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About this Quick Start Guide

This guide describes how to build a Proficy iPower implementation for CIMPLICITY. The Readme file that accompanies the software contains release notes, including system requirements. The following figure shows the process flow described in the document.

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Overview

PowerLink™ Connect offers enhancements to PowerLink™ Advantage in functionality, ease of use, performance, data management, equipment control, security, and more. Refer to the PowerLink™ Connect DVD for the Quick Start Guide on how to start your PowerLink™ Connect project.

PowerLink™ Connect is built on Proficy® HMI SCADA CIMPLICITY™ together with the iPower productivity tools for the power market to provide Substation and Energy Monitoring applications.

Installing the Software

Install the following software, referring to the respective installation guides:

1. Install Proficy CIMPLICITY 9.0 R2 from the DVD media.
2. Install Proficy CIMPLICITY 9.0 R2 SIM7 or later from the GE Intelligent Platforms Support website.
3. Install Proficy iPower for CIMPLICITY from the DVD media (selecting the Typical install).
4. Install the Distributed Network Protocol (DNP) driver.
5. Copy the import/export script, Obj_Imp_exp_timed.bcl, from:
   
   C:\Program Files\Proficy\Proficy
   
   CIMPLICITY\projects\CiPowerDemo\scripts

   to:

   C:\Program Files\Proficy\Proficy\Proficy CIMPLICITY\scripts

   (These are the default locations on a 32-bit computer.)

6. If not already installed, install a PDF reader to allow viewing iPower Help files.
7. Restart the computer.
Running the Demo Project

Follow these steps to run the trial system:

1. Start the Proficy iPower for CIMPLICITY demo project as follows:
   a. Click on the Powerlink Connect shortcut from the desktop.
   b. Select and start the CiPowerDemo.gef project in the Select CIMPLICITY Project dialog.
   c. Login when prompted using the following credentials:

   Username: Admin
   Password: admin

2. Review the Proficy iPower for CIMPLICITY demo project.

**NOTE:** The demonstration guide is accessed under Help in the Proficy iPower for CIMPLICITY menu.

Creating a Test Project

A new project (for example, MyProject) can be created by copying either the Proficy iPower for CIMPLICITY demo or template project folder. The Proficy iPower for CIMPLICITY template project has the class definitions but no sample database or screens, and can be found here:

```
C:\Program Files\Proficy\Proficy
CIMPLICITY\projects\iPowerTemplate
```

If a new project is created, update the Proficy for Power SCADA background services in order to find the project as follows:

1. Open the following configuration file:

```
C:\Program Files\Proficy\Proficy
CIMPLICITY\data\ipower.ini
```
2. Add in the new project details:

```
[Project Connection]

ProjectList=CIPOWERDEMO,IPOWERTEST,MYPROJECT
```

Connected projects can also be viewed and edited at the Connection Projects tab, which is accessed through the MOA Manager Configuration dialog.

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### Configuring DNP and IEC 61850 Drivers

**NOTE:** When running under CIMPLICITY, the driver runs as a service and there is no visible tray icon.

The DNP driver option installs the Catapult DNP driver, which supports DNP 3.0 master communications for up to 1,000 slave devices across serial and/or IP channels.

The DNP installer creates shortcuts to the DNP driver and documentation in the Windows Start menu at: All Programs | Proficy | ProficyDrivers | Catapult DNP3.

To configure the DNP driver, follow these steps:

1. Open the DNP3 Help installed, and find the section in the contents that describes DNP configuration steps for CIMPLICITY:

   SCADA configuration | CIMPLICITY Configuration | CIMPLICITY Driver Configuration

2. Follow the steps to add the DNP driver and to configure a port and device.

   Add a DNP port:
Add a DNP device:

Proficy Driver Server IEC 61850 protocol is installed with CIMPLICITY. Follow these steps to configure the IEC 61850 Driver:

1. Access CIMPLICITY Help and go to the following section in the contents:

   Communications Equipment | Native Device Communications | Proficy Driver Server Client

2. Follow the steps to configure the driver.

---

**Configuring Sample DNP Points**

Follow these steps to sample DNP points:

1. After the iPower project has been started, launch the DNP client from the desktop DNP icon (or if DNP Configuration has been enabled in the Project Properties, you can launch the DNP client configuration from that location).
   a. Configure a test channel (port) by referring to DNP Help documentation at:
b. Configure a test device (for example, TestRTU) as described in:
DNP3 driver configuration | Device Configuration | Device Configuration
c. Connect the device to the channel as described in:

DNP3 driver configuration | Configuring Connections

2. In workbench, browse to view points, and select a representative object from the demo project as follows (for example, you might associate a DNP analog point with a feeder current):

a. Select the object (for example, POW_SUB_CB37.AI_AMPSA).

b. Update the device ID details on the General tab.
c. Update the address details on the Address tab.
NOTE: The DNP address syntax is “DeviceName.Obj.Var.Address,” where DeviceName is the name configured in the DNP driver client. For information about addressing, refer to the following topic in the DNP Help:

SCADA Configuration | CIMPLICITY Configuration | Configuring a CIMPLICITY Database Point

3. Browse to view points in workbench, and select a representative object from the demo project. For example, you might associate a DNP digital point with an alarm point.
   a. Select the object, for example, POW_SUB_CB37_DI_ALARM.
   b. Update the device ID on the General tab.
   c. Update the address details on the Input Address tab.
Configuring Sample IEC 61850 Points

Configure the Proficy Driver and IEC 61850 protocol as described in the Proficy Driver Server documentation accessed from the Proficy Driver Server user interface:
1. In the Proficy Driver Server help, refer to “IEC 61850 Protocol” under “Supported Drivers”.

2. As outlined in the help, add an IEC 61850 Device by right-clicking on the Devices node and adding an IEC 61850 device.

3. Configure the appropriate communication properties and data sets in the device and access paths as described in the help.

**NOTE:** If you have connected devices, you can use the Protocol Device scan at the Project level to find communicating devices and automatically set up device representations.
Running the Project

If test RTUs are available, the project can be run to test DNP / IEC 61850 communications. For DNP communication problems, use the Messages Log window in the DNP client for outgoing messages to the device/channel. For remote assistance, enable logging in the DNP driver as set in the client under Server | Options | Log options. Enable all log options, and then send the following file through your support contact:

- *(.DNP configuration file
- Log file

For Proficy Driver Server IEC 61850 communication issues, use the statistics and logging tabs as well as the properties of the pre-defined data blocks (for IEC 61850 datasets) and aliases in the Proficy Driver Server client. These can be accessed either from the CIMPLICITY device dialog or from the Windows Start menu.

CIMPLICITY Help and Proficy iPower for CIMPLICITY Help is available describing the class, object, and screen configuration process through the Proficy iPower for CIMPLICITY menu Help button. Refer to the items under “Configuration Guides.”
Exporting and Importing the Project

Once representative objects are configured, the export and import script can be used for bulk database production. Follow these steps to export:

1. With the project not running, run the script Obj_Imp_exp_timed.bcl.
2. Select Export.
3. Select the project.

The output file contains a single line per entry, containing:

- Class name
- Object name
- Attribute name and Value pairs

The '|' separator is used rather than a comma to reduce possible conflicts in the object descriptions. Additional lines can be added using a text editor such as Notepad.

Follow these steps to import:

1. Run the script Obj_Imp_exp_timed.bcl.
2. Select Import.
3. Select the project.

Existing objects are overwritten so that all changes are applied. New objects are created as required.

Once the import is finished, follow these steps:

1. Restart Workbench.
2. Run the project, and apply configuration changes when prompted.