File tree

```
omronDemo
  py
    omronTcpFins.py
    omronUdpFins.py
    plc2www.py
    www2plc.py
  dataplicity.conf
  firmware.conf
  ui.xml
  valget.ini
  valset.ini
```

dataplicity.conf

```ini
[extend]
conf = /etc/dataplicity/dataplicity.conf

[device]
class = examples.OmronPLC1

[register]
ui = ./ui.xml

[py]
path = ./py

[samplers]
path = /tmp/samplers/

#-------------------------------------
# Tasks
#-------------------------------------
[task:getplcval1]
run = plc2www.Plc2www
poll = 30
data-valgetconfig = valgetsetup1
data-samplername = value1

[task:setval1]
run = www2plc.Www2plc
poll = 15
data-valsetconfig = valsetsetup1

#-------------------------------------
# Create samplers
#-------------------------------------
[sampler:value1]

#-------------------------------------
# Live settings
#-------------------------------------
[settings:valueget]
defaults = ./valget.ini

[settings:valueset]
defaults = ./valset.ini
```

firmware.conf

```ini
[firmware]
version = 2
exclude = *.pyc
          *
          .*
          .hg
          .git
```

valgetsetup1

```ini
[valgetsetup1]
gplcip   = 192.168.100.253
gplcport = 9600
gmemaddr = D512
```

valsetsetup1

```ini
[valsetsetup1]
splcip    = 192.168.100.253
splcport  = 9600
smemaddr  = D512
savevalue = 0.0
```

ui.xml

```xml
<?xml version="1.0" encoding="UTF-8"?>
<ui>
    <interface id="dataplicity">
        <mastertabcontainer title="${device.name}" id="top-tabs">
            <tab title="Omron PLC data">
                <graph title="Memory Value"
                    sampler="value1"
                    min="0"
                    max="100"
                    xunit="Time" yunit="Value"/>
                <form button="Update" title="Set Value">
                    <textedit title="Value to PLC"
                        source      = "device.settings.valueset.valsetsetup1.savevalue"
                        destination = "device.settings.valueset.valsetsetup1.savevalue"
                        type="float" />
                </form>
            </tab>

            <tab title="Setup GET">
                <form button="Update" title="PLC get parameters">
                    <textedit title="PLC IP"
                        source      = "device.settings.valueget.valgetsetup1.gplcip"
                        destination = "device.settings.valueget.valgetsetup1.gplcip"
                        type = "string" />
                    <textedit title="Memory addr"
                        source      = "device.settings.valueget.valgetsetup1.gmemaddr"
                        destination = "device.settings.valueget.valgetsetup1.gmemaddr"
                        type = "string" />
                </form>
            </tab>

            <tab title="Setup SET">
                <form button="Update" title="Plc set parameters">
                    <textedit title="PLC IP"
                        source      = "device.settings.valueset.valsetsetup1.splcip"
                        destination = "device.settings.valueset.valsetsetup1.splcip"
                        type = "string" />
                    <textedit title="Memory addr"
                        source      = "device.settings.valueset.valsetsetup1.smemaddr"
                        destination = "device.settings.valueset.valsetsetup1.smemaddr"
                        type = "string" />
                    <textedit title="Value to PLC"
                        source      = "device.settings.valueset.valsetsetup1.savevalue"
                        destination = "device.settings.valueset.valsetsetup1.savevalue"
                        type="float" />
                </form>
            </tab>
        </mastertabcontainer>
    </interface>
</ui>
```

plc2www.py

```python
from dataplicity.client.task import Task, onsignal

from omronTcpFins import OmronPLC

class Plc2www(Task):
    def pre_startup(self):
        self.sampler = self.conf.get('samplername')
        self.livecfg = self.conf.get('valgetconfig')

    @onsignal('settings_update', 'valueget')
    def on_settings_update(self, name, settings):
        self.plcip   = settings.get(self.livecfg, 'gplcip')
        self.plcport = settings.get_integer(self.livecfg, 'gplcport', 9600)
        self.memadr  = settings.get(self.livecfg, 'gmemaddr', "A3")
        self.log.debug("SettingValue updated: valueget {}".format(self.memadr))

    def poll(self):
        plc = OmronPLC( )
        plc.openFins( self.plcip, self.plcport)
        value = plc.readFloat( self.memadr)
        plc.close()

        self.log.debug( "SAMPLE: {}".format( value)
        self.do_sample(value)

    def do_sample(self, value):
        self.client.sample_now(self.sampler, value)
```

www2plc.py

```python
from dataplicity.client.task import Task, onsignal

from omronTcpFins import OmronPLC

class Www2plc(Task):
    def pre_startup(self):
        self.livecfg = self.conf.get('valsetconfig')

    @onsignal('settings_update', 'valueset')
    def on_settings_update(self, name, settings):
        self.plcip   = settings.get(self.livecfg, 'splcip')
        self.plcport = settings.get_integer(self.livecfg, 'splcport', 9600)
        self.memadr  = settings.get(self.livecfg, 'smemaddr', "A0")
        self.savevalue = settings.get_float(self.livecfg, 'savevalue', 0.0)
        self.log.debug(" SettingValue updated: valueset {}:{}".format(self.memadr, self.savevalue))

        plc = OmronPLC( )
        plc.openFins( self.plcip, self.plcport)
        plc.writeFloat( self.memadr, self.savevalue)
        plc.close()

    def poll(self):
        pass
```
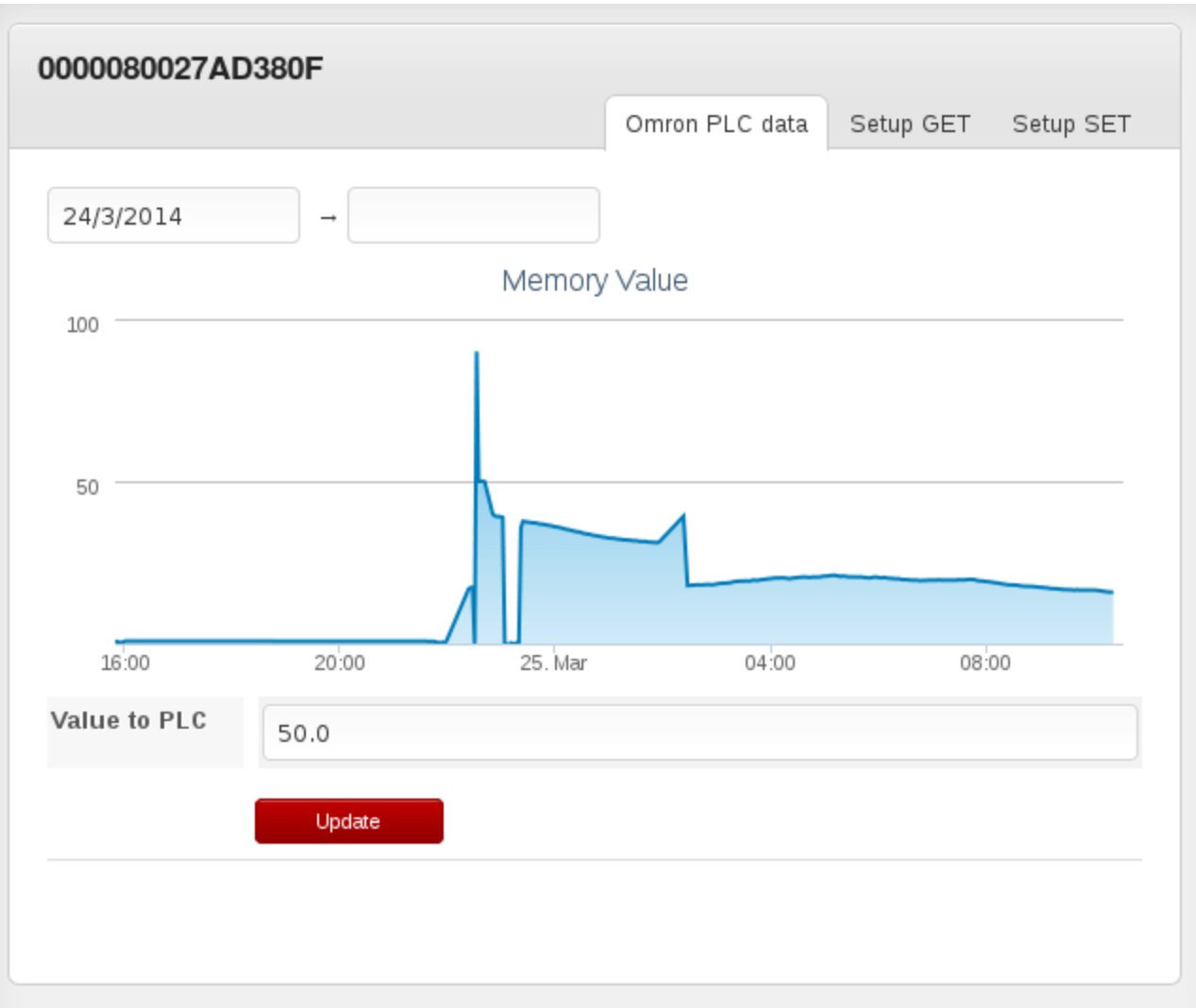
UI mockup — Omron PLC data

0000080027AD380F

Tabs: Omron PLC data | Setup GET | Setup SET

24/3/2014 →

Memory Value

100 · 50

16:00   20:00   25. Mar   04:00   08:00

Value to PLC: 50.0

[Update]

UI mockup — Setup GET

0000080027AD380F

Tabs: Omron PLC data | Setup GET | Setup SET

PLC IP: localhost
Memory addr: D266

[Update]

UI mockup — Setup SET

0000080027AD380F

Tabs: Omron PLC data | Setup GET | Setup SET

PLC IP: localhost
Memory addr: D512
Value to PLC: 50.0

[Update]