

Tutorial: Howto implement a [ROS](#) Topic subscriber message handler in the Happy Artist RMDMIA:

In this tutorial we teach Java programmers to implement a subscriber message handler for a [ROS](#) Topic.

System Requirements:

- ROS
- ROS Turtlesim (Configuration instructions)
- Java 1.6 or greater
- ****RMDMIA vpr1_v7 slipstream or greater**

Prerequisites:

- [RMDMIA Client Configuration for ROS Turtlesim Tutorial](#)

Overview:

This tutorial explains how to implement a subscriber message handler to a ROS Topic with the Happy Artist RMDMIA. The ROS Turtlesim is used in this example to demonstrate topic subscription implementation.

The following code demonstrates how to implement a Java custom message handler on a subscription topic:

`<code>`

```
package my.example;
```

```
import
```

```
org.happy.artist.rmdmia.rcsm.providers.ros.client.transport.AbstractSubscriberMessageHandler;
```

```

public class ConsoleWriterMessageHandler extends AbstractSubscriberMessageHandler
{
    // Define the ROS Message Decoder to read byte[] to String
    ROSMessageDecoder decode = new ROSMessageDecoder();

    // Implement the process methods for incoming data
    public void process(byte[] message, int dataLength)
    {
        System.out.println("Hex Message (single-block): " +
org.happy.artist.rmdmia.utilities.BytesToHex.bytesToHex(message));
        System.out.println("Hex to Text Message (single-block): " +
decode.convertHexToString(org.happy.artist.rmdmia.utilities.BytesToHex.bytesToHex(messag
e).toCharArray()));
    }

    // Implement the process methods for incoming data
    public void process(byte[] message)
    {
        System.out.println("Hex Message (multi-block): " +
org.happy.artist.rmdmia.utilities.BytesToHex.bytesToHex(message));
        System.out.println("Hex to Text Message (multi-block): " +
decode.convertHexToString(org.happy.artist.rmdmia.utilities.BytesToHex.bytesToHex(messag
e).toCharArray()));
    }
}
</code>

```

To test the above class:

1. compile, and add the generated ConsoleWriterMessageHandler package structure

with a class file to a jar file.

2. Copy the Jar to the RMDMIA plugins/rcsm directory.
3. Update the MessageHandler class for the associated topic in the ROS Configuration Manager, and save/exit. Try the /rosout_agg topic for log messages.

RMDMIA - ROS Configuration Manager Preview Release 1

r URI:

KEY	SIZE	MessageHandler Class	M
		org.happy.artist.rmdmia.rcsm.providers.ros.client.transport.DefaultMessageHandler	org.happ
		org.happy.artist.rmdmia.rcsm.providers.ros.client.transport.DefaultMessageHandler	org.happ
		org.happy.artist.rmdmia.rcsm.providers.ros.client.transport.DefaultMessageHandler	org.happ
		my.example.ConsoleWriterMessageHandler	org.happ
		org.happy.artist.rmdmia.rcsm.providers.ros.client.transport.DefaultMessageHandler	org.happ
		org.happy.artist.rmdmia.rcsm.providers.ros.client.transport.DefaultServiceMessageHa...	org.happ
		org.happy.artist.rmdmia.rcsm.providers.ros.client.transport.DefaultServiceMessageHa...	org.happ
		org.happy.artist.rmdmia.rcsm.providers.ros.client.transport.DefaultServiceMessageHa...	org.happ
		org.happy.artist.rmdmia.rcsm.providers.ros.client.transport.DefaultServiceMessageHa...	org.happ
		org.happy.artist.rmdmia.rcsm.providers.ros.client.transport.DefaultServiceMessageHa...	org.happ
		org.happy.artist.rmdmia.rcsm.providers.ros.client.transport.DefaultServiceMessageHa...	org.happ

4. Launch the RMDMIA, and the new message handler will load.