

ConverterWorX – Convert GENESIS32 Application to GENESIS64



Application Note

December 2017

Description: Guide to converting legacy projects/applications, running on GENESIS32 to GENESIS64.

General Requirement: Basic GENESIS32 and GENESIS64 knowledge, GENESIS32 9.35 (or later) and GENESIS64 10.85 (or later). It is highly recommended that you use ConverterWorX tools from matching version of 32-bit and 64-bit products. To find out which versions are compatible, see the *ICONICS – Compatible Software and Operating Systems* application note, section labeled “ICONICS Compatibility on One Machine”.

Introduction

When possible, ICONICS highly encourages users to design projects from the ground up for GENESIS64 in order to take full advantage of new tools and functionality, however this can be a daunting prospect and many users would prefer to first convert their existing project to GENESIS64 and enhance it from there.

The ConverterWorX tool was developed by ICONICS to provide an easy way to convert existing 32-bit GENESIS32 applications to the latest 64-bit GENESIS64 application format. Thanks to this users are allowed to continue to make use of their existing 32-bit (GENESIS32) project in a 64-bit (GENESIS64) environment where this project can be enhanced with new features, usability, and a modern look and feel.

ConverterWorX consists of three tools:

- GENESIS32 File Extraction Utility (the Extractor)
- GENESIS32 Conversion Utility (the Exporter)
- Auto Configuration Shell/GENESIS64 ConverterWorX Utility (the Importer)

Usage of each utility and its involvement in the project conversion process will be described in detail in the following sections of this application note. Figure 1 shows the ConverterWorX process.

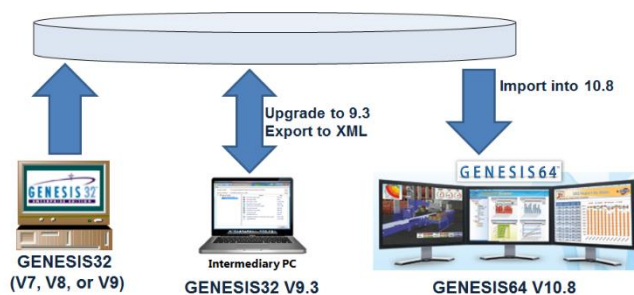


Figure 1 - ConverterWorX process

Overall the process consists of three steps:

1. Extraction - file copy of GENESIS32 v7.x, v8.x, v9.x displays and/or configuration databases.
2. Upgrade of displays and/or configuration databases to the latest version 9.x (such as 9.5) followed by conversion of data to intermediate XML files.
3. Import of converted intermediate XML files to GENESIS64.

NOTE: As you can see, GENESIS32 v6.x or older system conversion is not supported by ConverterWorX. It is possible to perform manual upgrade of displays and/or configuration databases to GENESIS32 v7.x by using v7.x tools. Then you can convert these files to GENESIS64 using ConverterWorX.

Conversion Limitations and Possible Problems

As of 10.90, ConverterWorX provides nearly 1:1 conversion experience for the following GENESIS32 modules:

- BACnet
- AlarmWorX32 Logger
- AlarmWorX32 Server
- Global Aliasing
- GraphWorX32
- Language Aliasing
- RecipeWorX
- ScheduleWorX32
- TrendWorX32 Logger
- Unified Data Manager

TrendWorX32 Logger Data and Configurations can be converted to either TrendWorX64 or Hyper Historian.

It is important to mention that ConverterWorX is not able to convert GraphWorX32 VBA scripts, which are no longer supported in GraphWorX64. These scripts have to be manually rewritten into Jscript.NET to ensure proper display functionality.

It is also important to note that the design of your project can cause dysfunction in converting your project to GENESIS64. If this happens, then it is needed to investigate the cause of any non-working project features. **Often the problem is caused by improper use of options during the last conversion stage - Import process**, where the Importer tool offers tens of options on how to treat data sources, objects, and the conversion of other items.

For example, if you use Global Aliases in your project, then specific settings can lead to improper v9 syntax translation where v9 path of <#Server#>\Folder.Tag will be translated into @<#Server#>\Folder.Tag.Value (v10 syntax). The Global Aliasing Server can contain (when specific options are used during Import process) a value of @ICONICS.Simulator.1.Value.

ConverterWorX – Convert GENESIS32 Application to GENESIS64



Application Note

December 2017

After Global Aliasing resolution this will turn into an invalid tag path of @@ICONICS.Simulator.1.Value\Folder.Tag.Value.

GENESIS32 File Extraction Utility (the Extractor)

This ConverterWorX module:

- Converts SQL Server Configuration databases to .MDB format
- Converts SQL Server Logging databases to .MDB format
- Copies displays/configuration information to shared media

NOTE: There is a 4GB limit. If the databases to be converted are larger than 4GB, then there is a different approach. To convert logged data, users must provide an .udl file (that points to a former database) within the Importer project. Please refer to the help files on how to proceed with importing logged data larger than 4GB.

This tool does not require installation and can be simply copied to a USB stick or placed on a network share to be run from that location. The Extractor can be found on GENESIS32 9.35 (or later) DVD under Tools/Extractor. All files located in this folder have to be copied and the structure has to be kept – you can simply copy the whole folder onto your machine.

The goal in the first part of the three-stage ConverterWorX process is to run this tool on the machine where the displays and configuration databases are residing. Any running application can remain running as the tool does not do anything other than file copy operation. If any configuration databases and/or logged data are stored in SQL databases, then the tool performs the conversion to .MDB file format for transfer. The .MDB files need to be transferred to an intermediary machine where GENESIS32 9.35 (or later) with the Exporter tool is installed. It is important to understand that even file copy and database conversion process can impose some load on older machines. This may slow down the responsiveness of running applications, including the SQL Server.

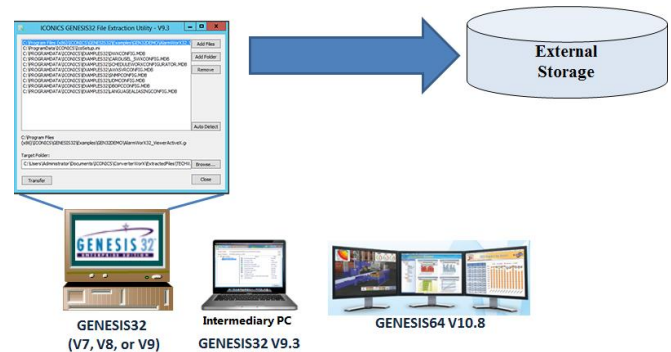


Figure 2 - Extraction stage

Process for performing Extraction:

1. Run Extractor.exe
2. In opened Extractor window click 'Add files' or 'Add folder' to add files or whole folder with files (displays, configuration databases – .mdb or .udl files, in case of configurations stored in SQL databases).
3. You can click the 'Auto Detect' button to detect and add to the list active configuration databases and the IcoSetup.ini file (if applicable).
4. Select Target folder by clicking the 'Browse...' button or typing it manually.
5. By clicking the 'Remove' button you can remove the highlighted item from the list. Clicking the 'Clear' button allows you to clear the whole list.
6. When you are set with the list of files for transfer, you can click the 'Transfer' button to convert any configuration databases stored in SQL Server (where the connection string to the database is stored in listed .udl file) to .mdb database and copy all files to the folder specified in the Target folder textbox.
7. An overall progress window will appear so that you will know the progress of the extraction process.

ConverterWorX – Convert GENESIS32 Application to GENESIS64



Application Note

December 2017

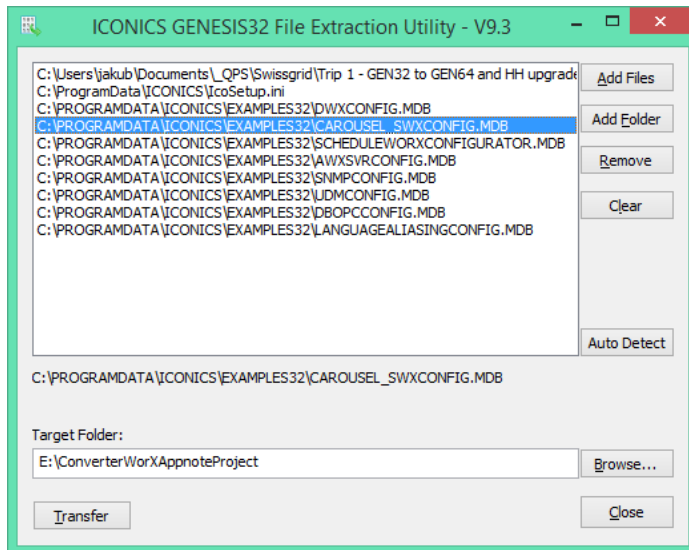


Figure 3 - Extractor GUI

When you have your .gdf, .mdb, and other files extracted (copied) from the machine where the legacy system is running, you can continue with the conversion process. The next step is to run the Exporter tool on an intermediary PC with GENESIS32 9.35 (or later) installed to convert these files into intermediate XML files used during last stage of the conversion process.

GENESIS32 Conversion Utility (the Exporter)

This conversion stage has to be done on a machine with GENESIS32 9.35 (or later) installed which contains the GENESIS32 Exporter.

The purpose of this tool is to:

- Update all displays and configurations to the GENESIS32 9.35 (or later) format
- Prepare displays, configurations, logged data, and other data for the GENESIS64 Import process by converting data to intermediate XML files.

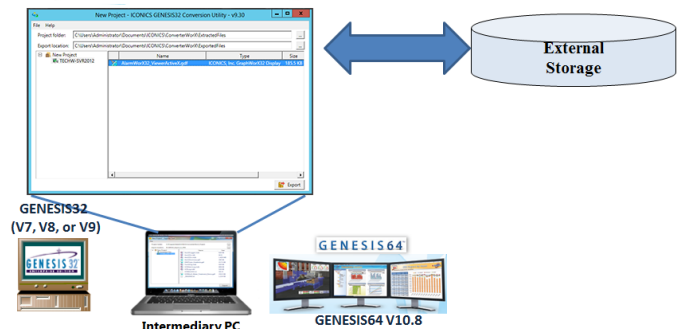


Figure 4 - Conversion stage

It is expected that the extracted files will be available for the machine where the Extractor will be running. It can be stored on a USB stick, locally on the hard-drive, or remotely on a network share.

It is important to mention that the Exporter can work and convert project files from multiple machines (to keep a project file structure) during single run, but **it expects that files from separate machines are located in separate sub-folders**. By default the Extractor uses this project folder, but this path can be changed:

C:\Users\<user>\Documents\ICONICS\ConverterWorX\ExtractedFiles

For example it could contain "UDMNode" and "AWXNode" folders, where each contains appropriate files. These folders will be then visualized as nodes with computer icons in the Extractor's tree control, as shown in Figure 5.

You can create the folder structure manually and then point the Extractor to the folders containing these sub-folders, or you can let the Extractor create the folder structure.

To proceed with conversion do the following:

1. Run GENESIS32 Exporter from the Start Menu
2. In opened Exporter window you can specify:
 - a. Project folder - location where original (GENESIS32) files are or will be stored within sub-folders representing nodes
 - b. Export location – place where converted files will be stored while maintaining same folder structure as in Project folder
3. If you did not pre-create the structure in the Project folder manually, you can now add a folder (with files from given node) by right-clicking.

ConverterWorX – Convert GENESIS32 Application to GENESIS64



Application Note

December 2017

4. You can also add or delete files or folders by right-clicking appropriate item in the tree or list and selecting the action you would like to perform.

IMPORTANT NOTE: 'Add File', 'Add Folder' actions copy the files or folder to Project Folder and 'Delete' action PHYSICALLY deletes the files and/or folders from Project folder

5. When you are satisfied with the folder structure you can proceed with the update and conversion process by clicking the 'Export' button.
6. The progress information window will appear informing you about the state of conversion, warnings and errors.

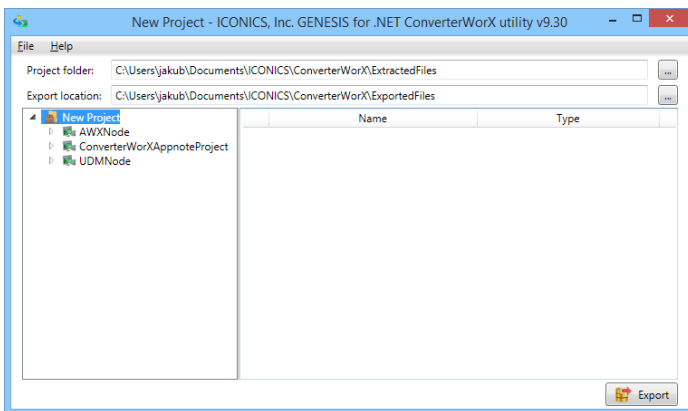


Figure 5 - Exporter GUI

Auto Configuration Shell / GENESIS64 ConverterWorX Utility (the Importer)

In this last stage of ConverterWorX process, it is expected that you have the files from the GENESIS32 system converted (exported) to intermediate XML files. During this 'Import' process these XML files are converted to appropriate GENESIS64 data.

Functions of this tool are to:

- Import data into GENESIS64
 - GraphWorX displays
 - Configuration databases
 - Logged AlarmWorX and TrendWorX data
 - Other configuration information

To successfully complete this last stage you need to have GENESIS64 10.85 (or later) installed.

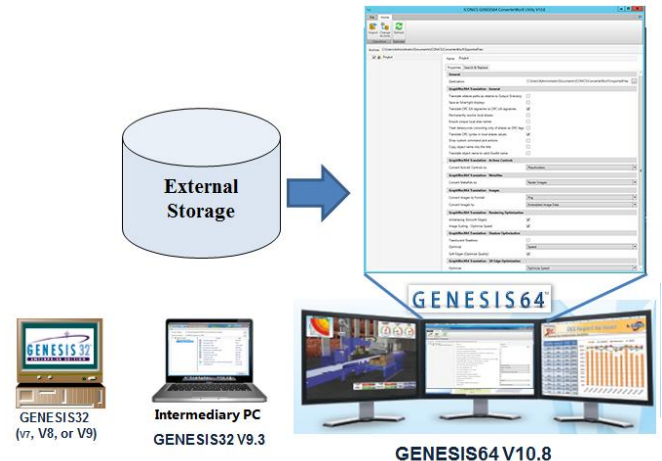


Figure 6 - Import stage

To proceed with import to GENESIS64 10.85 (or later), do the following:

1. Launch ConverterWorX.
2. In opened window click the 'ConverterWorX Importer' button in the ribbon.
3. By default the path:
"C:\Users\<user>\Documents\ICONICS\ConverterWorX\ExportedFiles" will be used and scanned for converted project files. You can alter this path by clicking the '...' button or 'Change Archive' button in the Home tab of the ribbon toolbar.
4. Now you can alter conversion options – properties upon selecting the appropriate item in the tree, where main options will appear after selecting top-most 'Project' tree item (like destination, data sources treating, etc.) – please refer to the help files for more information.
5. To start the conversion process, click the 'Import' button in the Home tab of the ribbon toolbar.
6. The progress window will appear informing you about state of conversion, warnings and errors.
7. After conversion you will find all displays and configurations usable in GENESIS64.

ConverterWorX – Convert GENESIS32 Application to GENESIS64



Application Note

December 2017

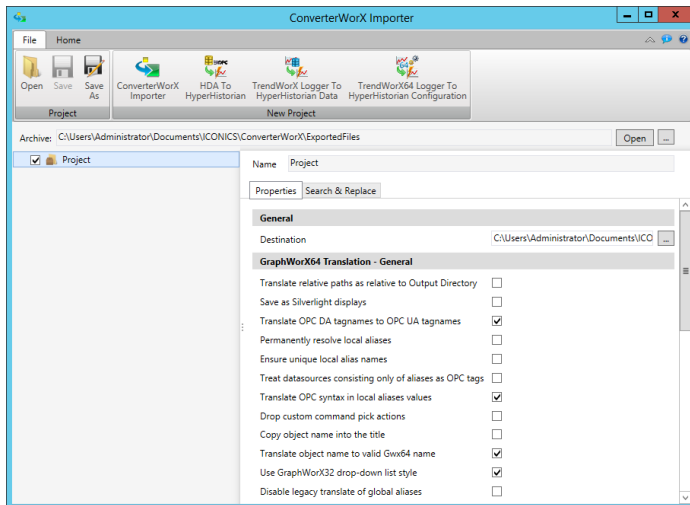


Figure 7 - Importer GUI

For additional and more complex conversion processes please refer to appropriate Help topics or additional documents located on GENESIS64 DVD or ICONICS website. For example, to find a way to convert TrendWorX32 Logger configuration and data to Hyper Historian, etc.