

MICHIGAN STATE

U N I V E R S I T Y

Beta Presentation

SmartSat™ Satellite App Store

The Capstone Experience

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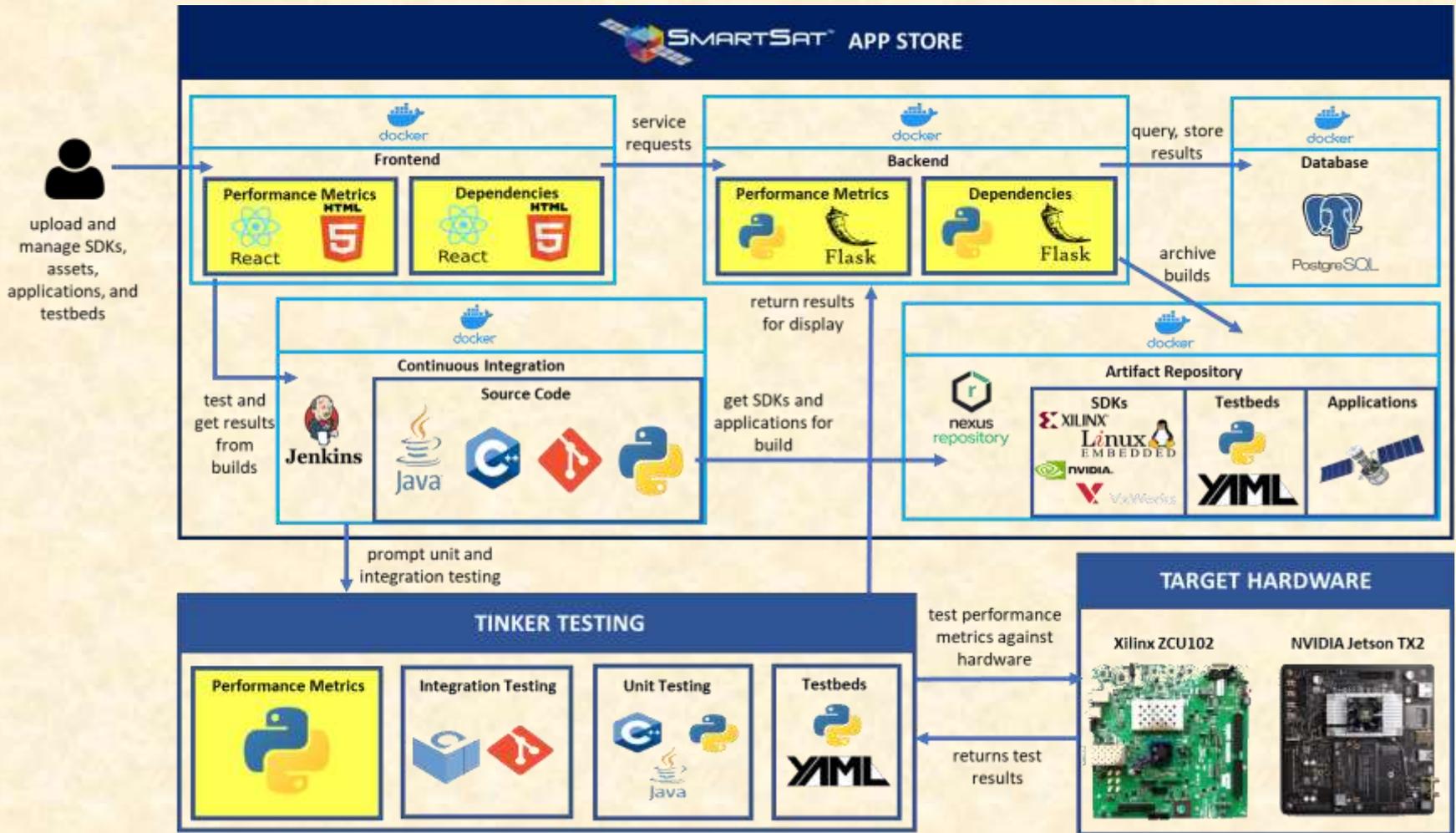
*From Students...
...to Professionals*

Project Overview

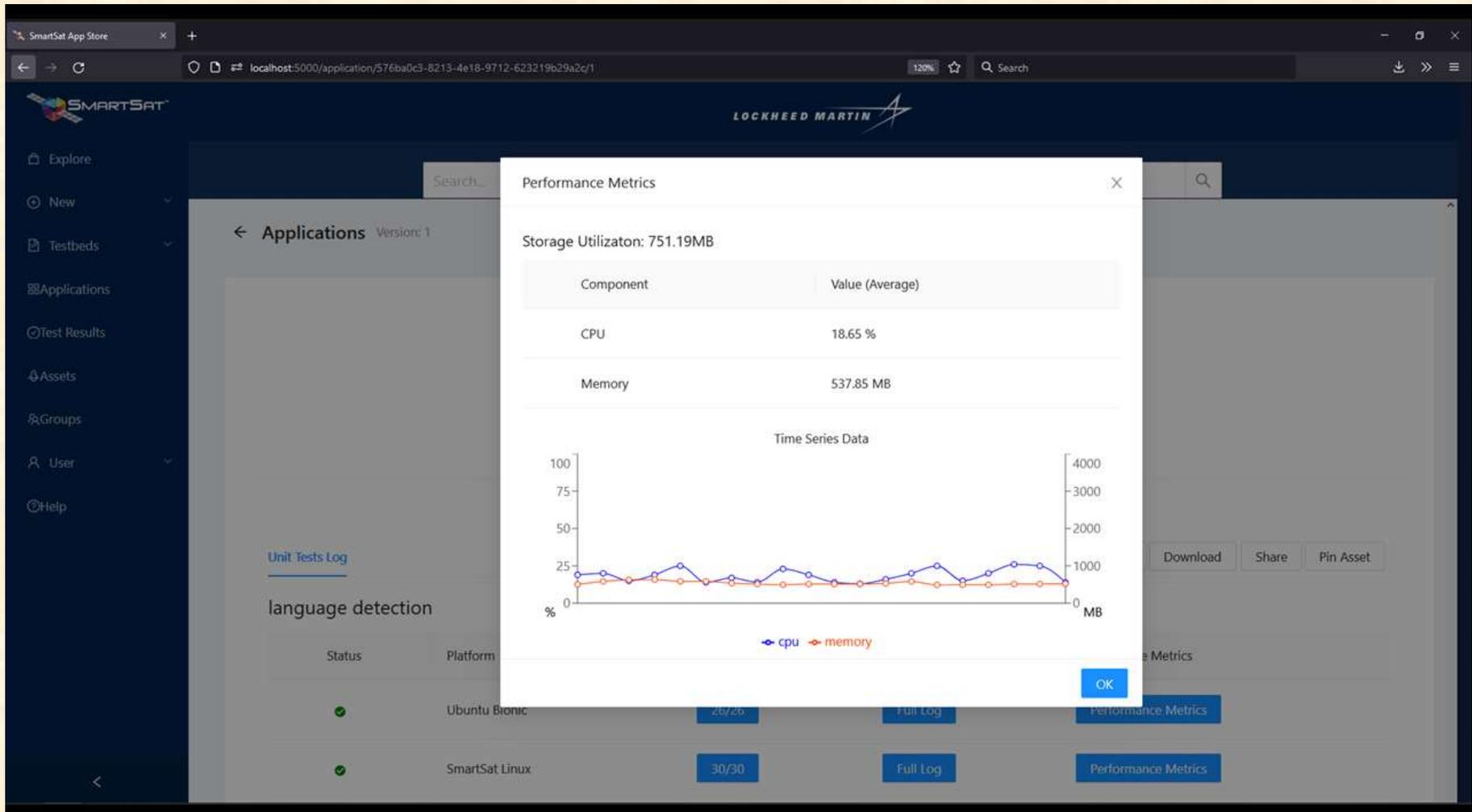
- To enhance the existing SmartSat App Store by adding performance metrics and dependency tracking features which will be displayed to users.
 - To ensure an application is viable for a given satellite system our solution includes performance metrics for CPU and Memory usage
 - Applications may have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



System Architecture



Performance Metrics: Application Performance



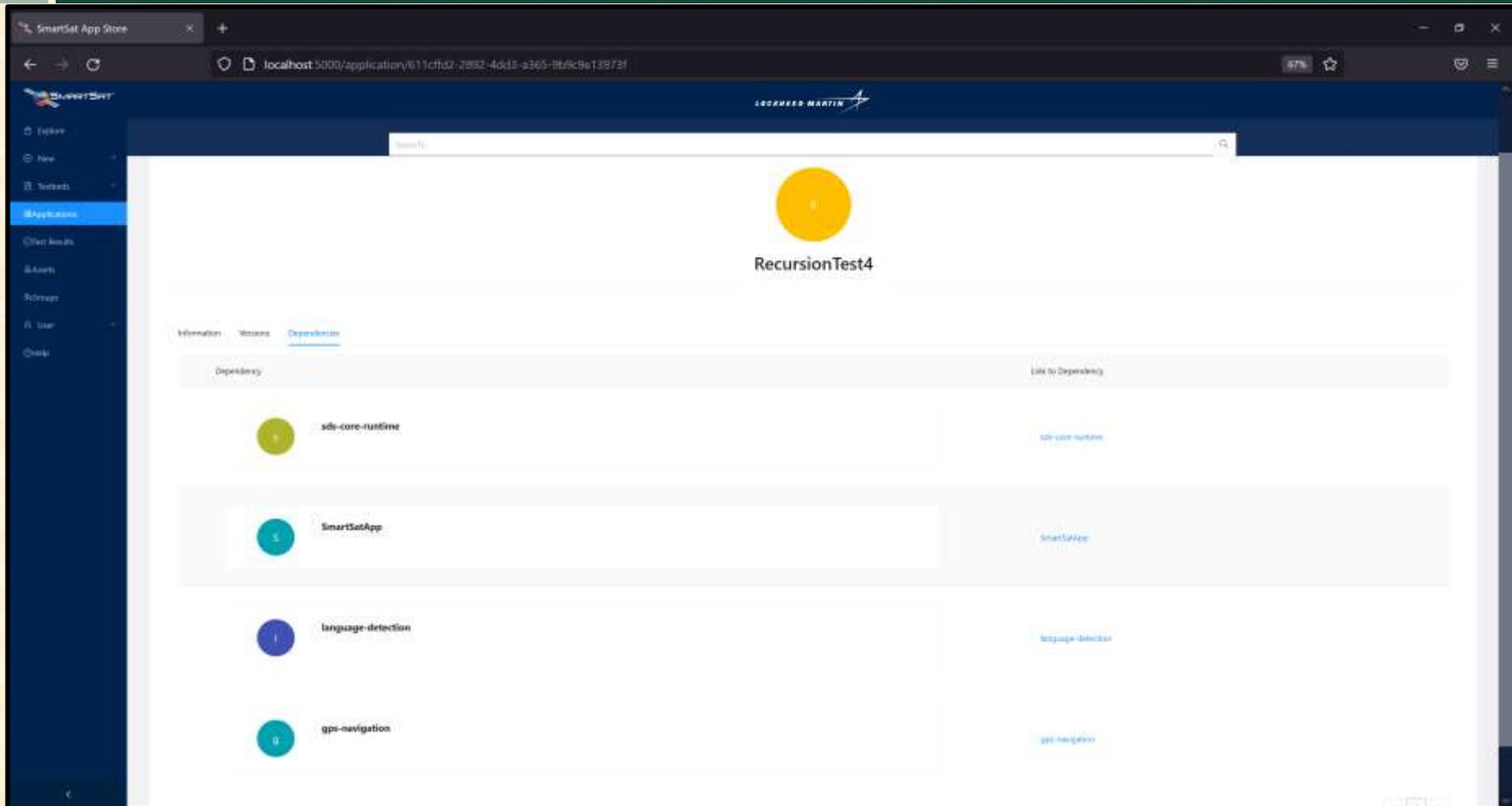
Performance Metrics: Testbed Instance Metrics

The screenshot displays the 'ZCU102 Smartsat Linux Testbed Instance' page in the Smartsat Linux Testbed interface. The page is titled 'ZCU102 Smartsat Linux Testbed Instance' and features a search bar at the top. The left sidebar contains navigation options: Explore, New, Testbeds, New Testbed Class, New Testbed Instance, Testbed Classes, Testbed Instances (highlighted), Applications, Test Results, Alerts, Groups, User, and Help.

The main content area shows the following performance metrics:

| Metric | Value |
|--------------------------------|---|
| Description | ZCU102 Testbed Instance for the Smartsat Linux platform of SDMs |
| Testbed Class | ZCU102SmartsatLinux |
| Boot Time | 172.86s |
| Reboot Time | 6.5s |
| Base System CPU Utilization | 3.0% |
| Base System Memory Utilization | 660.2 MB |
| Free Storage | 9.3 G |

Dependencies: Listed Dependencies



The screenshot shows a web browser window displaying the SmartSat App Store. The application 'RecursionTest4' is selected, and the 'Dependencies' tab is active. The dependencies are listed in a table with columns for 'Dependency' and 'Link to Dependency'.

| Dependency | Link to Dependency |
|--|------------------------------------|
|  sds-core-runtime | sds-core-runtime |
|  SmartSatApp | SmartSatApp |
|  language-detection | language-detection |
|  gps-navigation | gps-navigation |



Dependencies: Select Dependency Version

The screenshot shows the App Store interface for the application 'GpsNavigation/1.1'. The 'Dependencies' tab is selected, and a modal dialog titled 'Deploy 'GpsNavigation'' is open. The modal displays the following information:

- Asset: Jetson FX2 - Darwin 0
- Info: Please select version of Dependency
- Dependencies needed: Dependencies on Appstore
- LanguageDetection: [Dropdown menu]

The dropdown menu for 'LanguageDetection' is open, showing the following options:

- 0.1.1
- 0.1.2
- 1.1.0



What's left to do?

- Bug fixes and refactoring of pre-spring 2022 code that is still non-functional
- Database backups for future semesters
- Create documentation to assist future semesters with the startup procedure



Questions?

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