



ProviewR
OPEN SOURCE PROCESS CONTROL

Release Notes V7.0

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Upgrading to ProviewR V7.0.0

This document describes new functions in ProviewR V7.0.0, and how to upgrade a project from V6.1.0 to V7.0.0.

Updates

Modbus TCP

Disable communication in redundancy passive mode

The Modbus communication can be disabled for a passive node by setting `DisableSlave` in the slave object to `Passive`.

New Wb script function

DeteteObject()

```
int DeleteObject(string name)
```

Delete an object in the workbench.

Arguments

string name The name of the object to delete.

Returns the status of the delete operation.

Example

```
int sts;  
sts = DeleteObject("H1-H2-TempSwitch");  
if (EVEN(sts))  
    printf("Object not found");  
endif
```

New script function

lng_translate()

```
string lng_translate(string str)
```

Translate a text to the current language.

Arguments

string str String to translate

Returns the translated string. If no translation is found, the supplied string is return untranslated.

Example

```
string str;  
str = lng_translate("Go ahead, make my day");
```

Character encoding changed to UTF-8

The internal character encoding for strings in databases, graphs, texts etc, is changed from ISO5589-1 to UTF-8. This increases the number of available characters from 255 to about 2097152 making it possible to write and store texts in most literary languages.

Conversion to UTF-8

ISO8859 is a single byte encoding where every character uses one byte, while UTF-8 is a multibyte encoding which uses between 1 and 4 bytes per character. ASCII characters with byte code 0 – 127 are the same in both encodings, but characters with byte code larger than 127 are in UTF-8 coded with two bytes. Thus a string containing such characters will increase in length when converted to UTF-8. As string attributes in the ProviewR database have fix sizes, texts might be too long after the conversion and have to be adjusted. Description attributes with a previous size of 80 bytes, have been increased to 104 bytes to avoid this, but other string attributes are not increased. Any oversized texts will be detected when the volume dump file is loaded into the database, and error messages should be analyzed and corrected, otherwise the oversized string will be lost.

Development and runtime database

Object name

An object name can contain the characters a-z, A-Z, 0-9, _, \$ and any UTF-8 character coded with 2, 3 or 4 bytes.

An object name has a maximum length of 31 bytes and might be too long after the conversion to UTF-8.

Class name

A class name has the same size and character set as an object name.

A struct name is generated for the class when it is created by finding lookalike ASCII characters for any non ASCII character. If lookalike characters can't be found the generated struct name will be 'C' followed by the class identity. The struct name is stored in the ObjBodyDef object.

Attribute name

An attribute name also has the same size and character set as an object name. The name in the c struct is specified in PgmName in the attribute object. A PgmName is generated but might have to be modified if lookalike ASCII characters can't be found.

String attributes

String attributes can contain any UTF-8 character. As before strings are null terminated.

Xtt help files

The default encoding of xtt_help files was previously ISO8859-1 but is now UTF-8. The encoding

could be specified to UTF-8 with the '<coding> UTF-8' tag on the first line.

Xtt help files on \$pwrp_cnf (\$pwrp_cnf/xtt_help*.dat) that do not have the coding specified to UTF-8 will be converted to UTF-8 by the upgrade script.

Language files

The default encoding of local language files was previously ISO8859-1 but is now UTF-8. The encoding could be specified to UTF-8 with the 'Coding: UTF-8' tag on the first line.

Local language files on \$pwrp_pop (\$pwrp_pop/xtt_lng_*.dat) that do not have the coding specified to UTF-8 will be converted to UTF-8 by the upgrade script.

Ge

The encoding of texts, string and object names are changed from ISO8859-1 to UTF-8. Also the encoding of pwg and pwsg changed to UTF-8.

pwg files can be manually converted with the Ge command 'convert V70'. Open the graph in the Ge editor and enter the command. All pwg files in \$pwrp_pop will be converted by the upgrade script.

pwg files in \$pwrp_web should previously be copied from \$pwrp_pop and converted to UTF-8. This was done with the BuildConvert object 'Build-pop-pwg_web' in the directory volume. The conversion is not needed any more and the object is exchanged to a BuildCopy object by the upgrade script.

Sev database

The encoding av all text columns in the process history database are modified to utf8mb4. Conversion of the columns in an existing database is made the first time the server process is started in V7.0. The first time ProviewR is started on a sev server there will be a delay before the server is up and running.

The items.description column is extended from 80 to 104 bytes.

Communication

The net handler, message handler and process history protocols are modified and are not backward compatible. It is not possible to communicate with nodes of older ProviewR version.

Manual conversion of files

Most files are converted to UTF-8 by the upgrade script, and they are described in the upgrade.sh section below. Other files can be converted manually with iconv

```
> iconv -f ISO-8859-1 -t UTF-8 < input.txt > output.txt
```

Multilingual development environment

Translations of menus, messages and other text are implemented in the development environment. Translation tables exist for Swedish, German, French and Chinese.

The language will be selected from the current locale in \$LANG. You can also specify the option -l to the configurator of ge editor at start.

```
> pwr -l sv_se
> wb_ge -l de_de
```

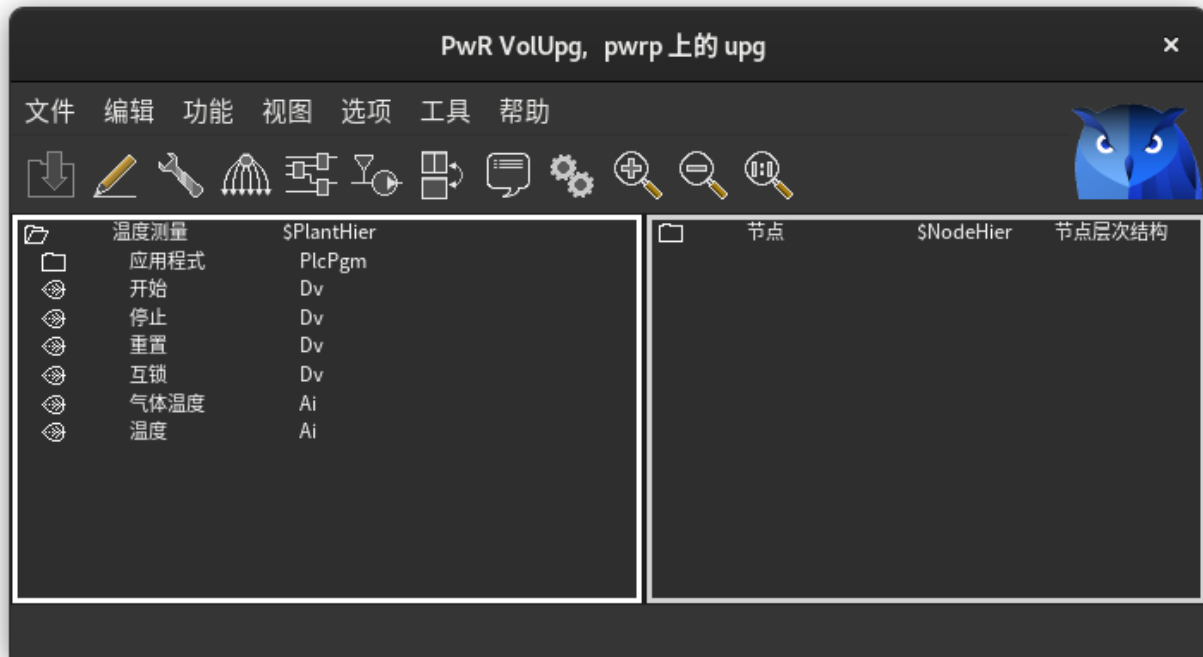


Fig Configurator with language zh_cn

Multilingual web interface

Translation tables is also implemented in the web interface. The language is selected in the OpPlaceWeb object.

Upgrade procedure

The upgrading has to be done from any V6.0. If the project has a lower version, the upgrade has to be performed stepwise following the schema

V2.1 -> V2.7b -> V3.3 -> V3.4b -> V4.0.0 -> V4.1.3
→ V4.2.0 → V4.5.0 → V4.6.0 → V4.7.0 → V4.8.6 → (V5.0.0) → V5.1.0 → V5.2.0 → V5.3 → V5.4 → V5.5
→ V5.6 → V5.7 → V5.8 → V5.9 → V6.0 → V6.1 → V7.0

The upgrade procedure is to dump the database with reload.sh, change the version of the project in the projectlist, and then execute the script upgrade.sh.

NOTE !!

Do not activate Update Classes.

If the previous version should be kept, first make a copy of the project.

Make a copy of the project

Do `sdf` to the project and start the administrator

```
> pwra
```

Now the Projectlist is opened. Enter edit mode, login as administrator if you lack access. Find the current project and select Copy Project from the popup menu of the ProjectReg object. Open the copy and assign a suitable project name and path. Save and close the administrator.

Dump the databases

Execute the first pass, *dumpdb*, in the script *reload.sh*.

```
> reload.sh
```

```
reload.sh  Dump and reload of database.
```

```
Arguments  Database or databases to reload.
            I no arguments is supplied, all databases will be
reloaded.
```

```
Pass
```

```
dumpdb      Dump database to textfile $pwrp_db/'volume'.wb_dmp
classvolumes Create structfiles and loadfiles for classvolumes
renamedb    Rename the old database
loaddb      Load the dump into the new database
compile     Compile all plcprograms in the database
createload  Create new loadfiles.
createboot  Create bootfiles for all nodes in the project.
```

```
-- Reloading volume  volupg
```

```
Pass: dumpdb classvolumes renamedb loaddb compile createload createboot
```

```
Enter start pass [dumpdb] >
```

```
-----
- Pass dump database
-----
```

```
-Do you want to continue ? [y/n/go] y
```

```
-- Dumping volume volupg into /usr/local/pwrp/upg/src/db/volupg.wb_dmp
```

```
I Database opened /usr/local/pwrp/upg/src/db/volupg.db
```

```
-----
- Pass create structfiles and loadfiles for classvolumes
-----
```

```
-Do you want to continue ? [y/n/go] n
```

Change version

Enter the administrator and change the version of the project to V7.0.0. Save and close the administrator.

Execute upgrade.sh

Do a sdf to the project and run upgrade.sh.

Upgrade.sh is divided into passes and can be restarted from any pass.

Passes

cnvfiles

Converts the encoding for files to UTF-8.

The following files are converted.

Ge graphs	\$pwrp_pop/*.pwg	Converted to UTF-8 and the version is set to V7.0.0.
Xtt help files	\$pwrp_cnf/xtt_help*.dat	Xtt help files with other names should be converted manually. Files marked with <coding> UTF-8 in first row are not converted.
Local language files	\$pwrp_pop/xtt_lng_*.dat	Files marked with 'Coding: UTF-8' in first row are not converted.
Directory volume and class volumes	\$pwrp_db/*.wb_load	
Root volumes dump files	\$pwrp_db/*.wb_dmp	

savedirectory

The directory volume is saved.

classvolumes

Create loadfiles and structfiles for the class volumes.

If a class name exceeds an error message will occur in this pass, eg

```
E Wbl error: %LDH-E-BADNAME, bad object name,  
/usr/local/pwrp/test70/src/db/cvoltest70.wb_load line: 43
```

Unfortunately this error is not well handled and the loading will terminate with a remaining lock file. To continue

- edit the `wb_load` file and shorten the class name.
- edit all `wb_dmp` files and replace all occurrences of the class name with the new name.
- remove the lockfile `$pwrp_db/directory.wb_load.lock`
- execute pass *classvolumes* again.

If an attribute name exceeds 31 bytes an error message will occur in this pass, eg

```
E Wbl error: Object name syntax error,
    /usr/local/pwrp/test70/src/db/cvoltest70.wb_load line: 248
```

Edit the `wb_load` file and shorten the attribute name. Execute the *classvolumes* pass again.

renamedb

Store the old databases under the name `$pwrp_db/'volumename'.db.1`.

loaddb

Create volume databases and load the dump files into them.

The object name size is limited to 31 characters. Object names containing special characters might exceed this size after the conversion to UTF-8. This will cause an error message when the dump file is loaded, eg

```
E Wbl error: Object name syntax error,
    /usr/local/pwrp/test70/src/db/voltest70.wb_dmp line: 10299
```

Edit the `wb_dmp` file and reduce the name length. Execute the passes *renamedb* and *loaddb* again.

String and text attributes can after the conversion be too long and will result in an error message at the load of the dump file, eg

```
E Wbl error: Unable to convert string to value,
    /usr/local/pwrp/test70/src/db/voltest70.wb_dmp line: 10322
```

Edit the file and correct the string at the specified line. Execute the passes 'renamedb' and 'loaddb' until the error messages are removed.

cnvobjects

Exchanges the BuildConvert object 'Build-pop-pwg_web' in the directory volume to a BuildCopy object.

compile

Compile all the plc programs.

createload

Create loadfiles for the root volumes.

createboot

Create bootfiles for all nodes in the project.

List example

```
> upgrade.sh
upgrade.sh Upgrade from 6.1 to 7.0
Passes:
-----
cnvfiles      Convert files
savedirectory Save directory volume
classvolumes  Create loadfiles for classvolumes
renamedb     Rename old databases
loaddb       Load databases
cnvobjects   Convert objects
compile      Compile all plcprograms in the database
createload   Create new loadfiles
buildnodes   Build all nodes in the project
createpackage Create distribution packages for all nodes in the project

-- Upgrade upg
```

Enter start pass [cnvfiles] >

Pass convert files

```
Do you want to continue ? [y/n/go] y
Converting from V6.1 to V7.0 overview.pwg
Converting to UTF-8 /usr/local/pwrp/upg/src/cnf/xtt_help.dat
No local language files to convert
Converting to UTF-8 /usr/local/pwrp/upg/src/db/directory.wb_load
Converting to UTF-8 /usr/local/pwrp/upg/src/db/volupg.wb_dmp
```

Pass save directory volume

```
Do you want to continue ? [y/n/go] y
-- Processing line: 82
-- Building volume directory
I Volume directory loaded
I Database opened /usr/local/pwrp/upg/src/db/directory.wb_load
-- Saving file /usr/local/pwrp/upg/src/db/directory.wb_load ->
/usr/local/pwrp/upg/src/db/directory.wb_load.1
%WNAV-E-MSG, Session saved
```

Found classvolumes:

Pass create structfiles and loadfiles for classvolumes

```
Do you want to continue ? [y/n/go] y
```

Pass rename old databases

Do you want to continue ? [y/n/go] y
-- Saving file /usr/local/pwrp/upg/src/db/volupg.db ->
/usr/local/pwrp/upg/src/db/volupg.db.1

Pass load database

Do you want to continue ? [y/n/go] y
-- Loading volume volupg

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MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.

-- Processing line: 82
-- Building volume directory
I Volume directory loaded
I Database opened /usr/local/pwrp/upg/src/db/directory.wb_load
-- Processing line: 430
-- Building volume VolUpg
I Volume VolUpg loaded

Pass convert objects in loaded database

Do you want to continue ? [y/n/go] y
-- Processing line: 82
-- Building volume directory
I Volume directory loaded
I Database opened /usr/local/pwrp/upg/src/db/directory.wb_load
-- Saving file /usr/local/pwrp/upg/src/db/directory.wb_load ->
/usr/local/pwrp/upg/src/db/directory.wb_load.1
%WNAV-E-MSG, Session saved

Pass compile plcprograms

Do you want to continue ? [y/n/go] y
I Database opened /usr/local/pwrp/upg/src/db/volupg.db
-- Plc window generated H1-Plc-W
-- Plc window compiled for x86_64_linux optimized -03 H1-Plc-W
-- Plc plcpgm compiled for x86_64_linux optimized -03 H1-Plc

Pass create loadfiles

Do you want to continue ? [y/n/go] y
I Database opened /usr/local/pwrp/upg/src/db/volupg.db
-- Building archive for volume: 000_001_001_017

```
-- Archive built for volume: 000_001_001_017
-- Working with load file volume 'VolUpg'...
-- Open file...
-- Successfully created load file for volume 'VolUpg'
-- 37 objects with a total body size of 51056 bytes were written to new
file.
```

Pass build nodes

Do you want to continue ? [y/n/go] y

-- Build all nodes

-- Building node iron_arrow

I Database opened /usr/local/pwrp/upg/src/db/volupg.db

-- Build node iron_arrow

I Build: copy pop /usr/local/pwrp/upg/src/pop/overview.pwg ->
/usr/local/pwrp/upg/bld/x86_64_linux/exe/overview.pwg

I Build: copy pop /usr/local/pwrp/upg/src/pop/overview.pwg ->
/usr/local/pwrp/upg/bld/common/web/overview.pwg

I Build: copy \$pwrp_cnf/xtt_help.dat -> \$pwrp_load/xtt_help.dat

-- Creating bootfile for node iron-arrow

-- Plc thread generated priority 22, scantime 0.10000 s, 1 plcpgm's

-- Plc process compiled for x86_64_linux optimized -03 -

-- Plc program linked for x86_64_linux plc_iron-arrow_0999_plc

I Build: Node iron_arrow

%PWRB-S-SUCCESS, successful completion

-- Building node upg

I Database opened /usr/local/pwrp/upg/src/db/volupg.db

-- Build node upg

I Build: copy \$pwrp_cnf/ld_appl_upg_1.txt -> \$pwrp_load/ld_appl_upg_1.txt

-- Creating bootfile for node upg

-- Plc thread generated priority 22, scantime 0.10000 s, 1 plcpgm's

-- Plc process compiled for x86_64_linux optimized -03 -

-- Plc program linked for x86_64_linux plc_upg_0001_plc

I Build: Node upg

%PWRB-S-SUCCESS, successful completion

-- Building node iron_arrow

I Database opened /usr/local/pwrp/upg/src/db/volupg.db

-- Build node iron_arrow

%PWRB-I-NOBUILT, Nothing is built

-- Building node upg

I Database opened /usr/local/pwrp/upg/src/db/volupg.db

-- Build node upg

%PWRB-I-NOBUILT, Nothing is built

Pass create packages

Do you want to continue ? [y/n/go] y

-- Creating distribution packages for all nodes

W No file found: \$pwrp_load/rtt_crr_000_001_001_017.dat

W No file found: \$pwrp_load/rtt_crro_000_001_001_017.dat

W No file found: \$pwrp_load/rtt_crrc_000_001_001_017.dat

W No file found: \$pwrp_load/rtt_crrs_000_001_001_017.dat

W No file found: \$pwrp_load/pwrp_alias.dat

W No file found:

\$pwrp_load/iron-arrow/b55/Rt_xtt:\$pwrp_load/iron-arrow/Rt_xtt:\$pwrp_load/

```
Rt_xtt
W No file found:
$prp_load/iron-arrow/b55/xtt_setup.rtt_com:$prp_load/iron-arrow/
xtt_setup.rtt
W No file found: $prp_cnf/iron-arrow/.rhosts:$prp_db/.rhosts
W No file found: $prp_web/*.html
W Distribute warnings node iron-arrow: 9 warnings
W No file found: $prp_load/rtt_crr_000_001_001_017.dat
W No file found: $prp_load/rtt_crr0_000_001_001_017.dat
W No file found: $prp_load/rtt_crrc_000_001_001_017.dat
W No file found: $prp_load/rtt_crrs_000_001_001_017.dat
W No file found: $prp_load/prp_alias.dat
W No file found: $prp_load/upg/b55/Rt_xtt:$prp_load/upg/Rt_xtt:
$prp_load/Rt_xtt
W No file found:
$prp_load/upg/b55/xtt_setup.rtt_com:$prp_load/upg/xtt_setup.rtt_com:
$prp_loa
W No file found: $prp_cnf/upg/.rhosts:$prp_db/.rhosts
W No file found: $prp_web/*.html
W Distribute warnings node upg: 9 warnings
```

-- The upgrade procedure is now complete.

After upgrade

Delete files generated by the upgrading procedure:

```
$prp_db/*.wb_dmp.*
```

```
$prp_db/*.db.1 (old databases, directories which content also should be removed)
```