# Table of Contents

EUROMAP Device Plugin

The EUROMAP Device Plugin allows reading and writing values from devices implementing the **EUROMAP 63** specification (file-based access):

- Reading values using REPORT commands
- Writing values using SET commands
- Browsing the machine using GETID commands

Note: The EUROMAP 63 specification uses file-based access, so the **session directory** of the machine must be accessible to Codabix for the plugin to work. You will need to add a permission to access this path in the **Access Security** section of the Codabix Project Settings.

Configuration

The whole EUROMAP Device Plugin configuration is located in the node path /System/Devices/EUROMAP Device.
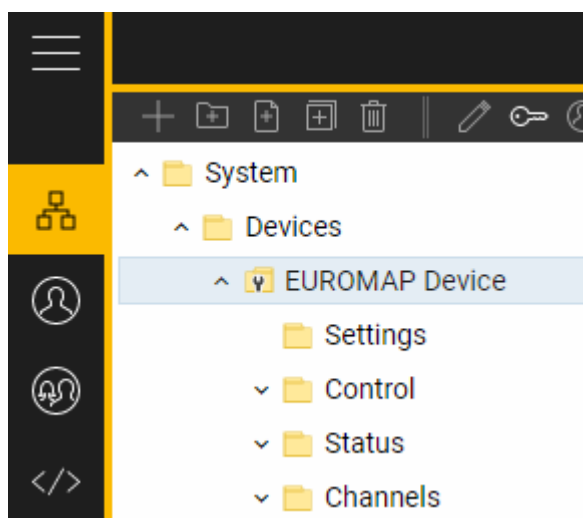
Channel

An EUROMAP Device Channel represents the connection to an EUROMAP machine.

Settings

> **Protocol**
>
> The protocol to use (currently, only EUROMAP 63 is supported).

Session Path

The path to the session directory in the local file system.
Note: To allow Codabix to access this path, you must add a read+write permission in the **Access Security** section of the Codabix Project Settings.

Min Session Number

The lowest session number to use.

Max Session Number

The highest (exclusive) session number to use.

Encoding

Specifies the encoding to use when reading response file from the machine, in order to support characters outside of the ASCII range.

Line Ending

The line ending to be used. (This setting is currently ignored; CR+LF is always used.)

List Delimiter

The list delimiter to be used. (This setting is currently ignored; "," is always used.)

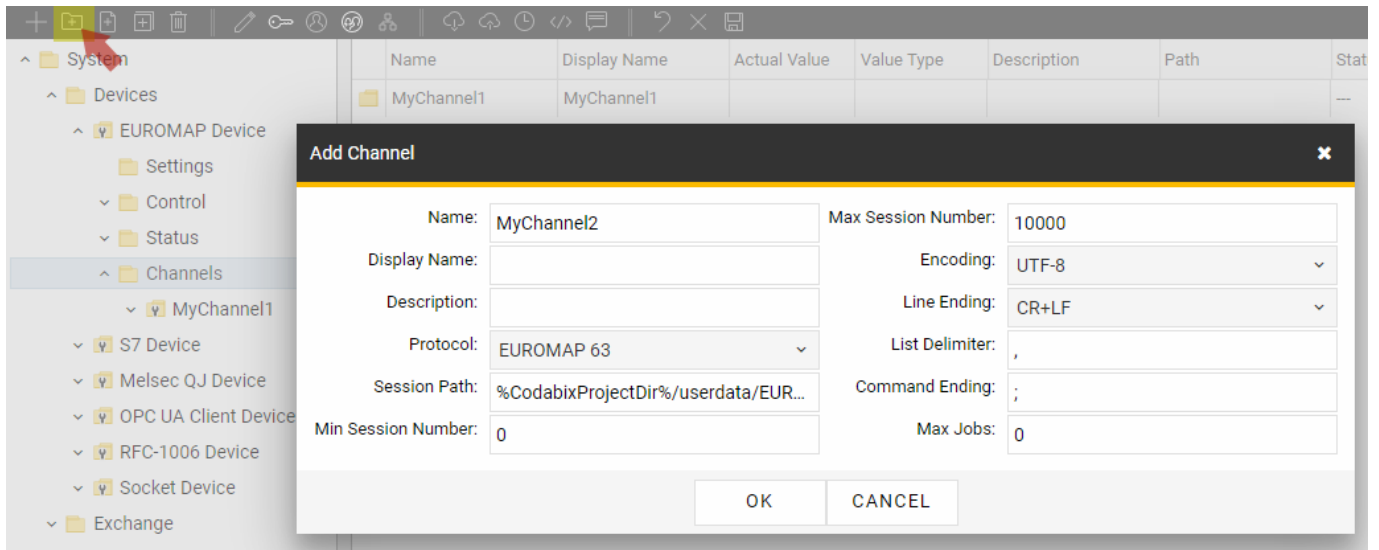**Command Ending**

The command ending to be used. (This setting is currently ignored; ";" is always used.)

Max Jobs

The maximum number of jobs that can be active at the same time. (This setting is currently not used.)

Adding a Channel

To add a new EUROMAP Channel, please follow these steps:

1. Add a Folder Node within the node `EUROMAP Device/Channels`, or right-click on the `EUROMAP Device/Channels` node and select `Add Channel`.
2. In the `Add Channel` dialog, specify the settings for the EUROMAP connection.
3. After clicking on "OK", the channel node is created.
4. You can start the channel by selecting the channel node and clicking the start button.

Parameters

Within the node `Parameters` you can create datapoint nodes which can be read and written from/to the EUROMAP machine as **parameters**.

Supported Node Value Types:

- `String`
- Numeric types like `Int32`, `Double`
- `Boolean`

You can also create folder nodes to group datapoint nodes.

Path

The `Path` property of the node is used to specify the parameter name in the machine.

Browse

You can call the Browse method in order to browse the machine and automatically create the resulting parameters in the `Parameters` node. Browsing is done by executing a `GETID` command.
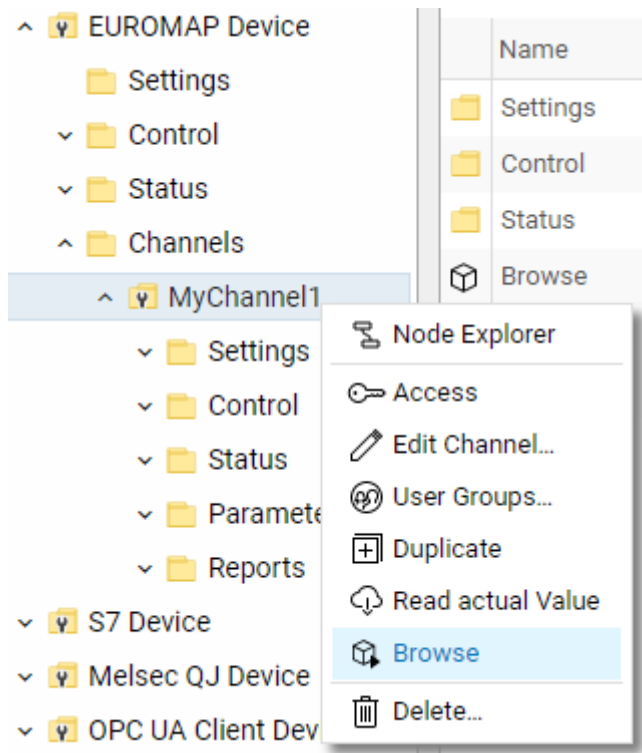
Read/Write

When parameter nodes are read (through a synchronous read or through a subscription), the plugin executes a REPORT command that records a single sample of the parameters and then reads the resulting report file back. The report job file that is executed looks like this:

```
JOB CbxJ-VCT11NK7SJ7 RESPONSE "CBXJQSQI.RSP";
REPORT CbxR-5A2NH4ETRCA "RP3VK4QQ.log" START IMMEDIATE STOP NEVER PARAMETERS
@P1, @P2;
```

When parameter nodes are written, the plugin executes a SET command that sets the parameters to the specified values. The set command that is executed looks like this:

```
JOB CbxJ-LRC9LR6NF9A RESPONSE "CBXJ6RR7.RSP";
SET @P1 "Abcd";
SET @P2 123.45;
```

Diagnostics

The EUROMAP Device Plugin provides different status information depending on the layer to inspect. In general the channel-based diagnostic information is produced by verifying whether access to the specified session directory is allowed. The parameter-based diagnostic information is produced during the read/write access of the different parameters.

Channel

To monitor and diagnose the status of a EUROMAP Channel, take a look at the following image:
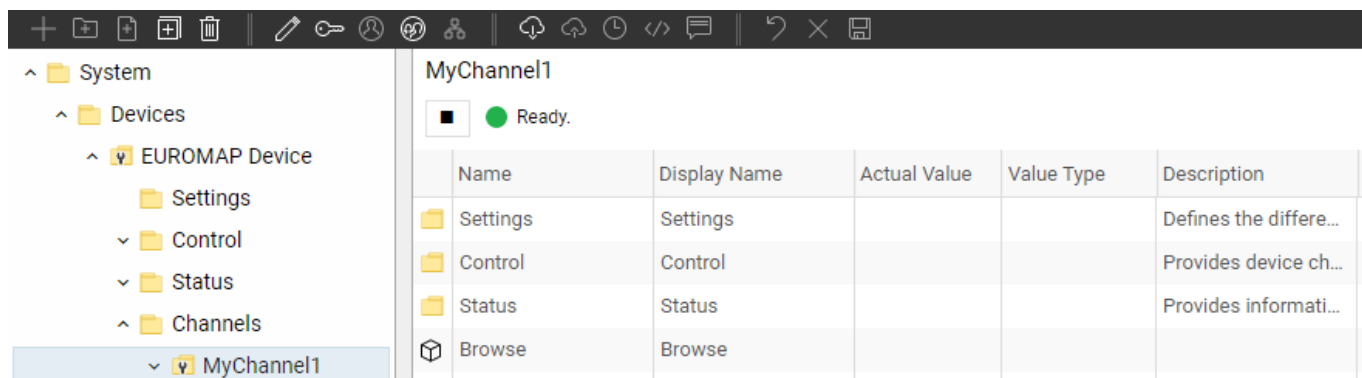
The image above depicts the EUROMAP Channel's Control Panel which displays all status relevant information. The control panel will automatically update its status information when a new status is available.

Status Circle

Color	Meaning
⚪	The channel is stopped. Click the ► button to start it.
🟡	The channel is currently in the progress of starting or stopping or is waiting to establish a connection.
🟢	The channel is ready for doing read/write operations. You can stop it by clicking the ■ button.
🔴	The channel is running, but the connection is currently in an error state. Please check the status text for more information.

Parameters

To monitor and diagnose the status of the different parameters, take a look at the parameter's Status property displayed in Codabix. Use the button "Read actual Value" to read the values from the machine and store the result into the parameters.

Name	Display Name	Actual Value	Value Type	Description	Path	Status
@010X1	@010X1		String		@010X1	Bad: Unable to send an euromap request at session layer: T...
@010X2	@010X2		Double		@010X2	Bad: Unable to send an euromap request at session layer: T...

Log file

All channel related status information is also logged into the channel-specific log file stored in the [LoggingFolder]. Each log file is named in the naming scheme EUROMAP Device.<ChannelName>.log.

The content of such a log file can look as follows:

```
...
2018-04-11 11:32:37.0 +2: [Error] Error (Severity=High): Code=[-1],
Text=[The operation has timed-out.], Details=[]
...
```

Entities

Like every device plugin the EUROMAP Device Plugin extends the basic Codabix [Device Model](#).

Device

The plugin's device type `EuromapDevice` also defines the `EuromapDeviceChannel` and therefore extends the basic `CodabixDevice` and `CodabixDeviceChannel` entities. While the `EuromapDevice` just represents a concretization of the `CodabixDevice`, the `EuromapDeviceChannel` extends the `CodabixDeviceChannel` with the EUROMAP Parameter Entities.

Channel

Each channel is handled by a channel worker which exchanges files with the machine in the session directory, in order to start jobs and read the response files.

By default, the worker does not read any values. When a client or plugin requests a synchronous read of the channel's parameters in Codabix (e.g. using the Codabix Web Configuration's function "Read actual value"), the channel worker reads them from the underlying machine and then writes them into the corresponding Codabix Nodes.

Similarly, when a client or plugin writes values into the channel's parameters, the channel worker will write those values to the underlying machine.

To have an EUROMAP parameter being read steadily, you can edit the Node in the Codabix Web Configuration and set "History Options" to Yes (which will create an internal subscription), or you can use e.g. a OPC UA Client connected to the OPC UA Server plugin and create a subscription for the EUROMAP parameter nodes. In these cases, the channel worker reads the parameters from the machine at a regular interval and, if the value of one of the parameters has changed, writes the new value into the corresponding Codabix Node.

Folders & Files

Folders

Content	Path	Usage
AssemblyFolder	`<CodabixInstallDir>/plugins/EuromapDevicePlugin/`	Contains the plugin's assembly file.
ConfigFolder	`<CodabixProjectDir>/plugins/EuromapDevicePlugin/`	Contains the plugin's configuration file.
LoggingFolder	`<CodabixProjectDir>/log/`	Contains the plugin's log files.

Files

Type	Path	Usage
Assembly	[AssemblyFolder]/CoDaBix.EuromapDevicePlugin.dll	The plugin's assembly file.
Logging	[LoggingFolder]/EUROMAP Device.<ChannelName>.log	The log file.

About Versions

This Document

Date	2020-12-04
Version	1.0

Plugin

Name	EUROMAP Device Plugin
Node	/System/Devices/EUROMAP Device
Version	1.0.0

Assembly

Name	CoDaBix.EuromapDevicePlugin.dll
Date	2020-12-04
Version	1.0.0.0

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