M2S Archiver User Guide

Changelog

Rev	Author	Changes
1	Erdem Keskin	first revision

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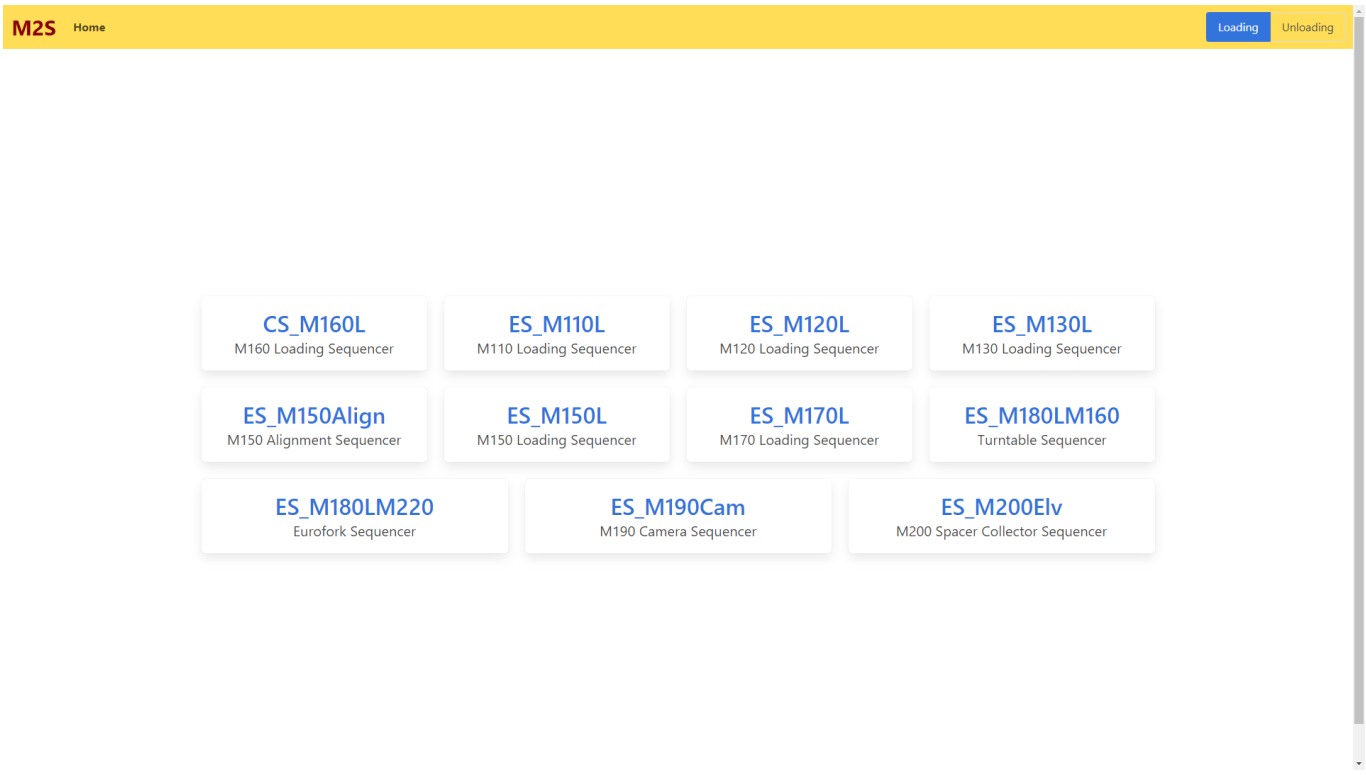
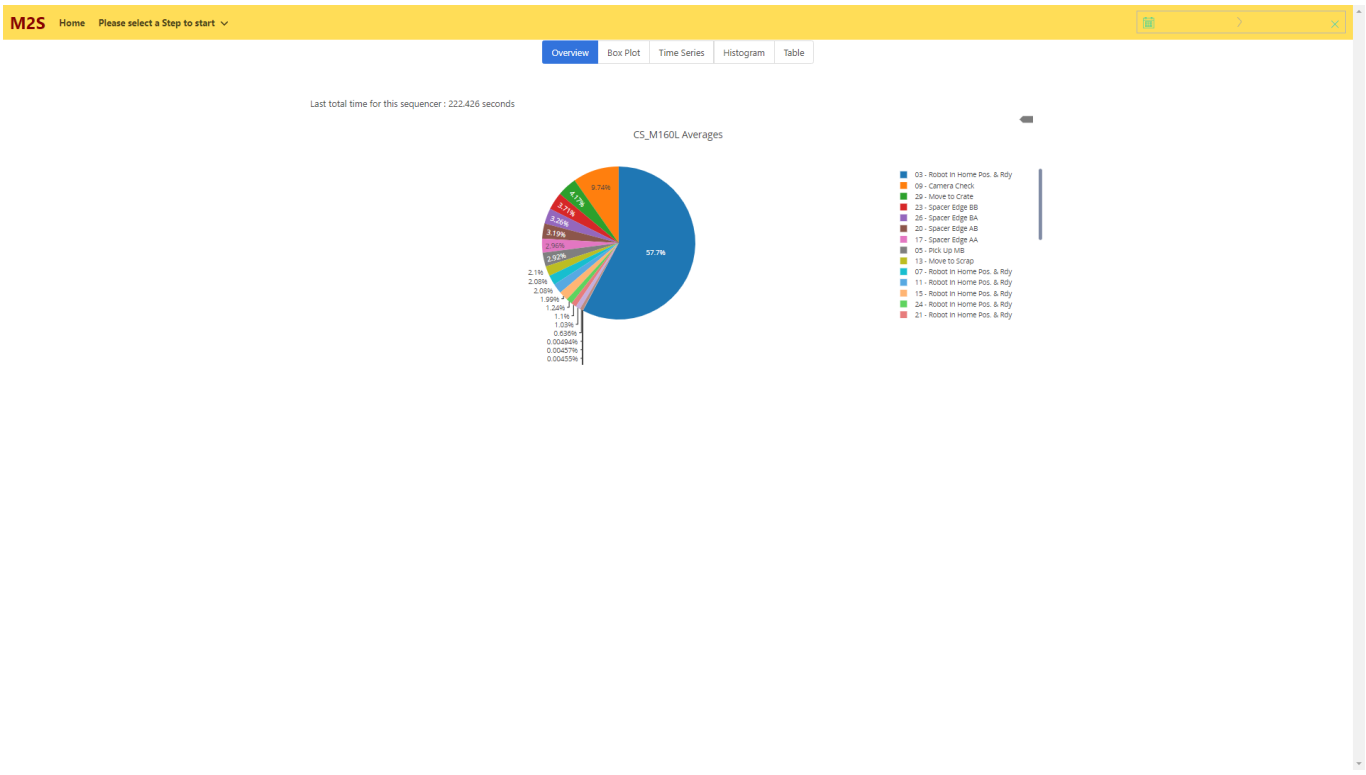
Main Screen



Main screen consists of 2 pieces. Yellow Navbar on top and the cards for the sequencers with the data. The user can change the function they want to investigate on the top right of the Navbar, titled Loading and Unloading to match functions of the M2S line. Making the function selection will load the appropriate sequencers for selected function in the cards. Clicking the any of the cards will load a new page containing step information about the selected sequencer.

Sequencer Details



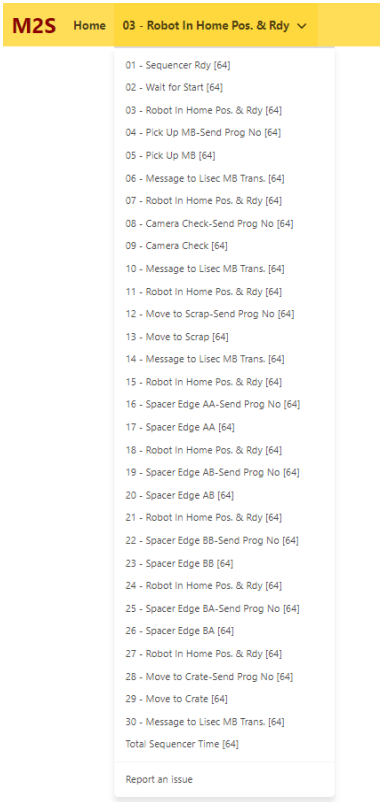
In the sequencer details screen, there are 5 tabs.

1. Overview
2. Box Plot
3. Time Series
4. Histogram
5. Table

Other then these tabs, there is a dropdown that let you select which step you want to investigate and, a date/time filter for filtering down the values. Also can be accesed by directly navigating to `/details/{sequencer_name}`.

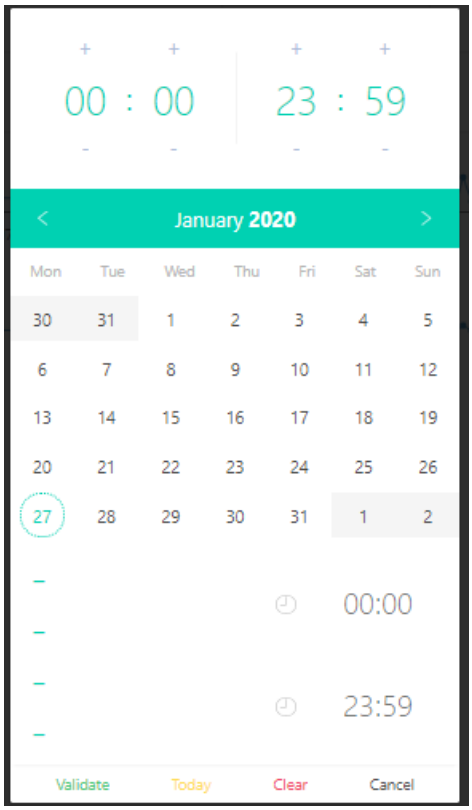
Navbar

Navbar consist of a dropdown to select a step to investigate, a date time filter, and a Home button to go back Main Screen. User should select a step from the dropdown to view appropriate data.



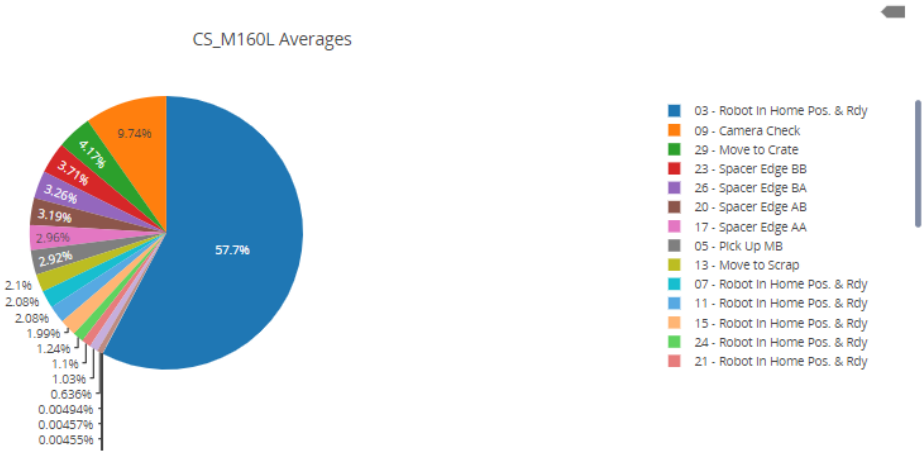
Date Filter

Date Filter can be accessed on the rightmost side of the navbar. It will let you choose 2 dates, earlier as start and later as end. Doing so will filter down the data to be shown to requested range.



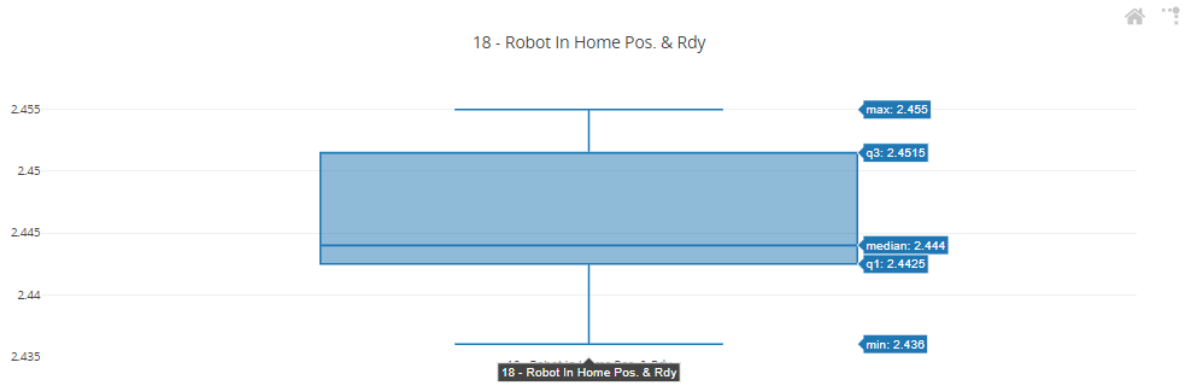
Overview

When you first open up the sequencer details page, Overview of that sequencer will be loaded. This page contains a pie-chart indicating which steps of that sequencer took how much of the sequencers full cycle on average. This information may help you to understand which step tooks much time related to others.



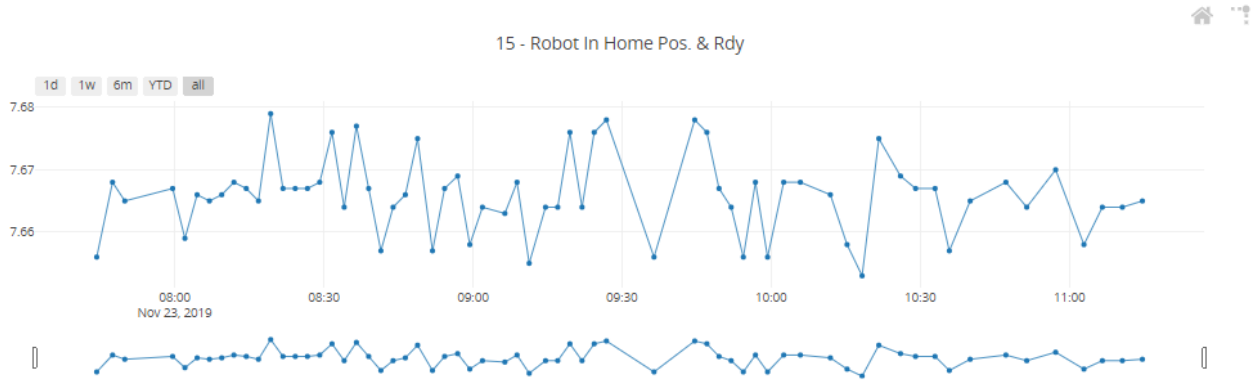
Box Plot

After the step selected from the Step selection dropbox, the data for this page will be loaded. User can investigate the data in a Box Plot. This helps to understand, if there are any outliers in the given range, or any anomalies occured. As you can see from the example down below, given step works in fairly consistent manner and shouldn't be a root cause to any issues.



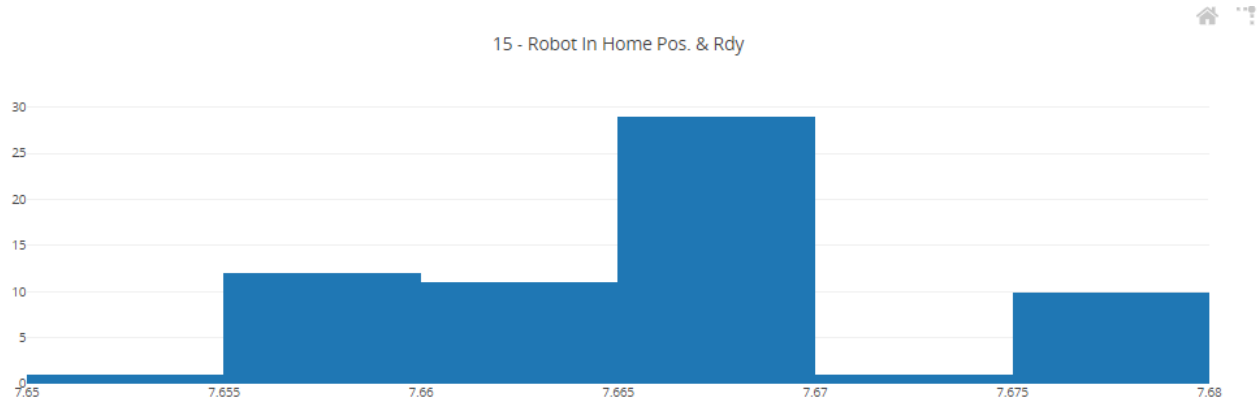
Time Series

After the step selected from the Step selection dropbox, the data for this page will be loaded. User can investigate the data in a TimeSeries. Data will be laid out in relation to time. As you can see down below, even if data looks like it is fluctated much, the differences are around 0.02 second range. Hovering any value, will show a hovered value with time for you to investigate further.



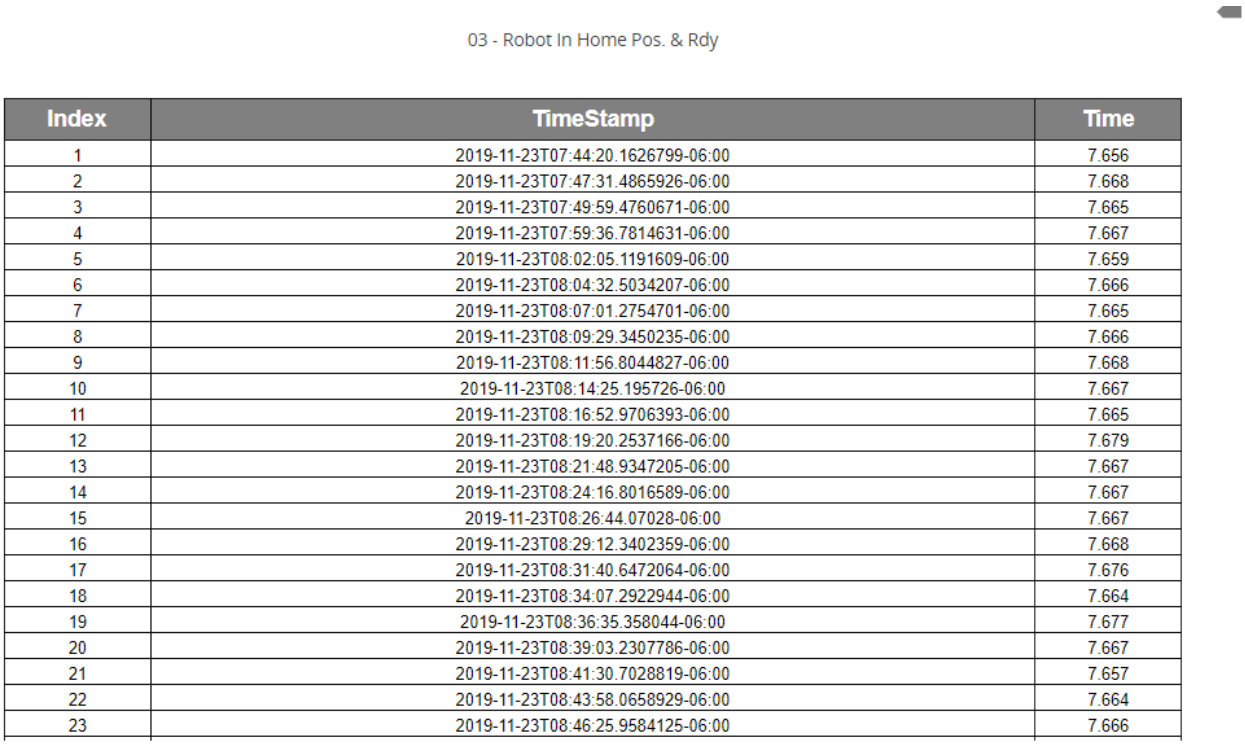
Histogram

After the step selected from the Step selection dropbox, the data for this page will be loaded. User can investigate the data in a Histogram. Data will be grouped in seconds. That way user can easly discover any outlier groupings. Example down below is farily normal distributed.



Table

After the step selected from the Step selection dropbox, the data for this page will be loaded. User can investigate the data in a normal Table. In case user wants to see data in raw form.



03 - Robot In Home Pos. & Rdy

Index	TimeStamp	Time
1	2019-11-23T07:44:20.1626799-06:00	7.656
2	2019-11-23T07:47:31.4865926-06:00	7.668
3	2019-11-23T07:49:59.4760671-06:00	7.665
4	2019-11-23T07:59:36.7814631-06:00	7.667
5	2019-11-23T08:02:05.1191609-06:00	7.659
6	2019-11-23T08:04:32.5034207-06:00	7.666
7	2019-11-23T08:07:01.2754701-06:00	7.665
8	2019-11-23T08:09:29.3450235-06:00	7.666
9	2019-11-23T08:11:56.8044827-06:00	7.668
10	2019-11-23T08:14:25.195726-06:00	7.667
11	2019-11-23T08:16:52.9706393-06:00	7.665
12	2019-11-23T08:19:20.2537166-06:00	7.679
13	2019-11-23T08:21:48.9347205-06:00	7.667
14	2019-11-23T08:24:16.8016589-06:00	7.667
15	2019-11-23T08:26:44.07028-06:00	7.667
16	2019-11-23T08:29:12.3402359-06:00	7.668
17	2019-11-23T08:31:40.6472064-06:00	7.676
18	2019-11-23T08:34:07.2922944-06:00	7.664
19	2019-11-23T08:36:35.358044-06:00	7.677
20	2019-11-23T08:39:03.2307786-06:00	7.667
21	2019-11-23T08:41:30.7028819-06:00	7.657
22	2019-11-23T08:43:58.0658929-06:00	7.664
23	2019-11-23T08:46:25.9584125-06:00	7.666

Lite

There is a endpoint on `/lite/{sequencer_name}/{step_no}` for each step of the each sequencer recored. Navigating to that page, will render an image containing `last 7 days` of the data for given sequencers step. This is used to show recorded data on FactoryTalk ME Clients by using Web Page widget.

Configuration

The behaviour of the application can be altered by editing the configuration file contained with the executable of the application. It is in TOML format. And contains 4 headings for configuration.

PLC

Connection parameters to connect the PLC. Parameters are as follows:

1. `Address`: IP address of the PLC or Ethernet module
2. `Port`: Ethernet/IP communication port, this is defaults to 44818 on all Rockwell PLCs.
3. `Delay`: Polling time for each sequencer thread in milliseconds. Defaults to 10.
4. `Slot`: Physical slot of the CPU on the PLC rack. Defaults to 0.

Sequencers

Sequencers to watch for changes. By default all of the sequencers are added here. If user wants to remove any of them, just prefixing the lines with `#` is enough. Parameters are as follows:

1. `Name`: Descriptive name of the sequencer. This will show up on the Main page as a sub heading to sequencer tag.
2. `Tag`: PLC tag of the sequencer. The application will attempt to read values from this tag.
3. `Enable_Tag`: Application will record the values for this sequencer only if this variable on the PLC is set to `1` or `true`.
4. `Mode`: Just for front-end. Seqencers will be grouped depending on this value. Possible values are:
    1. Loading
    2. Unloading
    3. Both

Storage

Settings related to local BoltDB file.

1. `Name`: File name of the database file which will be created or appended if exists.

Web

Settings related to web server. Changing these may reqiure restarting the application.

1. `Port`: Which port the interface will be served.