

The Cumulocity Connector PLCnext App enables you to connect PLCnext devices from Phoenix Contact with the Cumulocity IoT platform from Software AG. The App is available for free in the PLCnext Store. It is easy to install and to configure, so the device integration can be done within minutes. The internal communication of the App and the PLCnext device is done over the RSC protocol.

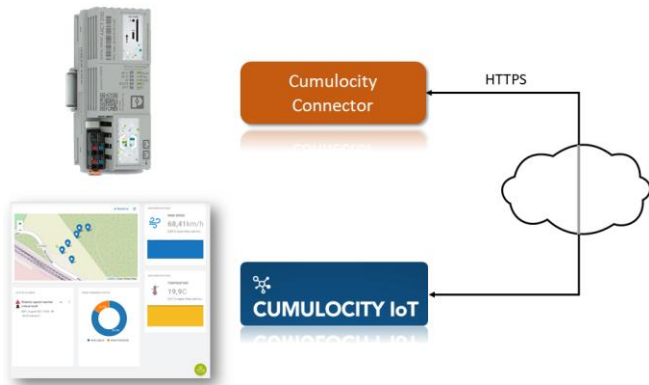


Figure 1: App Concept Overview

After a successful device integration on the Cumulocity platform, the Cumulocity Connector App provides the standardized device management features from the platform, so tracking device information (like hardware model, serial number or version), monitoring the device availability, defining a geographical position, acquiring specific device data or sending control commands is immediately available.

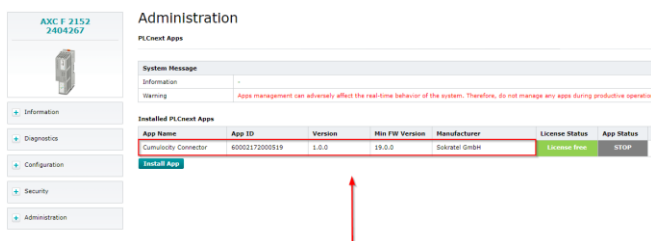


Figure 2: Installed App in Phoenix Web Interface

The device configuration panel on Cumulocity can be used to define the signals - available in the Global Data Space (GDS) of the PLCnext device – which should be transferred to Cumulocity. For doing this the port name of the signal, a transformation mapping and a sample rate must be defined in the JSON configuration file. Over the transformation mapping it can be decided how the GDS signal should be transformed to Cumulocity.

All three standardized device data object types are available: Measurement, Event or Alarm.

```
{
  "mappings": [
    {
      "port": "Arp.Plc.Eclr/SomeCounter",
      "eventMapping": {
        "type": "CounterEvent",
        "text": "Counter value: ${value}, read at: ${time}"
      },
      "overriddenSamplingRate": 60000
    },
    {
      "port": "Arp.Plc.Eclr/CpuTempCritical",
      "alarmMapping": {
        "text": "CPU temperature critical",
        "type": "CPUTemp",
        "severity": "CRITICAL"
      }
    },
    {
      "port": "Arp.Plc.Eclr/CpuLoadCore1",
      "measurementMapping": {
        "unit": "%",
        "type": "CPULoad",
        "fragmentName": "sok_CPULoad",
        "series": "Core1"
      },
      "overriddenSamplingRate": 15000
    }
  ],
  "samplingRate": 10000
}
```

Figure 3: Example Configuration

Configuration changes or updates are processed over Cumulocity operations. So if a configuration change request is not valid (e.g. syntax error) the configuration update will be aborted and the configuration operation will fail. In case of a valid configuration change request the operation will be set to successful after completed execution.

Another operation which is available is the device restart operation and it can be triggered by the restart button available in the Cumulocity device info page. This operation will trigger a whole PLCnext device restart.

An overview over all device related operations can be seen on the Cumulocity device control page. So it is possible to track and identify which operations have been executed in the past.

Links:

<https://sokratel.de/Web/de/produkte/cumulocity-connector-app>

<https://www.plcnextstore.com/permalinks/apps/latest/60002172000519>

<https://www.softwareag.cloud/site/product/cumulocity-iot.html>