

Release 3 | Power Architecture and Analysis

May 2019

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Release Summary

Release 3 focuses on improving the user experience and workflow for Architecture Overview and Power Analysis. Additionally, many of the computational resources for sizing buses were updated for the Kinetix products that require shunts, capacitors, and/or power supplies. Products impacted by this release include the Kinetix 300, 350, 5500, 5700, 6000, 6200, 6500, and 7000.

The Architecture Overview was updated to accommodate drive architecture for Kinetix drive systems with regards to buses and power requirement definitions. Furthermore, the Power Analysis workflow and user experience was updated to provide more design data and faster power computations.

Lastly, the Kinetix product line introduced new regenerative power supplies and large frame inverters. The part numbers for these products are listed below and additional product detail can be found on the Motion Control section of the Rockwell Automation corporate page - [Kinetix Integrated Motion on EtherNet/IP Servo Drives](#).

Architecture Overview

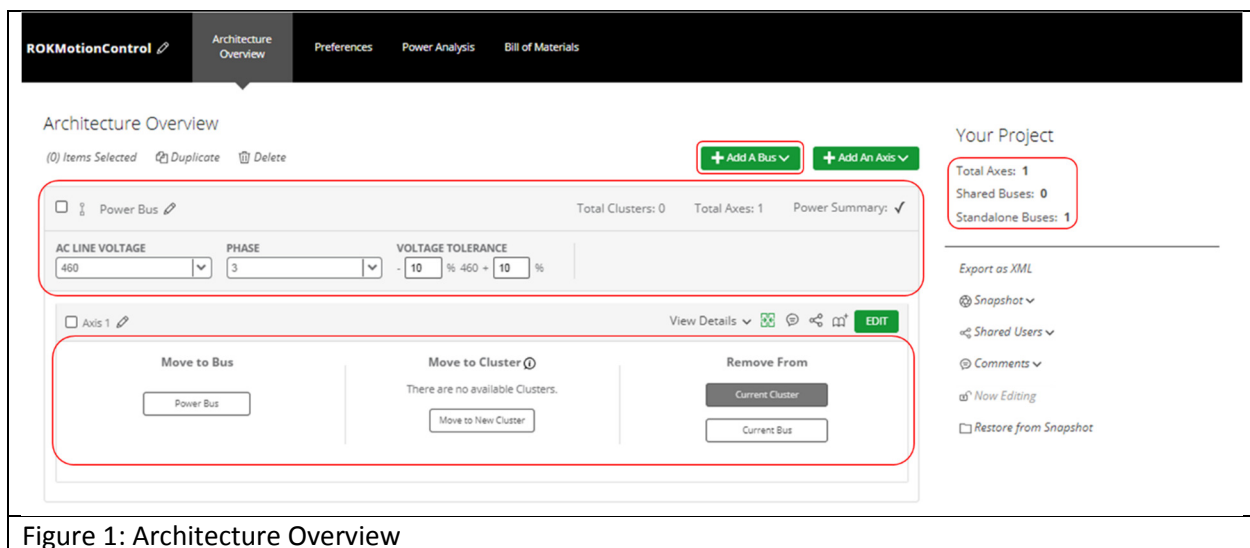


Figure 1: Architecture Overview

Architecture Overview now supports the following features and functionality:

1. Bus Creation – simply click the “+Add A Bus” button and a blank bus will be added to your project workspace.
2. Cluster Creation – clusters can be created if the axis utilizes a Kinetix 5700 drive product and it is part of an existing bus. The feature can be accessed from the nested “Move Axis” menu on the axis bar.
3. Axis Assignment – the “Move Axis” allows users to manipulate relationships with buses and clusters in the Architecture Overview workspace.
4. Power Requirements – define the bus power for shared/common or stand-alone drives. Drives will inherit the power requirements at the bus level.
5. Project Metrics – provides axis and bus count. Particularly useful in large or mixed architecture projects.

Power Analysis

1. Workflow – now users start defining axis/bus architectures in the Architecture Overview and progress to the Power Analysis which consists of three pages: Bus Listing, Profile Sequencing, and Power Analysis.
2. User Experience – the pages listed in the workflow above are new. The Bus Listing allows users to select buses for component sizing. The Profile Sequencing page allows users to align single or multi-axis motion profiles for power generation and/or consumption. Lastly, the Power Analysis tab will automatically select power components based on the aggregate power profile generated in the Profile Sequencing tab. Examples of each user experience is provided below – Figure 2-4.
- 3.

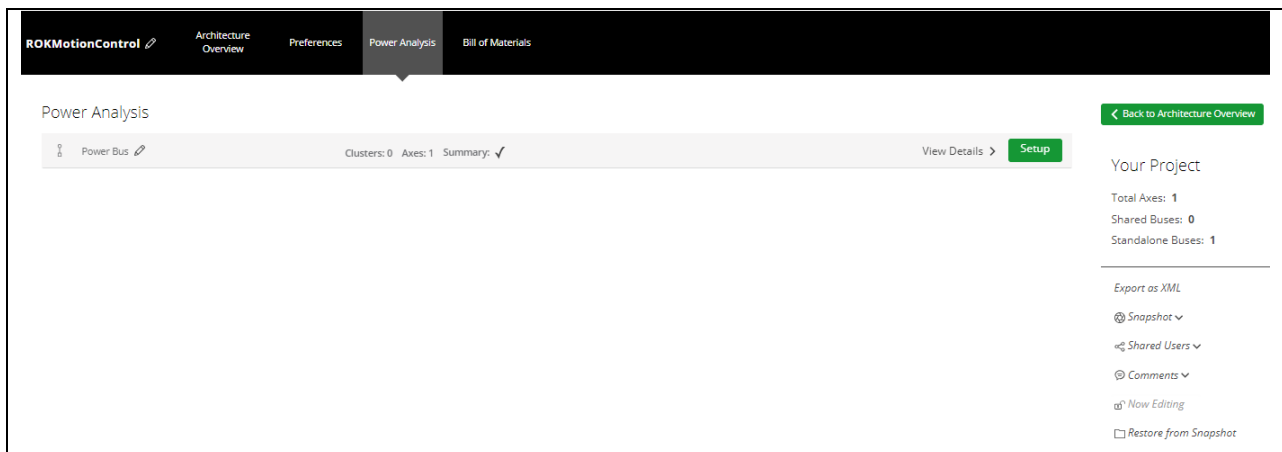


Figure 2: Bus List

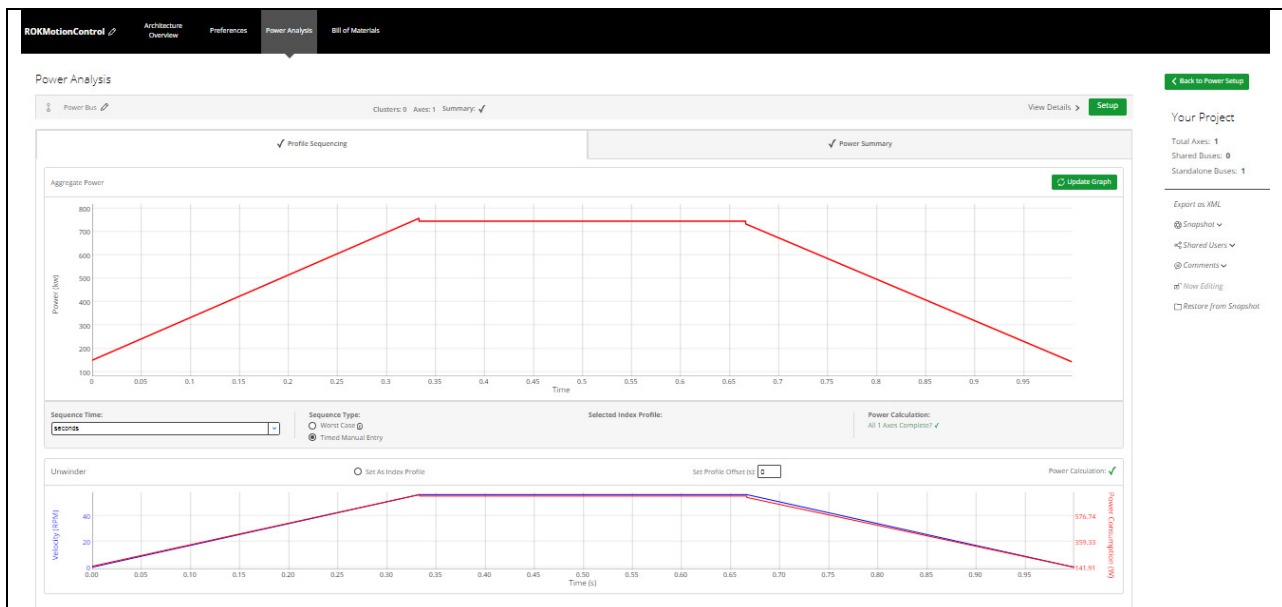


Figure 3: Profile Sequencing

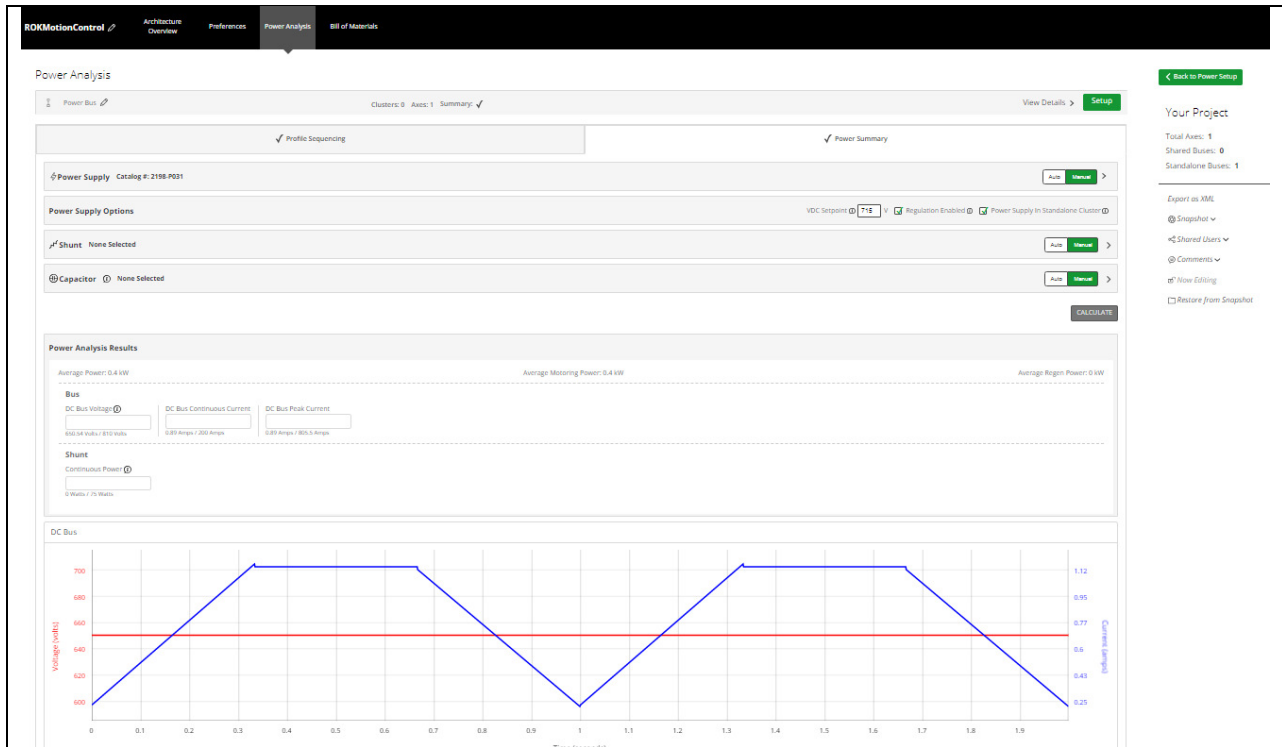


Figure 4: Power Summary

Other Improvements

1. Updated the service that populates the Architecture Overview page. Users should see faster loading times of this page.
2. Migrated bus power profile sizing functions for each drive family to a functionally specific service for improved speed and persistent bus settings. Users should see faster processing times and improved productivity in Power Analysis.
3. Updated the shunt sizing algorithm to accommodate a variety of use-cases and shunts types. This include active shunts, passive shunts, and bus protective shunts (e.g. VPC in overspeed operating conditions)
4. The application template for Carriage Cut Off wasn't generating a motion and load profile. This was fixed in this release.
5. There was an anomaly on the Axis Analysis page was preventing users from sizing up/down motors. This was fixed in this release.

Product Summary

Kinetix 5700 Large Frame Inverters

Part Numbers Include: 2198-S263-ERS3, 2198-S263-ERS4, 2198-S312-ERS3, 2198-S312-ERS4

Kinetix 5700 Regenerative Power Supplies

Part Numbers Include: 2198-RP088, 2198-RP200, 2198-RP263, 2198-RP312

Please reference this [link](#) for more product information.

Known Anomalies

1. Older project XML files may not import into the tool properly. Projects existing in the cloud can be exported and re-imported without issue. This known anomaly will be address in an interim release.
2. Users may need to reorganize and associate axes in the Architecture Overview based on their product and system architecture.