



# SWAN Package Manager

GSoC 2019 Project Presentation

By Akash Ravi

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Google Summer of Code



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# What is SWAN

Service for Web based ANalysis

Built on top of Jupyter notebooks

Users can code and run their scripts via a web interface.

Projects are special folders that can store notebooks, files, etc.

Centrally managed software packages, provided by CVMFS





# Motivation

Users need a way to seamlessly install, update or delete packages for their projects.

Each project might need different versions of a package. This extension provides an isolated environment for each project.

By default, when a user clones a shared project, the required packages are not installed. This extension will let users install them.

This project thus encourages reproducible results and collaborative analysis.



# Features

View packages installed for a specific project

Update / Delete existing packages

Search for new packages and install them

Sync your project if any of your packages are missing or misconfigured



## What's accomplished

Server Extension with all the necessary API endpoints

Frontend Extension that lets users interact with the package manager

Dockerfile that automates deployment

SWAN integration (partially)



# What's yet to be done

Optimization of kernel display filtering

Integration with EOS

Improving visual cues

Rigorous end to end testing



Projects

Share

CERNBox

SWAN > My Projects > test1

test1 ↑

NAME	SIZE
Untitled.ipynb	1.03 kB

## Configure Project



### Install Packages

Search for available packages



### Packages To Install

✓ numpy 1.17.0

Install Packages

### Installed Packages



_libgcc_mutex	0.1
backcall	0.1.0
bzip2	1.0.8
ca-certificates	2019.6.16
certifi	2019.6.16
decorator	4.4.0
ipykernel	5.1.2
ipython	7.7.0
ipython_genutils	0.2.0
jedi	0.15.1
jupyter_client	5.3.1
jupyter_core	4.4.0
libffi	3.2.1
libgcc-ng	9.1.0
libsodium	1.0.17
libstdc++-ng	9.1.0



SWAN > My Projects > test1

test1 ↑

NAME ▾

Untitled.ipynb

1.03 kB

## Update Packages

The following packages are about to be updated.

- pyyaml 3.13 -> 5.1.2

Cancel

Confirm

## Configure Project

### Install Packages

Search for available packages

### Installed Packages

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backcall	0.1.0
bzip2	1.0.8
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jupyter_client	5.3.1
jupyter_core	4.4.0
libffi	3.2.1
libgcc-ng	9.1.0
libsodium	1.0.17
libstdcxx-ng	9.1.0
ncurses	6.1
openssl	1.1.1c
parso	0.5.1
pexpect	4.7.0
pickleshare	0.7.5





**Thank You**