

# Jupyter Notebooks

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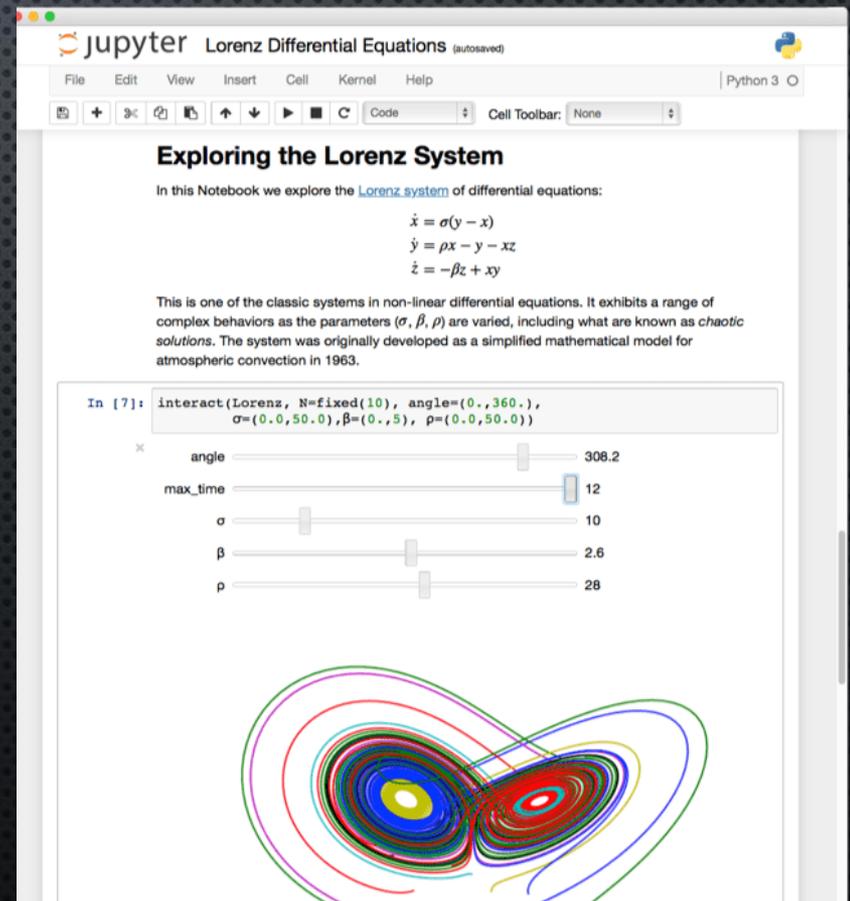
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# Overview

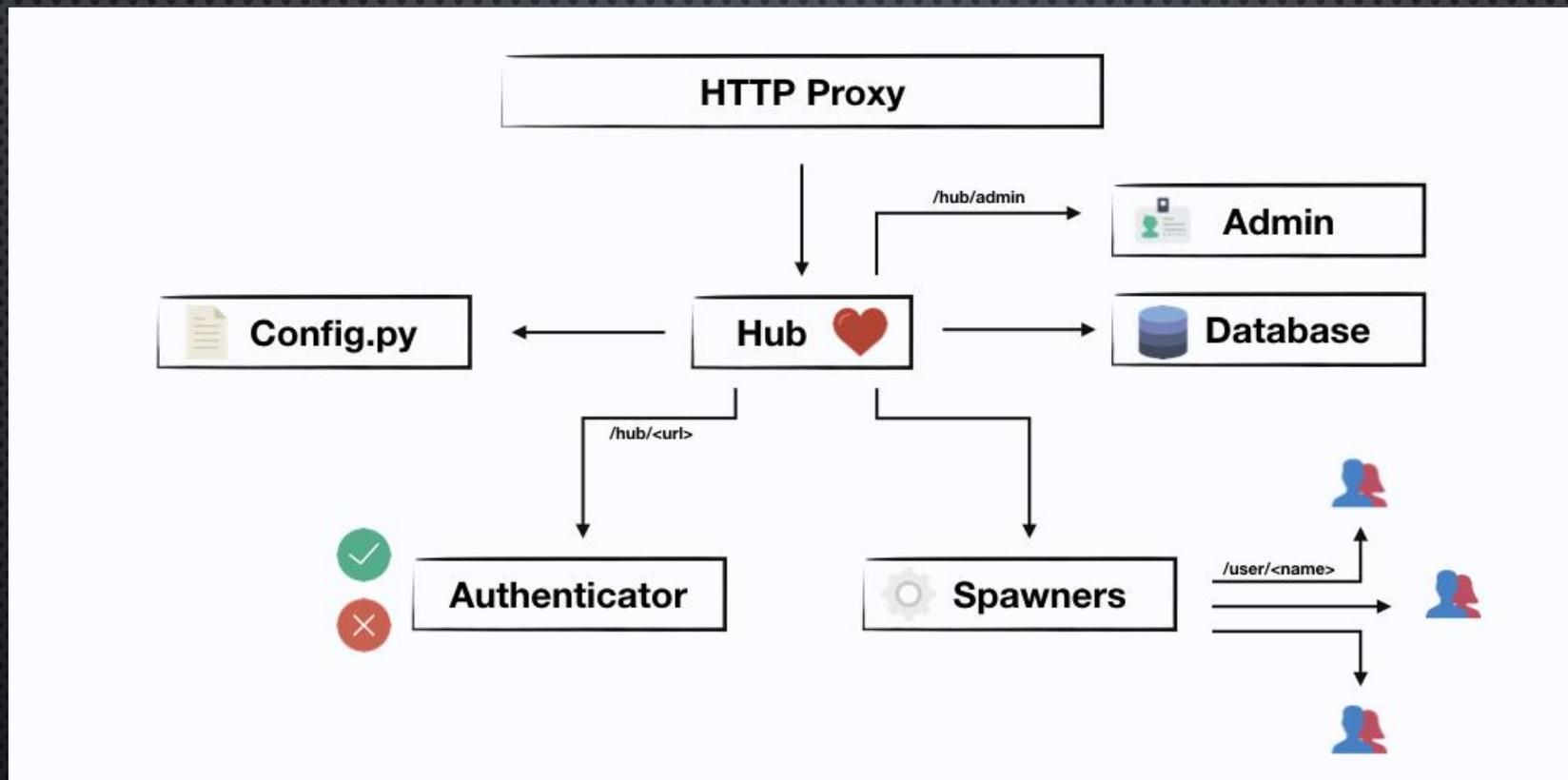
- What are Jupyter Notebooks?
- Jupyter environments @AWI
- Demo
  - Jupyter 101
  - Examples: using Pangaea data in notebooks

# What are Jupyter Notebooks?

- Jupyter Notebooks are documents (own document format)
- Run in Jupyter Notebook software
- View in a web browser
- Code, program output und documentation in one document
- Interactive code execution
- Support for many programming languages



# JupyterHUB: multiuser system



# Anaconda

## Distribution

- Support for Python and R
- Own package management (conda)
- Precompiled libraries
- Jupyter Notebook (software)
- Spyder IDE
- Free and premium versions

# Jupyter Environments

- Independent programming environments
  - Own interpreter
  - Own libraries
  - Package manager: use correct environment!
- Preinstalled environments
- Own environments in home folder
- R
  - As conda environment (`~/conda/envs/R...`)
  - „regular“ R (`~/R`)

# Jupyterhub @ AWI

<https://jupyterhub.awi.de>

- Central instance
- Shared server
- Access from outside AWI network (without VPN)

Alternative:

- Own instance
- On demand over Marketplace
- Installation on distinct VM
- Limited life span
- Intranet

Common features

- Access central storage (Isilon)
- Working directory: unix home
- Preinstalled environments
  - Python 2.7 (Anaconda)
  - Python 3.6 (Anaconda)
  - R 3.5
- Own environments (access over all servers)

# Demo

- Introduction to Jupyter Notebook
  - Your personal working directory
  - Notebook 101
  - Using /changing environments
  - Create own environments and install packages using pip or conda
- Example Notebooks

# Documentation

<https://spaces.awi.de/display/DM/Jupyterhub+Documentation>