Release Notes V4.7

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Upgrading to Proview V4.7.0

This document describes new functions i Proview V4.7.0, and how to upgrade a project from V4.6.1 to V4.7.0.

New functions

Project directories
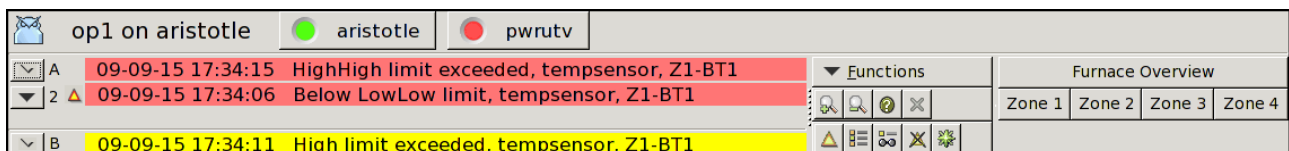
The directory structure of a Proview project is changed.

A project is separated into two trees, a build tree under bld and source files under src. Configuratin files are moved to usr/cnf, $pwrp_cnf. Read more about the directory structure in Designer's Guide.

Profinet

This release i prepared for Profinet, all objects and the configurator etc are present. Profinet will be included in a V4.7.0-x version.

Operator window

- A status bar with system status indication for supervised nodes.

- A Functions menu to open alarm and event windows, curves, process graph etc.

- Xtt command 'create opmenuitem' to create new items in the menu.

- Number of function button increased from 15 to 25.

- Possibility to show alarm time.

- Configuration of which events types will make the the operator window pop.

- Configuraton of language, closebutton etc in OpPlace object.

- Event time and event name viewed in operator window alarm texts.

Alarm and Event window

New toolbar with methods for the selected event. Also some methods for the supervisory object, that can be used for example to find the supervisory object in the plc code.

PlcEditor

Toobar buttons added for creation of text and document objects.

Ge action SetValue

New Ge action to set a specified value into an attribute. Note that the previous method to set values with the command 'set parameter /bypass' is obsolete and doesn't work any more.

Loadfile format

The loadfile format is changed (.dbs files), and not compatible with loadfile format i V4.6 and previous versions. Dbs-files of these versions can not be opened from the configurator (File/Open/Dbs file).

Linux 64

Proview 4.7 is ported to 64 bit linux and distributed in one 32 bit and one 64 bit version.

Mixed development environment

You can have a mixed development environment with both 32 bit and 64 bit linux machines and with a common database server. There are though some restrictions.

A BerkeleyDb database created on a 32 bit platform can not be opened on a 64 bit platform, and vice versa. A mysql database though, can be opened on both platforms.

A 32-bit system has to be built on a 32-bit platform, and a 64-bit system has to be built on a 64-bit platform. Classvolumes though, and the loadfile format, are platform independent.

Mixed runtime environment

There are no restictions in the runtime environment. Systems of different platforms can communicate without problems. If there are some application communication, keep in mind that the alignment of c data structures can differ between the platforms.

Directory volume database changed

The directory volume, previously stored in a BerkeleyDb database, is now stored as a wb_load file. That is $pwrp_db/directory.db is replace by $pwrp_db/directory.wb_load.

Definition of pointer attribute size

For pointer attributes that are not private, the size of the pointed entity has to be stated in the Size element of the $Attribute object defining the attribute.

Including external includefiles in the plc program

The environment variable PWR_EXT_INC can be used to define directories where include files included in the plc program are stored. If you, for example, has a common directory where you

store includefiles that specify transactions, /usr/local/myinclude, the compiler will find these files by defining PWR_EXT_INC with the command

export PWR_EXE_INC="-I /usr/local/myinclude"

Development environment history log

Actions in the development environment are logged in a log-file, $pwrp_db/wb_history.log. The actions that are logged are

– Save in the configurator.

– Save in the plc editor

– Save in Ge.

– Java export in Ge.

– Build of a plc window.

– Build of an XttGraph object.

– Build of a volume.

– Build of a node.

– Create a package.

– Copy a package.

– Update classes in a volume.

Comment

For the save operations, there is a possibility to enter a comment, by setting the Comment checkbox in the Settings dialog the navigator (Options/Settings in the menu). If Comment is set, a comment dialog is opened every time save is activated, and a one line comment can be entered.

It is strongly recommended to enable the comment facility in production systems, and to enter adequate comments. During the development phase though, the value of comments are debatable.

I might also be a good idea to remove or rename the logfile when a system is taken into production, to avoid viewing all the loggings from the development phase.

View the history log

The history log is a text file that can be viewd by a text editor.

There are also a history window that views the logging for specific items. The history window is opened from the menu, or from the popup menu for an object.

- Navigaor menu, File/History, shows configurator save and voume build actions for the current vo lume.

- Plc editor menu, File/History, shows save and build actions for the current plc window.

- Ge editor menu, File/History, shows save, build and export actions for the current graph.

- Distributor menu, File/History, shows create and copy packaged actions for all nodes.

Popupmenu

- PlantHier object, shows plc save actions for all plc windows below the planthier object.

- PlcPgm object, shows plc save actions for all plc windows in the PlcPgm.

- XttGraph object, shows Ge save actions for the graph.

- NodeConfig object, show the build and distribute actions for the node.

- RootVolumeConfig, ClassVolumeConfig, SubVolumeConfig and SharedVolumeConfig objects, shows the configrator save and build acions for the volume.

Xtt commands

set attribute /bypass is obsolete

/bypass qualifier is removed in the 'set attribute' command for security reasons. When used in Ge graphs, it should be replaced by the SetAttribute dynamic.

create opmenuitem

New command to add menu items to the operator window menu.

delete opmenuitem

Command to remove menu items from the operator window menu.

show objectlist

New command that views a listbox with objects of a specified class. From the listbox the object graph for an object can be opened.

wait

Wait a specified time. Used in scripts to retard the execution of the script.

BaseComponents

Alarm handling

The handling of alarm texts in the basecomponent objects is changed. Previously the object name was added to the alarm text in the function object code for the component. Now the event name in the alarm and event window is used instead.

Storage environment

Store all attributes in an object

All the attributes in an object can be stored in one table in the sev database. This is configured with SevHistObject. It also makes to possible to view more than one curve in a curve window.

Table names changed

The names of the tables in the mysql database is changed. When upgradeing, old tables will automatically be renamed by the storage server.

rt_rtt

rt_rtt is included in the storage environment and can be used to monitor the Qcom communication. It should be started with the arguments "qcomonly system". Enter System/Communication/Qcom/Qcom Nodes or Qcom Applications to monitor qcom.

Modbus TCP Server

The Modus TCP server is implemented in V4.7.0, i.e. it is possible for external SCADA systems to fetch data from a Proview system.

The server is configured with a Modbus_TCP_Server object in the node hierarchy, and below this with a Modbus_TCP_ServerModule object. The data area presented to the clients are configured with channel objects below the server module. There is one area for reading and one for writing, and a logical start address to these are set in the module object. Also the UnitId has to be stated.

The server implementation also makes it possible to exchange data between Proview nodes via Modbus TCP.
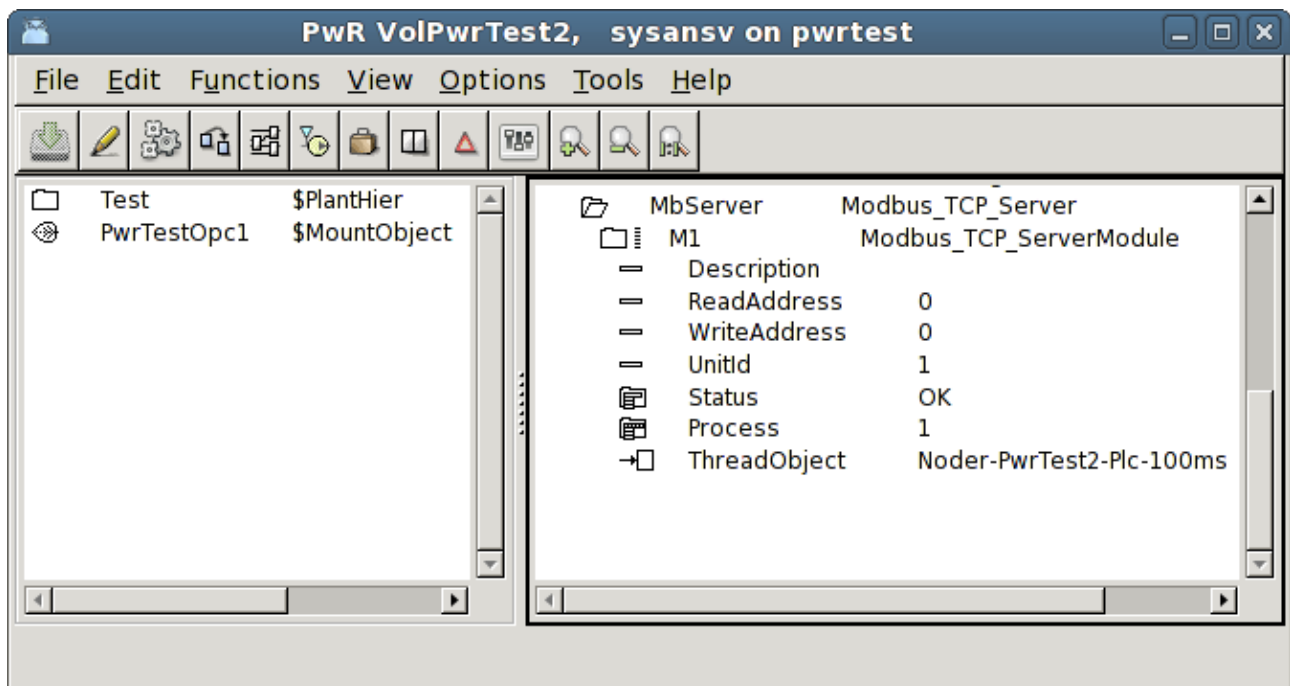
Fig Modbus Server konfiguration
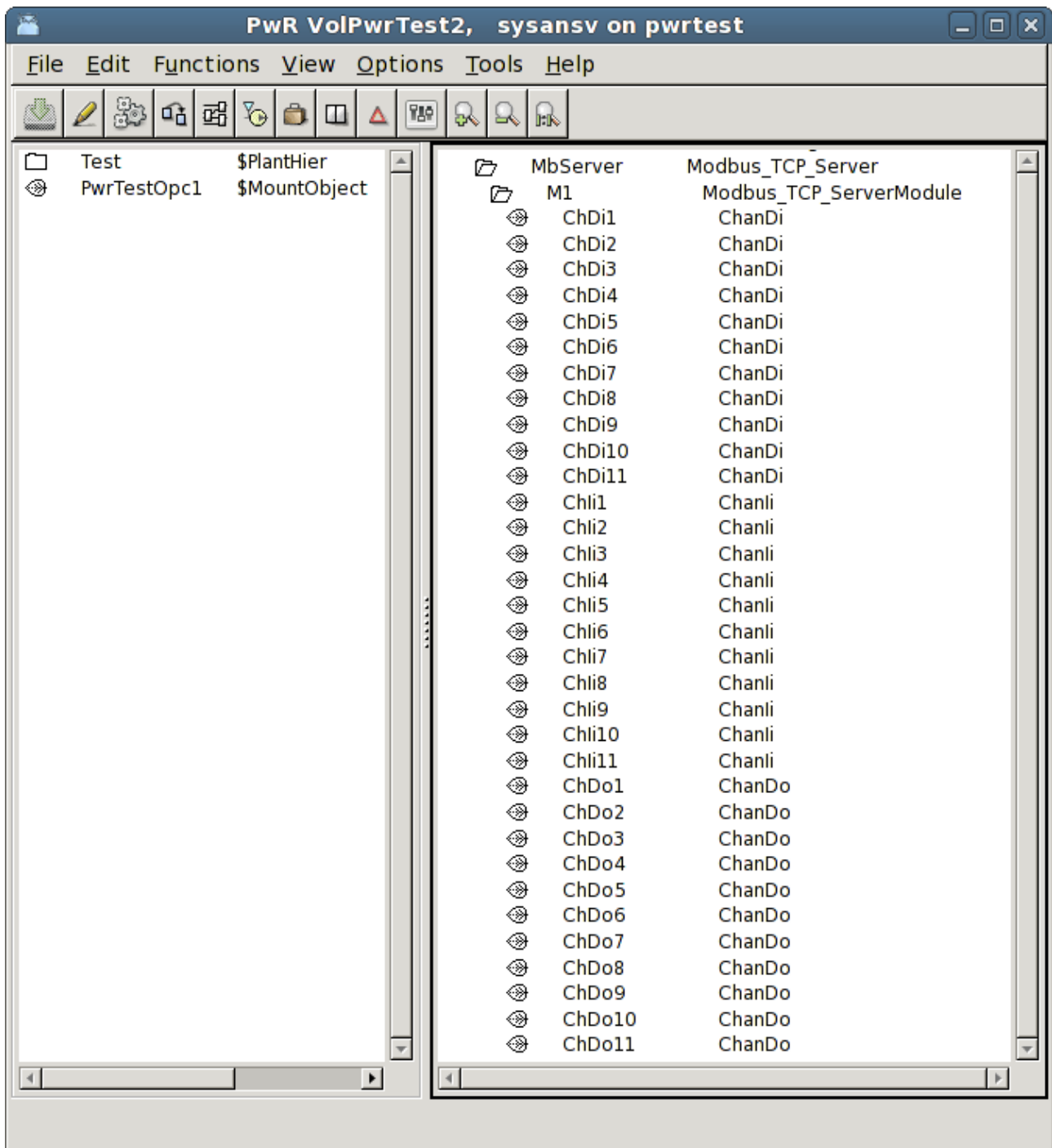
Fig Modbus Server channel konfiguration

Changed Types

pwr_tTime, pwr_tDeltaTime

pwr_tTime and pwr_tDeltaTime are changed from a struct with two 32 bit words, to a struct with two 64 bit words.

Note that pwr_tTime and pwr_tDeltaTime previously was a struct timespec and could be used directly in time functions as clock_gettime, nanosleep etc. This is still the case in 64 bit linux, but not in 32 bit linux. In 32 bit linux there has to be a conversion. Instead of clock_gettime, time_GetTime can be used, which has a pwr_tTime as argument.

New Classes

PnControllerSoftingPNAK

I/O Agent object configuring the Sofing profnet stack.

PnDevice

I/O object configuring a Profinet device.

PnModule

I/O object configuring a Profinet module.

SevHistObject

Store all attribute of an object in the sev database.

LocalTime

Plc function object to convert an absolute time to second, minute, hour, day of week, day of month, month and year.

Modbus_TCP_Server, Modbus_TCP_ServerModule

I/O objects to configure a Modbus TCP server.

Modified Classes

OpPlace

A number of attributes removed removed that was used for the old GMS operator place and not used any more. New attributes added for layout etc. Some attributes moved from the User object, UserName, FastAvail, (Event)SelectList, MaxNoOfAlarms and MaxNoOfEvents.

WebHandler

SelectList, MaxNoOfAlarms and MaxNoOfEvents moved from User object.

NodeLinkSup

Attribute SystemStatus added. It contains the system status of the supervised node.

Attribute MoreText added, for alarmtext info.

DSup, ASup

New attribute LockAttribute. This can be used for ASup and DSup objects in the plc code, where

the 'Attribute' attribute can be set to a specific object, and should not be fetches from the connected object. If LockAttribute is zero, the connected object will be inserted into Attribute when the plc window is compiled.

Mode

The type of attribute OpMode changed from mask to enumeration type (PidOpModeEnum).

Ai, Ao, Av, Co, Di, Do, Dv, Ii, Io, Iv, Po

Attribute Photo added for Xtt popup menu method Photo.

RttConfig

Attributes to replace User object added: MaxNoOfAlarms, MaxNoOfEvents, EventSelectList and EventListEvents.

PlcPgm, WebGraph, XttGraph, Hier and Volume classes

Attribute ConfigurationStatus added. This can be used in the configurator, to set a status on a volume, hierarchy, plcprogram or graph.

CompModeA, D, D2 and D2M

Attribute GraphConfiguration added to handle different graph layout for different configurations.

CompModeAM, CompModeD

Attribute OpDisableLocalAlarm to be able to supress the alarm when local mode is set.

CompModeDFo

Inputs ForceMan and PulseControl added. ForceMan is used to force manual mode, and PulseControl is a special input used by BaseContacor in pulse configuration.

CompModeD2Fo

Input ForceMan added.

CompModePID

Type for attribute OpMod changed from mask to enum (PidOpModeEnum).

BaseActuatorIncrDecrFo

Input ExtControl added.

BaseContactor

Functionality for two order Do for on/off pulse. Do OrderOff added (for off pulse), and attribute OpNoOffPulse for a special configuration.

BaseContactorFo

Attribute PulseControl added to indicate that contactor inconfigured with on/off pulse.

BaseFcPPO3, BaseFcPPO5, ABB_ACS800_1

Attribute AlarmConnection added with alarmtext for new alarm when connection is lost.

BaseFcPPO3Fo, BaseFcPPO5Fo, ABB_ACS800_1Fo

Inputs NoOff2, NoOff3 and EnableOperation added. These inputs affects the contol word and makes it possible to control the stop behavior of the converter.

BaseValveIncrDecrFo

Input ExtControl added.

Modbus_TCP_Slave

Attribute Port added to be able to communicate on another port than the Modbus TCP default port.

ModbusModule

Attribute ScanInterval added to increase the time interval between read and write operations for the module.

Obsolete Classes

User

Not used any more, remains for smooth upgradeing.

Build from sources

New Developer's Guide

A new document with descripton of the Proview source code and build scripts. It is available on proview.se on the Developer page.

pwre database format changed

The format of the pwre database, defined by the environment variable pwr_env_db is changed. A new database has to be created for V4.7.0.

Building runtime and operator environment only

There is a new possibility to build only the runtime environment, or only the operator environment.

See the Developer's Guide for more information.

Upgrade procedure

The upgrading has to be done from any version in the interval V4.2.0 – V4.4.4. 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

The upgrade procedure is to 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
    dirvolume     Load directory volume
    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  directory volopg2

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

```
createboot

Enter start pass [dumpdb] >


-----------------------------------------------------------------------
 Pass dump database
-----------------------------------------------------------------------
Do you want to continue ? [y/n/go] y
ls: cannot access /data0/pwrp/opg2/common/db/*.wb_dmp: No such file or
directory
Dumping volume directory in /data0/pwrp/opg2/common/db/directory.wb_dmp
...
I Database opened /data0/pwrp/opg2/common/db/volopg2.db
ls: cannot access /data0/pwrp/opg2/common/db/*.wb_load: No such file or
directory




-----------------------------------------------------------------------
 Pass create structfiles and loadfiles for classvolumes
-----------------------------------------------------------------------
Do you want to continue ? [y/n/go] n
setdb is obsolete
>
```

Check that the one dumpfile is create for the directory volume and one for every other rootvolume

```
> cd $pwrp_db
> ls -l *.wb_dmp
-rw-rw-r-- 1 cs pwrp 1771 2010-03-26 16:32 directory.wb_dmp
-rw-rw-r-- 1 cs pwrp 7467 2010-03-26 16:32 volopg2.wb_dmp
```

Linux release upgrade

If you are using Ubuntu 9.4 or Fedora 10 you need to upgrade the linux release and install the pwr47 package.

Change version

Enter the administrator and change the version of the project to V4.7.0. Save and close the administrator.

upgrade.sh

Do `sdf` to the project.

upgrade.sh is a script that is divided into a number of passes. After each pass you you have to answere whether to continue with the next pass or not.
Start the script with

```
> upgrade.sh
```

Start from the directorystructure pass by entering *directorystructure* on the question *Enter start pass*. The first pass, dumpdb, is already performed previously by reload.sh.

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

directorystructure

Changes the directory structure for the project with one source and one build tree.

classvolumes

Create loadfiles and structfiles for the class volumes.

renamedb

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

dirvolume

Create a directory database and load the dumpfile for the project volume into the database.

loaddb

Create databases and load the dumpfiles into them.

cnvobjects

Remove User-objects and move the content of FastAvail and SelectList to the corresponding OpPlace or WebHandler object. Replace RttConfig with an OpPlace object named OpDefault.

compile

Compile all the plc programs.

createload

Create loadfiles for the root volumes.

createboot

Create bootfiles for all nodes in the project.

If the project contains any application programs, these has to be built manually.

Delete files from the upgrading procedure:

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

List example

```
>
> sdf opg2
Setting base /data0/x4-7-0/rls
```

```
bash: cd: /data0/pwrp/opg2/src/login: No such file or directory
>
> upgrade.sh

   upgrade.sh  Upgrade from V4.6 to V4.7


   Pass

      dumpdb          Dump database to textfile $pwrp_db/'volume'.wb_dmp
      directorystructure Change directory structure.
      classvolumes    Create loadfiles for classvolumes.
      renamedb        Rename old databases.
      dirvolume       Create directory volume.
      loaddb          Load dumpfiles.
      cnvobjects      Convert objects in the database.
      compile         Compile all plcprograms in the database
      createload      Create new loadfiles.
      createboot      Create bootfiles for all nodes in the project.


-- Upgrade opg2

ls: cannot access /data0/pwrp/opg2/src/db/*.db: No such file or
directory

Enter start pass [dumpdb] > directorystructure

-------------------------------------------------------------------------
Pass change directory structure
-------------------------------------------------------------------------
Do you want to continue ? [y/n/go] y
ls: cannot access /data0/pwrp/opg2/src/db/*.wb_load: No such file or
directory




-------------------------------------------------------------------------
Pass create structfiles and loadfiles for classvolumes
-------------------------------------------------------------------------
Do you want to continue ? [y/n/go] y
ls: cannot access /data0/pwrp/opg2/src/db/*.wb_load: No such file or
directory

-------------------------------------------------------------------------
Pass rename old databases
-------------------------------------------------------------------------
Do you want to continue ? [y/n/go] y
-- Saving file /data0/pwrp/opg2/src/db/directory.db -> /data0/pwrp/opg2/
src/db/directory.db.1
-- Saving file /data0/pwrp/opg2/src/db/volopg.db ->
/data0/pwrp/opg2/src/db/volopg.db.1

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

```
/data0/pwrp/opg2/src/db/directory.wb_dmp  ->
/data0/pwrp/opg2/src/db/directory.wb_load


-------------------------------------------------------------------------
Pass load database
-------------------------------------------------------------------------
Do you want to continue ? [y/n/go] y
-- Loading volume volopg
...
-- Processing line: 57
-- Building volume directory
I Volume directory loaded
I Database opened /data0/pwrp/opg2/src/db/directory.wb_load
-- Processing line: 200
-- Building volume VolOpg
I Volume VolOpg loaded
Berkeley DB 4.6.21: (September 27, 2007)
info put: 0
Berkeley DB 4.6.21: (September 27, 2007)
info get: 0
int rc =  m_txn->abort(): 0


-------------------------------------------------------------------------
Pass convert objects in loaded db
-------------------------------------------------------------------------
Do you want to continue ? [y/n/go] y
...
Berkeley DB 4.6.21: (September 27, 2007)
info get: 0
I Database opened /data0/pwrp/opg2/src/db/volopg.db
Processing Nodes-Opg-Op
Object deleted Nodes-Opg-Op-User
Processing Nodes-Opg-Maintenance
Object deleted Nodes-Opg-Maintenance-User
Processing Nodes-Opg-OpDefault
Object deleted Nodes-Opg-RttConfig-User
Object deleted Nodes-Opg-RttConfig
Processing Nodes-Opg-WebHandler
Object deleted Nodes-Opg-WebHandler-User
%WNAV-E-MSG, Session saved


-------------------------------------------------------------------------
Pass compile plcprograms
-------------------------------------------------------------------------
Do you want to continue ? [y/n/go] y
...
Berkeley DB 4.6.21: (September 27, 2007)
info get: 0
I Database opened /data0/pwrp/opg2/src/db/volopg.db
-- Plc window generated          F1-Z1-Plc-W
-- Plc window compiled for x86_linux optimized -O3 F1-Z1-Plc-W
-- Plc plcpgm compiled for x86_linux optimized -O3 F1-Z1-Plc
-- Plc window generated          F1-Z2-Plc-W
-- Plc window compiled for x86_linux optimized -O3 F1-Z2-Plc-W
-- Plc plcpgm compiled for x86_linux optimized -O3 F1-Z2-Plc


-------------------------------------------------------------------------
```

```
Pass create loadfiles
------------------------------------------------------------------------
Do you want to continue ? [y/n/go] y
-- Removing old loadfiles
rm: cannot remove `/data0/pwrp/opg2/bld/common/load/ld_vol*.dat': No
such file or directory
...
Berkeley DB 4.6.21: (September 27, 2007)
info get: 0
I Database opened /data0/pwrp/opg2/src/db/volopg.db
-- Building archive for volume: 000_001_001_012
-- Archive built for volume: 000_001_001_012

-- Working with load file volume 'VolOpg'...
-- Open file...
-- Successfully created load file for volume 'VolOpg'
-- 26 objects with a total body size of 21976 bytes were written to new
file.

Before this pass you should compile the modules included by ra_plc_user.


------------------------------------------------------------------------
Pass create bootfiles
------------------------------------------------------------------------
Do you want to continue ? [y/n/go] y
-- Creating bootfiles for all nodes

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-- Creating bootfile for node opg
     plc_opg_0507_00011
-- Plc thread generated priority 0, scantime   0.10000 s, 2 plcpgm's
-- Plc process compiled for x86_linux optimized -O3 Dummy
-- Plc program linked for x86_linux  node plc_opg_0507
-- Creating bootfile for node aristotle
     plc_aristotle_0517_00011
-- Plc thread generated priority 0, scantime   0.10000 s, 2 plcpgm's
-- Plc process compiled for x86_linux optimized -O3 Dummy
-- Plc program linked for x86_linux  node plc_aristotle_0517

-- The upgrade procedure is now accomplished.

setdb is obsolete
>
>
```