PAUL SCHERRER INSTITUT

PSI

Matlab Channel Access

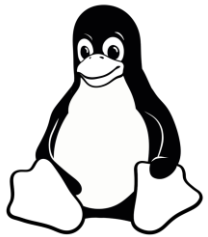
https://github.com/
channelaccess/ca_matlab

Outline

- Key Features
- Documentation
- Getting Started
- Commands
- Examples / Blueprints
- Issues / Contribute / Feedback

Key Features

- No prerequisites other than **Matlab 2015**
- Drag and drop deployment of the library
- Supported Platforms



Documentation

https://github.com/channelaccess/ca_matlab

https://github.com/
channelaccess/ca_matlab

Getting Started - Basics

- Context
  - Used to create channels
- Channel
  - Class/Object representing a Channel Access channel (connection)
- Future
  - Handle for a result that will be available in the future
  - For asynchronous operations

- Channels
  - Utility class to facilitate various (non standard Channel Access) operations

Getting Started

1. Download Library
   https://github.com/channelaccess/ca_matlab/releases
1. Import
   ```
   javaaddpath('ca_matlab-1.0.0.jar')
   ```
1. Use
   ```
   import ch.psi.jcae.*
   context = Context();
   channel = Channels.create(context, ChannelDescriptor('double', 'ARIDI-
   PCT:CURRENT'));
   channel.get()
   channel.close();
   context.close();
   ```

Commands

Specify context properties

```
properties = java.util.Properties();
properties.setProperty('EPICS_CA_ADDR_LIST', 'sls-cagw');
properties.setProperty('EPICS_CA_SERVER_PORT', '5062');


context = Context(properties);
```

Commands

Create Channels

```
channel = Channels.create(context, ChannelDescriptor('double', 'ARIDI-PCT:CURRENT'));

channel = Channels.create(context, ChannelDescriptor('double', 'ARIDI-PCT:CURRENT', true));

channel = Channels.create(context, ChannelDescriptor('double[]', 'ARIDI-PCT:CURRENT', true));

channel = Channels.create(context, ChannelDescriptor('double[]', 'ARIDI-PCT:CURRENT', true, java.lang.Integer(10)));
```

Commands

Supported Types

`double, integer, short, float, byte, boolean, string, double[], integer[], int[], short[], float[], byte[], boolean[], string[]`

Commands

Get Values

```
value = channel.get();
```

Set Values

```
channel.put(10.0);
channel.putNoWait(10.0);
```

Commands

Get Values (Asynchronous)

```
future = channel.getAsync();
// … do something
value = future.get();
```

Set Values (Asynchronous)

```
future = channel.putAsync(10.0);
// … do something
future.get();
```

Commands

Wait for Value

```
Channels.waitForValue(channel, 'world');
```

Wait for Value (Asynchronous)

```
future = Channels.waitForValueAsync(channel, 'world');
// … do something
future.get();
```

Commands

Asynchronous Commands

```
future.get()
future.get(java.lang.Long(10), java.util.concurrent.TimeUnit.SECONDS)
future.isDone()
```

Busy Loop

```
future = Channels.waitForValueAsync(channel, 'world');
while not(future.isDone())
    % do something
end
```

More Stuff …

https://github.com/channelaccess/ca_matlab

https://github.com/
channelaccess/ca_matlab

Examples / Blueprints

https://github.com/channelaccess/ca_matlab/tree/master/examples

Issues / Contribute / Feedback

- Issues / Bugs: https://github.com/channelaccess/ca_matlab/issues
- General feedback, useful code snippets, examples : simon.ebner@psi.ch

PAUL SCHERRER INSTITUT

PSI

Details

https://github.com/
channelaccess/ca_matlab

Contact

Simon Ebner
Paul Scherrer Institute
WBGB/001
5232 Villigen PSI

simon.ebner@psi.ch

PAUL SCHERRER INSTITUT

PSI

Questions ?

Colors