

MICHIGAN STATE

U N I V E R S I T Y

Alpha Presentation

SmartSat™ Satellite App Store

The Capstone Experience

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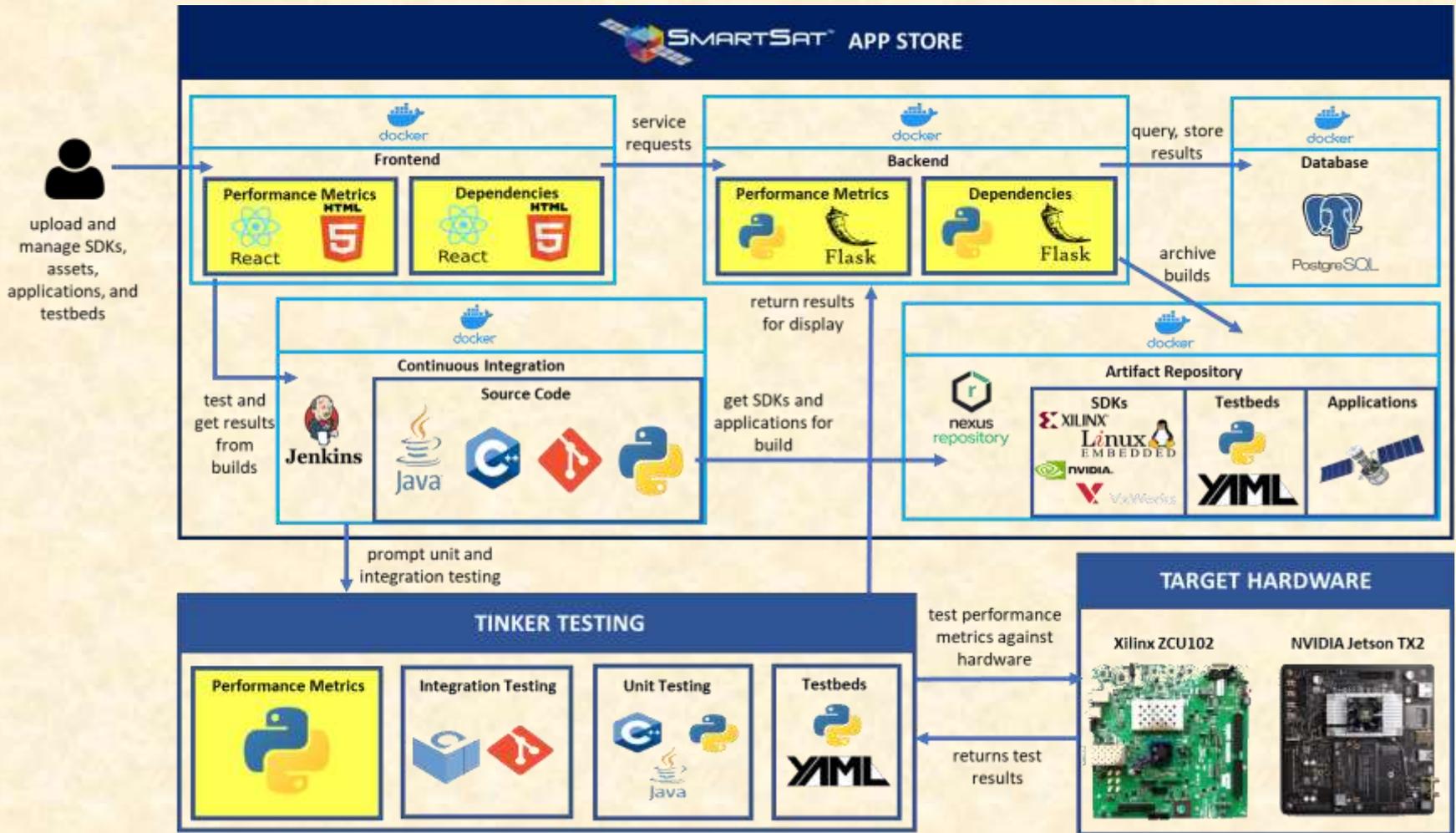
*From Students...
...to Professionals*

Project Overview

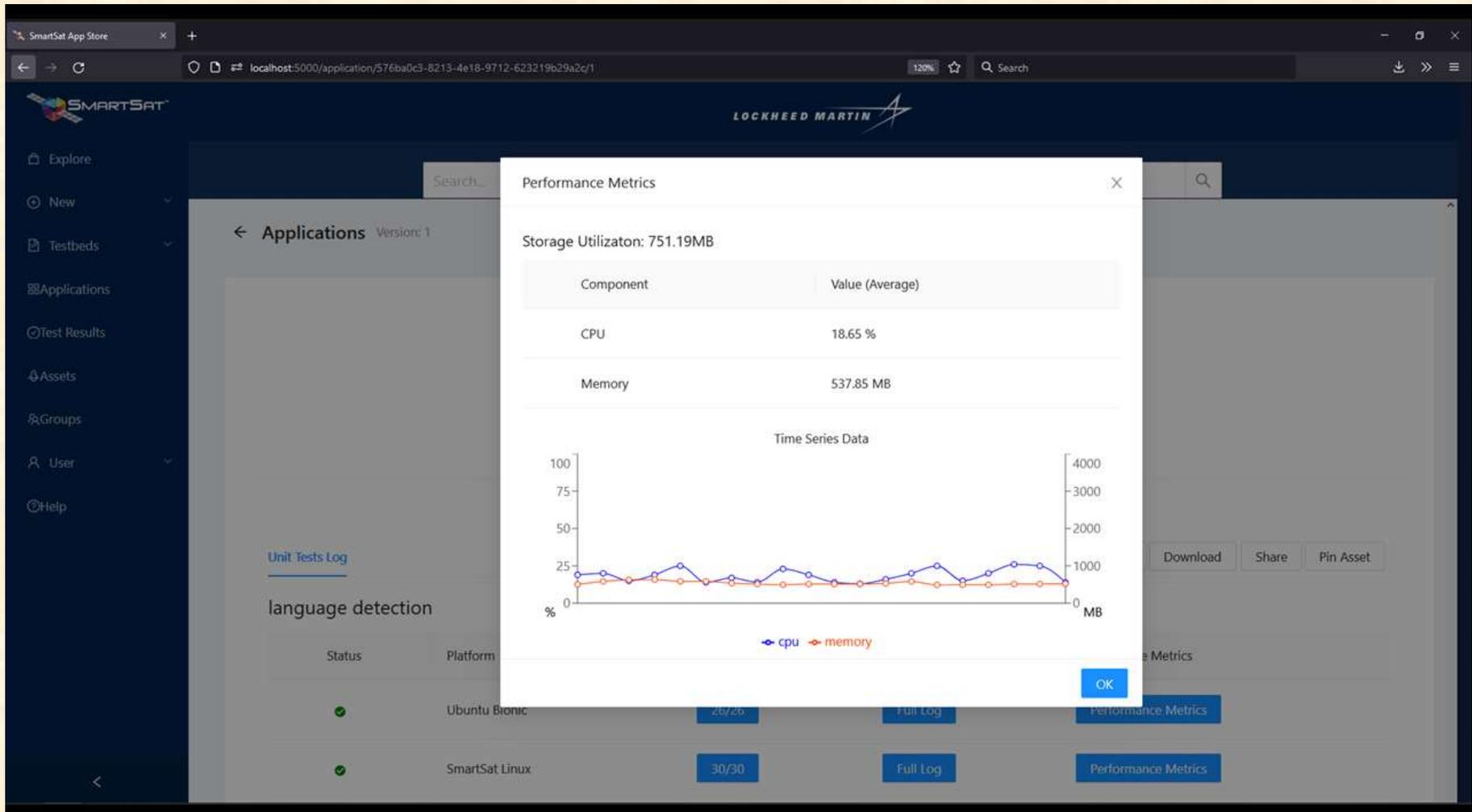
- To enhance the existing SmartSat App Store by adding performance metrics and dependency tracking features which will be displayed to users.
 - To ensure an application is viable for a given satellite system our solution includes performance metrics for CPU and Memory usage
 - Applications may have many dependencies which our solution will automatically track and deploy to satellite systems



System Architecture



Performance Metrics: Application Performance



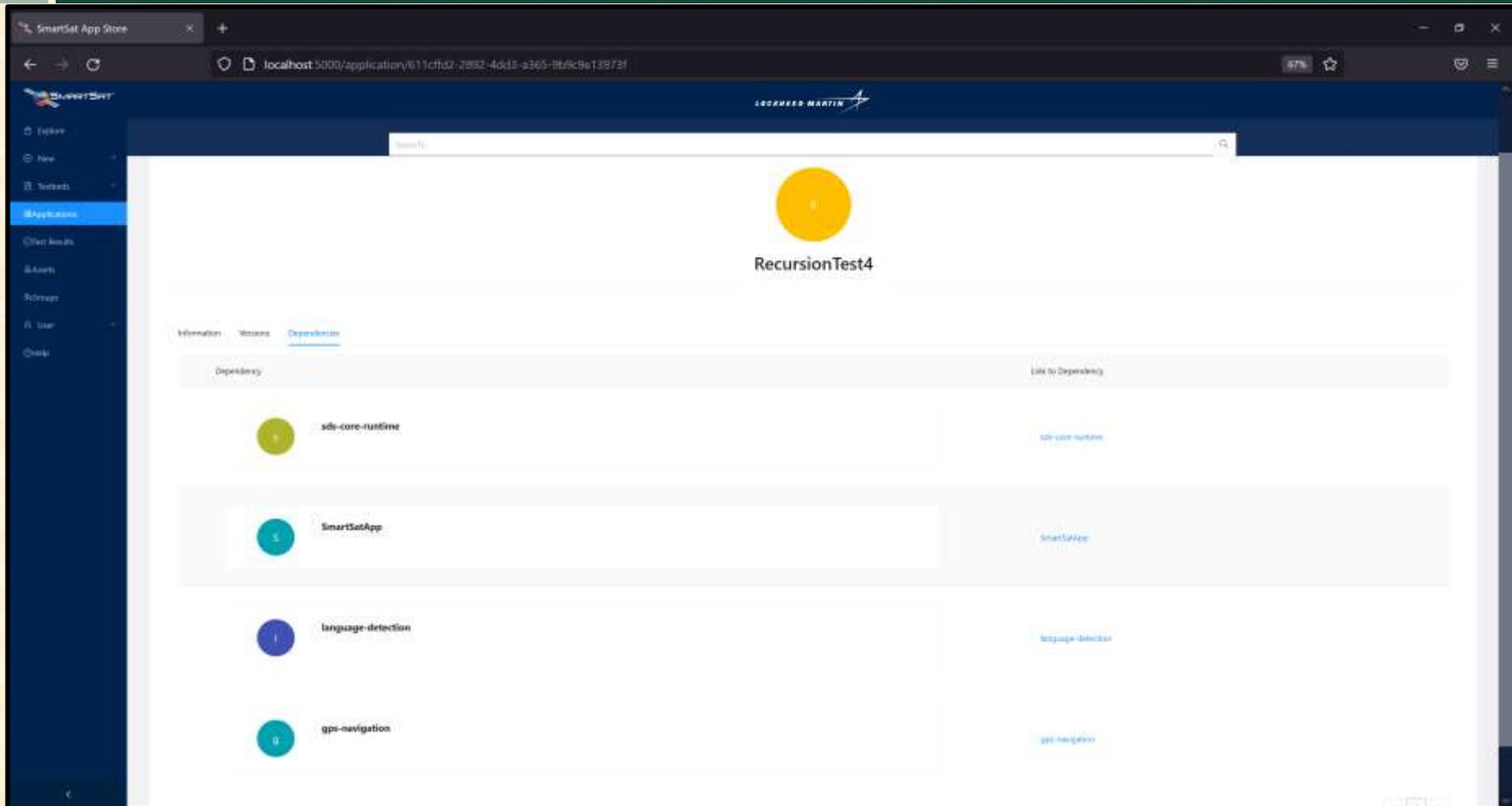
Performance Metrics: Testbed Instance Metrics

The screenshot shows the SmartSat App Store interface. The left sidebar contains navigation options: Explore, New, Testbeds, New Testbed Class, New Testbed Instance, Testbeds, Testbed Instances (highlighted), Applications, Test Results, Assets, Groups, User, and Help. The main content area displays the 'zcu102 Instance' page, which includes a yellow circular icon and a table of performance metrics.

Information	
Description	A zcu201 testbed running smartsat linux
Testbed Class	zcu102smartsatlinux
Boot Time	2.82s
Reboot Time	3.7%



Dependencies: Listed Dependencies



The screenshot displays the SmartSet App Store interface. The main content area shows the application 'RecursionTest4' with a yellow circular icon. Below the application name, there are tabs for 'Information', 'Versions', and 'Dependencies'. The 'Dependencies' tab is active, showing a list of dependencies. Each dependency entry includes a colored circular icon, the dependency name, and a 'Link to Dependency' button.

Dependency	Link to Dependency
 sds-core-runtime	sds-core-runtime
 SmartSetApp	SmartSetApp
 language-detection	language-detection
 gps-navigation	gps-navigation



Dependencies: Checking Dependencies on Hardware

The screenshot displays the SmartSat App Store interface. The top navigation bar includes the SmartSat logo and the Lockheed Martin logo. A search bar is visible. The main content area shows a list of applications, with 'Applications Version 1.1' selected. A deployment dialog box is open, titled 'Deploy 'RecursionTest4''. The dialog shows the following information:

- Asset: Jetson - Domain 0
- Dependencies Needed: Dependencies on Appstore
 - sds-core-runtime
- Dependencies not on Appstore
 - SmartSatApp
 - language-detection
 - gps-navigation
- Would you like to deploy dependencies?
 - Yes
 - No
- Deploy



What's left to do?

- Front & back-end integration for performance metrics
- Repair Codebase by replacing hard-coded values for dynamic variables
- Deploy dependencies to hardware



Questions?

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