

## Library setup and controller configuration manual

STÄUBLI Robotics Library

### Setup overview

The setup procedure for DigiMetrix Robotics Library for Staubli consists of the following steps:

1. Checking system requirements
2. Installing DigiMetrix Robotics Library for Staubli
3. Configuring robot controller and LabVIEW computer Ethernet connection
5. Running the Controller Setup Wizard
6. Restarting the controller

### Precaution

Please carefully read the Safety and Installation manual provided by the manufacturer and other related manuals dedicated to the installation and setup procedures for the robot system before using it with this library.

Following manual assumes that qualified personnel performed all the installation procedures for the robot system.

### Checking system requirements

Please verify the following system requirements.

#### STÄUBLI system requirements

- Staubli controller CS8, CS8C, CS9 with VAL 3 version 7.9 or later (request free VAL3 update from Staubli if needed)  
You can check VAL3 version on MCP. *CS9: Robot -> Informations -> System*  
*CS8: Control Panel -> Controller Configuration -> Versions -> System*

#### LabVIEW system requirements

- LabVIEW 2012 or above (32 & 64 bit)
- Ethernet card and Ethernet cable
- Microsoft Windows XP, Vista, 7, 8, 8.1, 10 (32 & 64 bit) or LabVIEW Real-Time operating system

### Installing DigiMetrix Robotics Library for Staubli

#### The library installation

Please use VI Package Manager 2014 or later in order to install the library.

1. Open JKI VI Package Manager from your Desktop or using LabVIEW menu Tools -> VI Package Manager
2. Select **Staubli Robotics Library by DigiMetrix** product in the list or open .vip file using top menu command File -> Open Package File(s).
3. Read the library **description**, select your LabVIEW **version** and click **Install** button
4. Follow the on-screen instructions
5. If a message "This package requires administrative privileges to install..." will appear, you will need to restart VI Package Manager **as Administrator**.
6. After installation is completed, **restart LabVIEW**.

### Configuring robot controller and LabVIEW computer Ethernet connection

STÄUBLI robotics library uses UDP/IP communication protocol, robot controller and LabVIEW computer should have appropriate Ethernet connection settings for your network configuration.

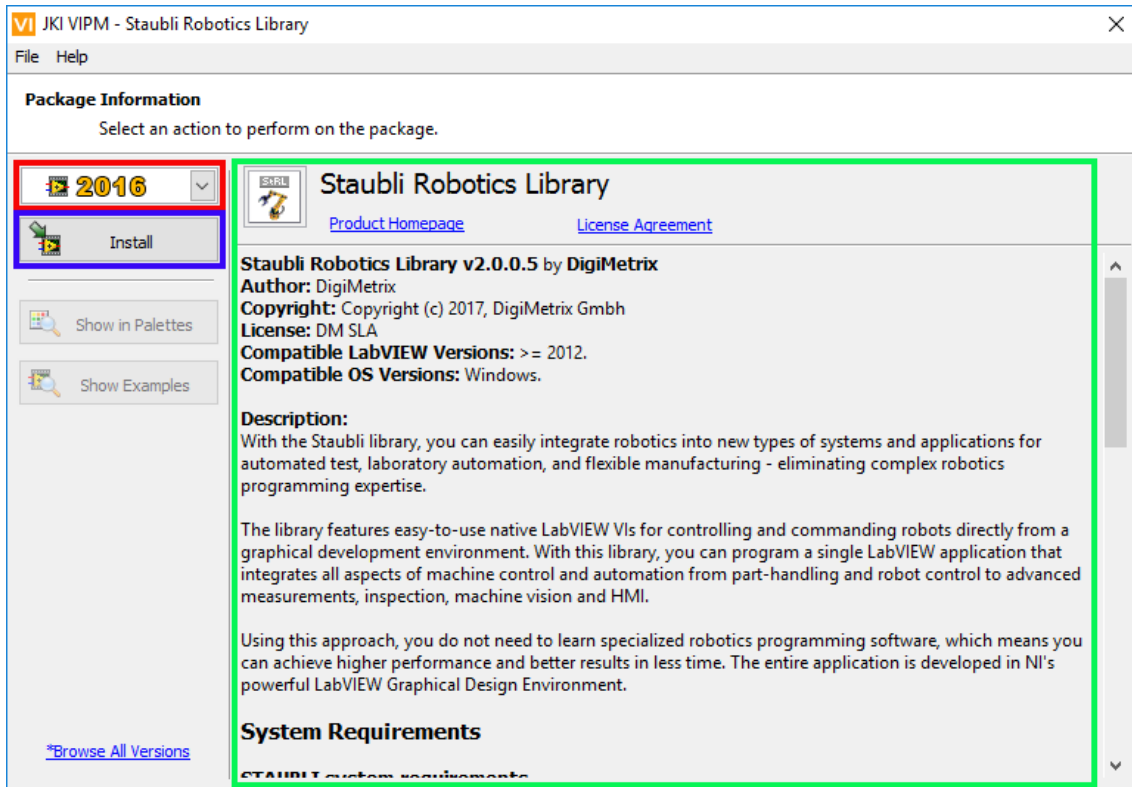


Figure 1. Screenshot of library installation in VI Package manager

Example on images below shows possible Ethernet settings using static addresses. For this configuration Ethernet cable should connect robot controller and computer network card directly or using a switch. To set up dynamic address acquisition from DHCP server, please refer to your controller documentation.

Robot controller example IP settings (any of two controller Ethernet ports can be used):

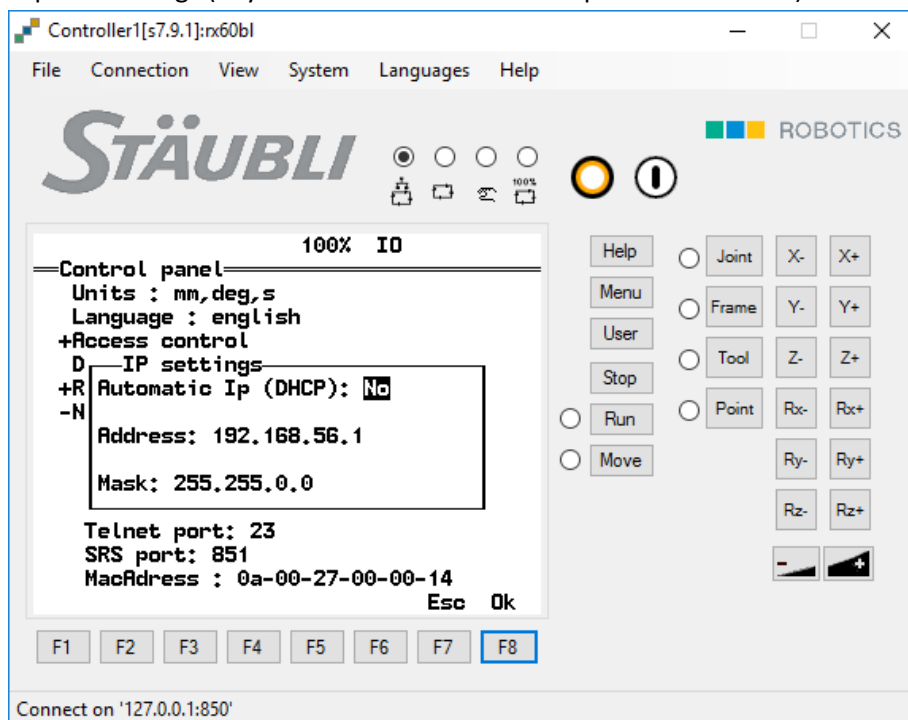


Figure 2. Stäubli controller ethernet settings example

LabVIEW computer example IP settings:

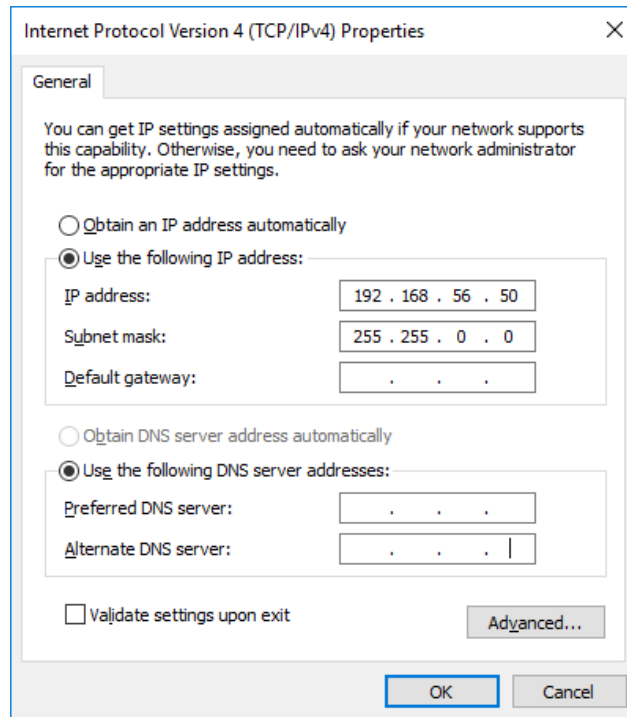


Figure 3. LabVIEW computer ethernet settings example.

As the result of this configuration step you should be able to ping the controller using the address you have assigned.

## Running the Controller Setup Wizard

After the installation and LabVIEW restart please run Controller Setup Wizard and follow the on-screen instructions.

It will do the following:

- Upload server application files on the Robot controller
- Configure UDP ports
- Configure server to auto-start at controller boot

Controller Setup Wizard can be found at:

*<Public Program Data>\DigiMetrix\Staubli Robotics Library\Controller Setup Wizard*

On Windows 8.1 (64-bit) this folder is located in:

*C:\ProgramData\DigiMetrix\Staubli Robotics Library\Controller Setup Wizard*

You can easily open wizard by using this command:

*LabVIEW Tools menu -> DigiMetrix -> Staubli Robotics Library -> Controller Setup Wizard..*

LabVIEW computer or Real-Time target (device which communicates with robot) IP address should be specified in Controller Setup Wizard UI. If you will need to change that address at any point later, just re-run the wizard and specify a new one there. This can also be a broadcast address (like 192.168.255.255) to allow controller to communicate with any device in the subnet. But please note, that all devices in the subnet will be receiving broadcast datagrams from the controller. Also, for security reasons, only one device can control robot at a time. When sender changes, robot will stop and flush motion commands buffer.

## Restarting the controller

After the steps above please restart the controller, you should see the messages on MCP screen like on the screenshot below:

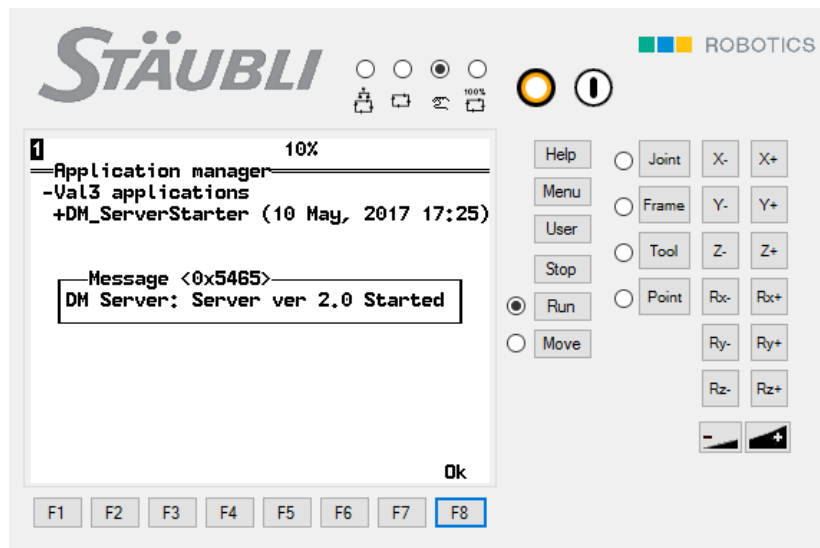


Figure 4. DigiMetrix server start-up message on CS8 MCP screen.



Figure 5. . DigiMetrix server start-up message on CS9 MCP screen.

## Next steps

Now your robot controller is configured. We suggest you start with library examples. Please refer to the Getting Started help topic.

Should you have any questions or comments, please do not hesitate to contact us at [support@digimetrix.com](mailto:support@digimetrix.com).