Builder

**Q8982:** Web Client error of "An AsyncTaskBuffer was disposed in it's finalizer ... "

**Q8960:** Symbol search failed compile error pointing to ACCUMS.DBF

**Q8951:** Pulse() Used With the IfDef() Macro Causes Compile Errors

**Q8944:** Symbol search failed compile error after installing the latest patch.

**Q8920:** Citect OPC DA Server no longer runs as a service after installing an update (Service Pack or patch) to Citect 2015(7.50).

**Q8892:** MsgRPC or ServerRPC Cicode doesn't work after upgrading to Citect SCADA / Vijeo Citect 2015

**Q8887:** OFSOPC Standby device activates items while being on standby mode

**Q8884:** Floating License Manager in Vijeo Citect 2015

**Q8875:** Web Client Quick Start Guide for Vijeo Citect 2015 (7.50)

**Q8874:** Citect Runtime Manager does not start properly on a machine with more than 32 logical cores

**Q7873:** User privileges not respected by Alarm Summary cicode functions

**Q7866:** Updating CTAPI clients to be compatible with Vijeo Citect 2015

**Q7870:** Creating Custom .NET DLLs in Vijeo Citect 2015

**Q7869:** Migrating an Engineered Solution to the Run as a Windows Service Feature in Vijeo Citect 2015 .



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