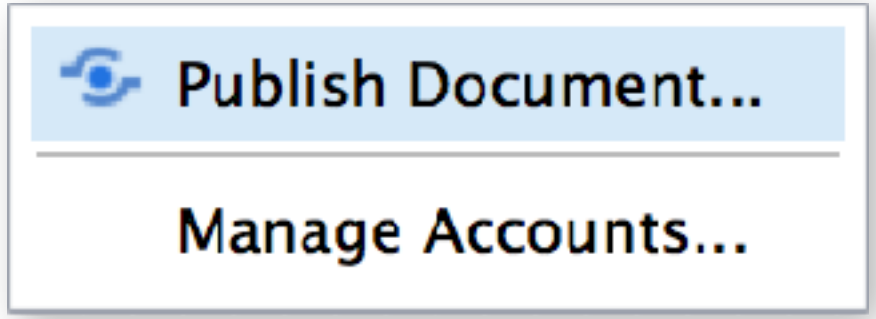
Push-Button Publishing in RStudio Connect

Jeff Allen 2/2018

RStudio

@trestleJeff

RStudio Connect

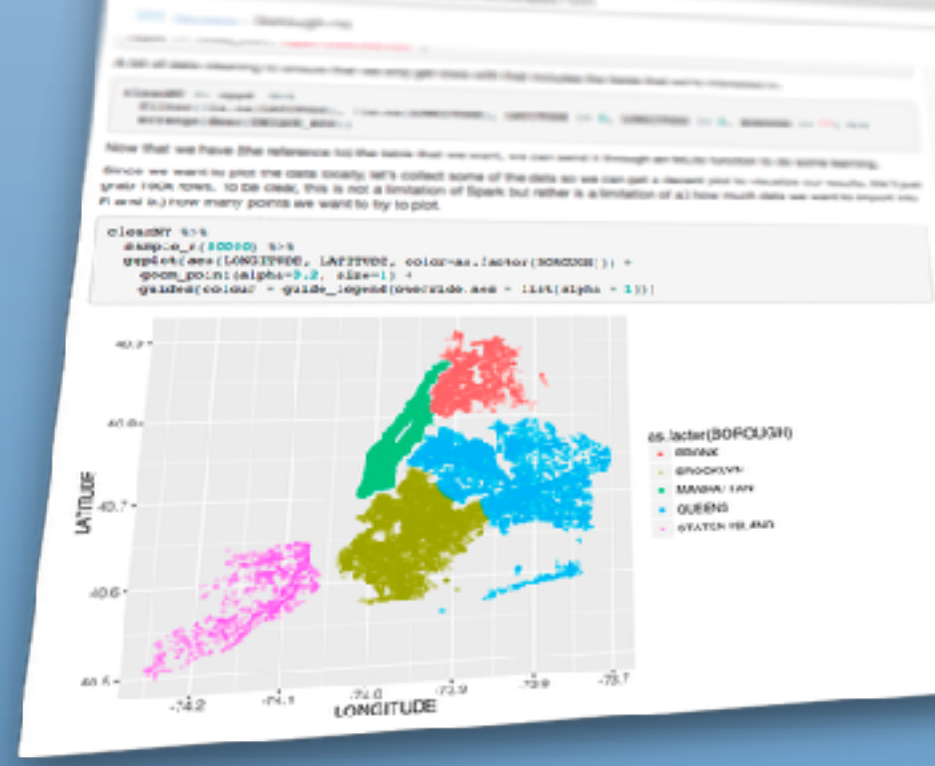


- Push-button publishing from the RStudio IDE
- Manages all the content types you produce in R:

  Shiny, APIs, R Markdown, plots, etc.
- On-premises, commercial
- Share data science artifacts

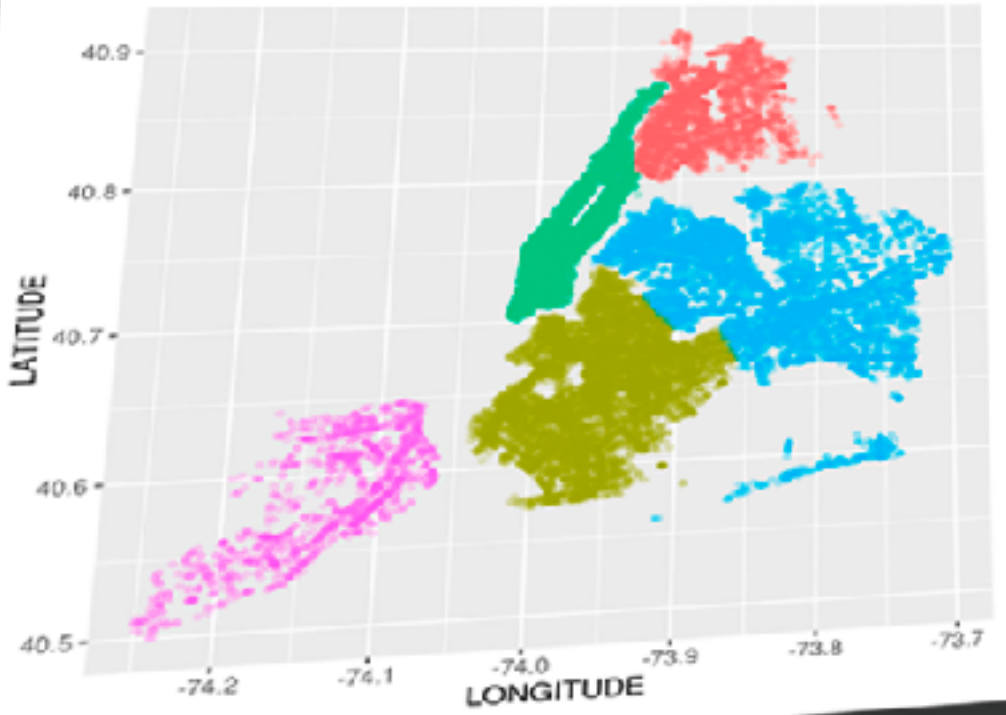
Three stages of R adoption in an organization

1. Bespoke analysis
2. Interactive tools
3. Fully integrated



Since we want to plot the data locally, let's collect some of the data so we can get a decent plot to visualize our results. We'll just grab 100k rows. To be clear, this is not a limitation of Spark but rather is a limitation of a.) how much data we want to import into R and b.) how many points we want to try to plot.

```
cleanNY %>%
  sample_n(100000) %>%
  ggplot(aes(LONGITUDE, LATITUDE, color=as.factor(BOROUGH))) +
    geom_point(alpha=0.2, size=1) +
    guides(colour = guide_legend(override.aes = list(alpha = 1)))
```



Who runs this document on the server

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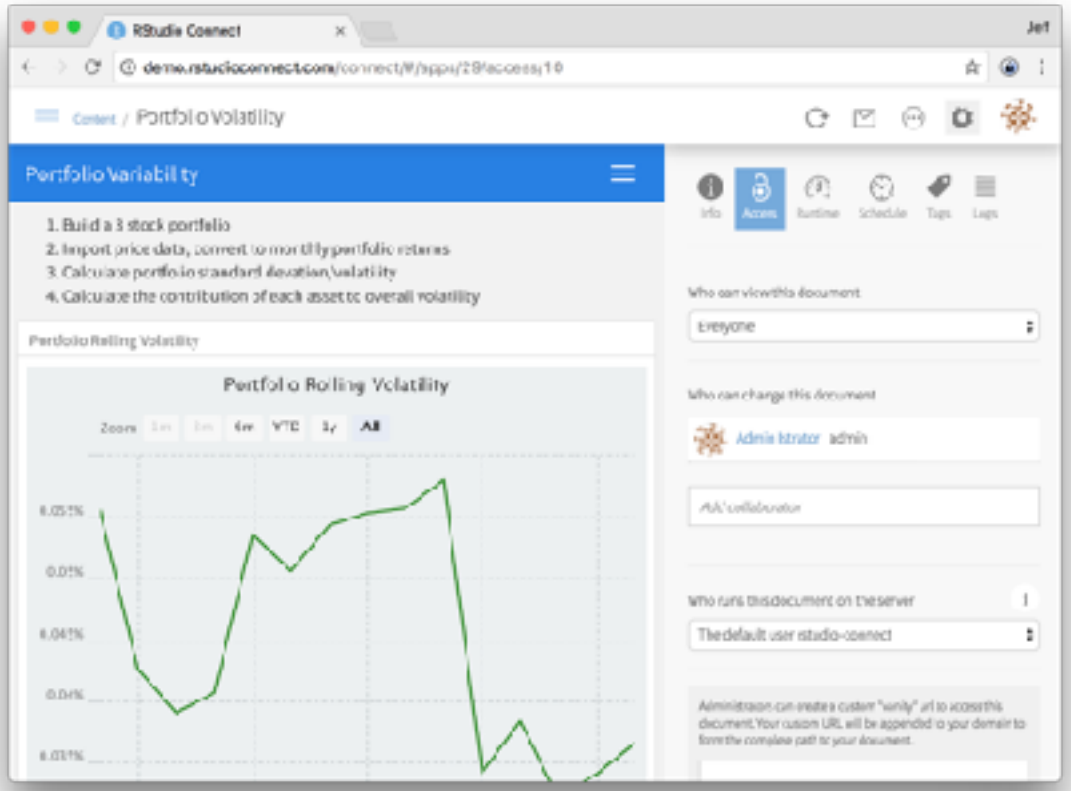
Stage 1: Bespoke Analysis

Stage 1: Overview

- Data scientist is a black box
- Delivers a static result (plot, table, document)
- Revise question or ask new questions and start over
- Individual secretly installing R on your laptop to a group managing their own RStudio Server

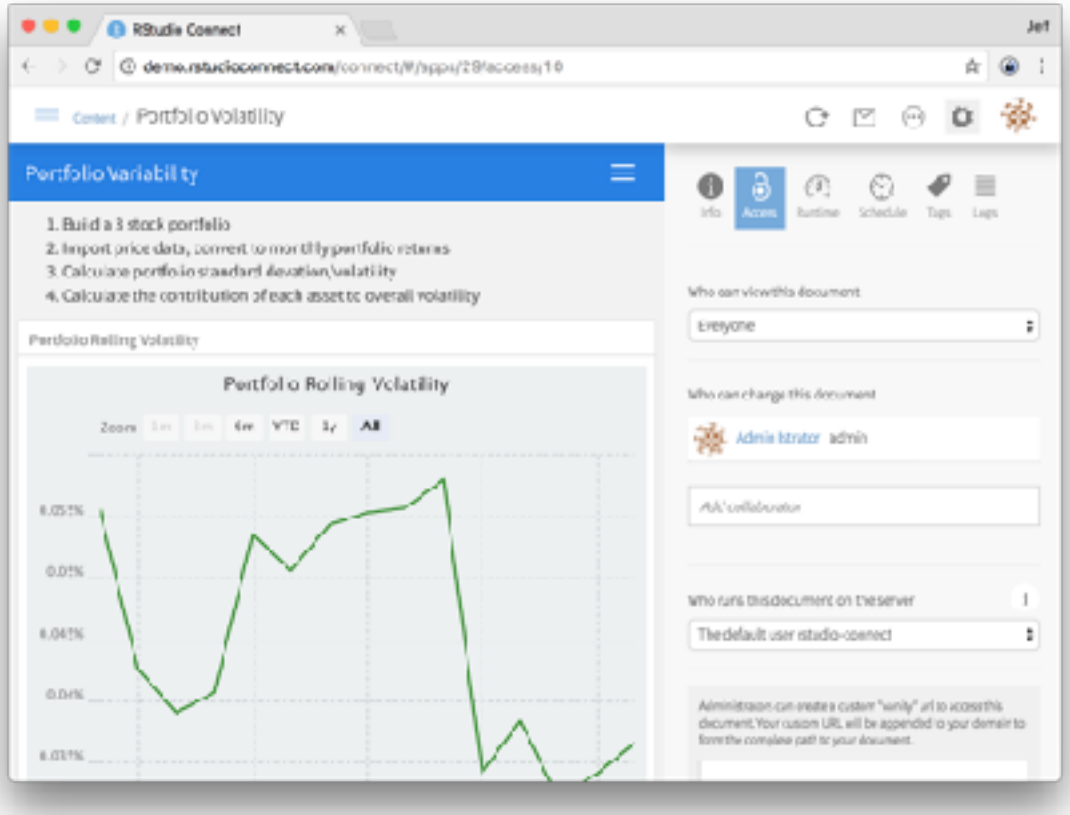
Stage 1: Use Cases

- Sales reporting
- Investment analysis, reproducible decision making
- Game usage metrics reporting



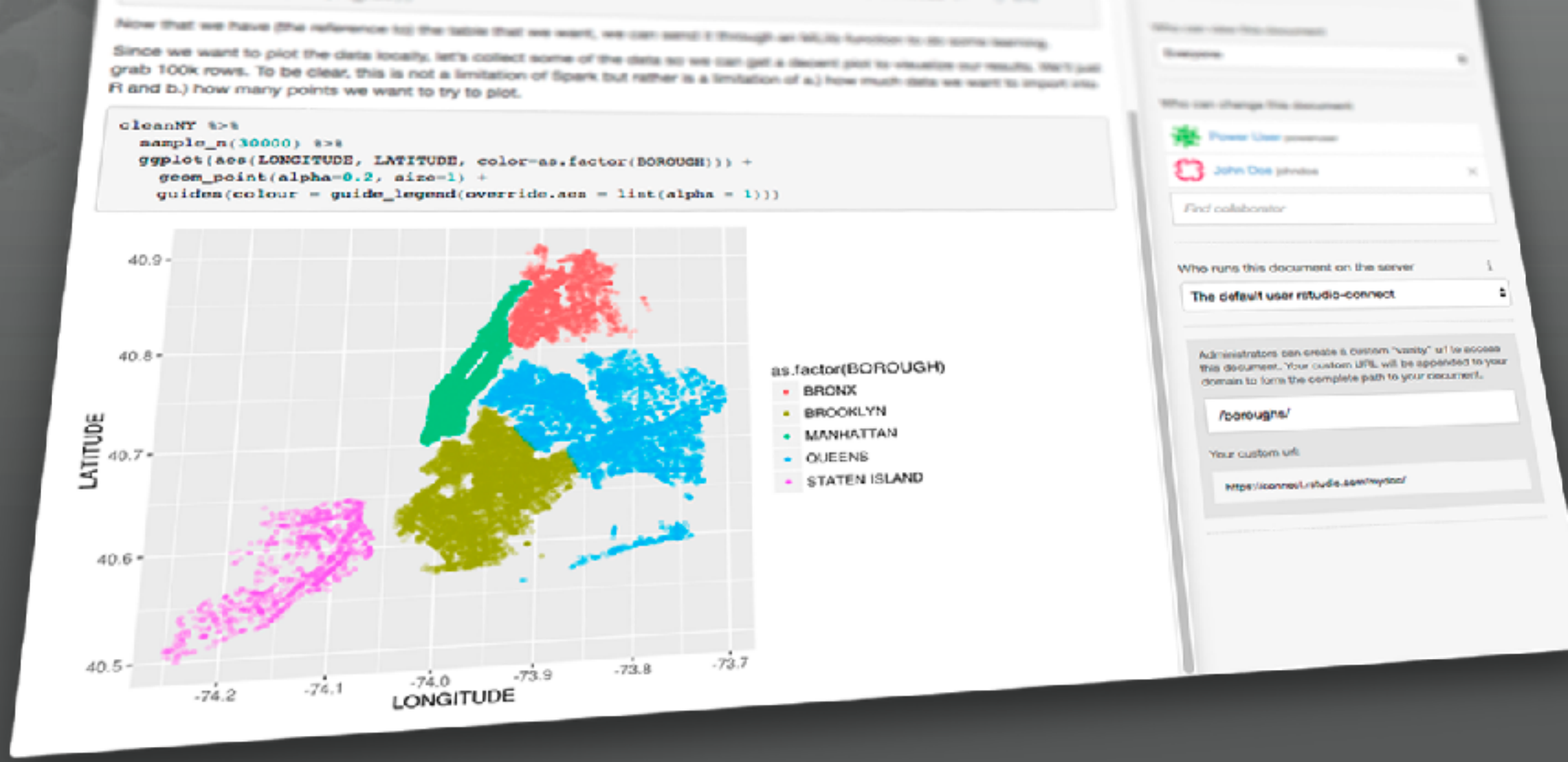
Stage 1: Issues

- Disorganized output
- Managing access
- Irreproducible
- No ability to automate



Stage 1 Demo

RStudio



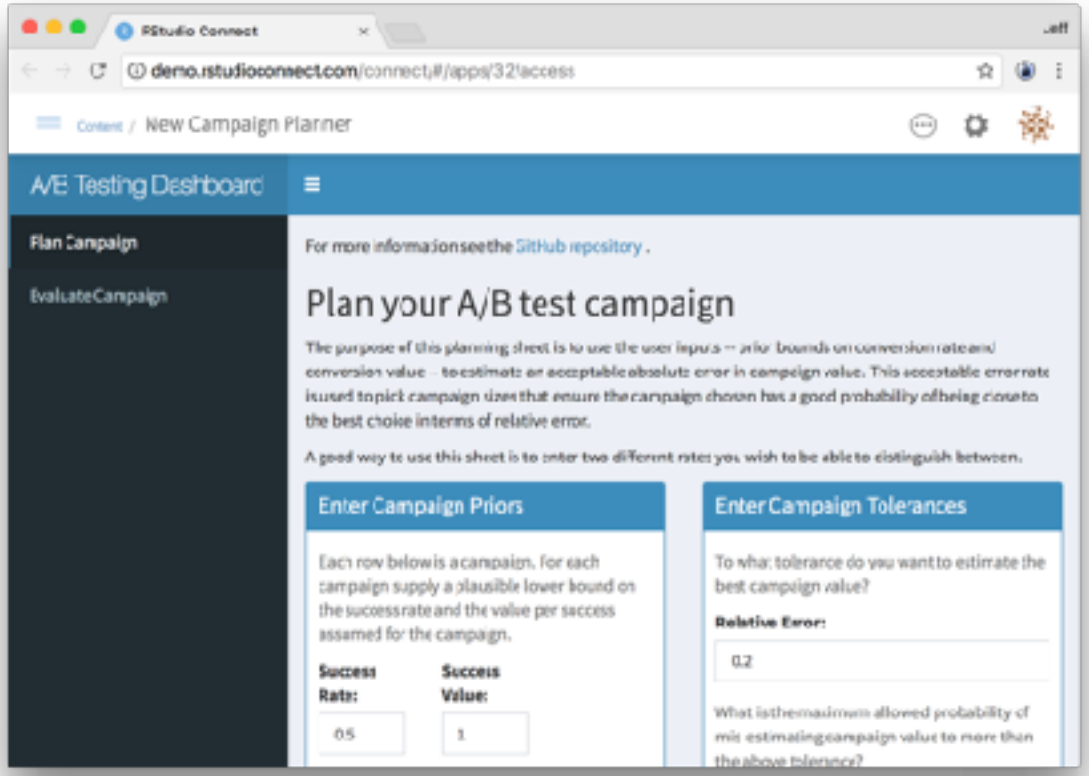
Stage 2: Interactive Tools

Stage 2: Overview

- Some formal acceptance of R
  - Internal user-groups, training
  - Optimizing the on-boarding experience
- Non-R-users consume tools written in R
  - Self-service
  - Shiny, Parameterized R Markdown

Stage 2: Use Cases

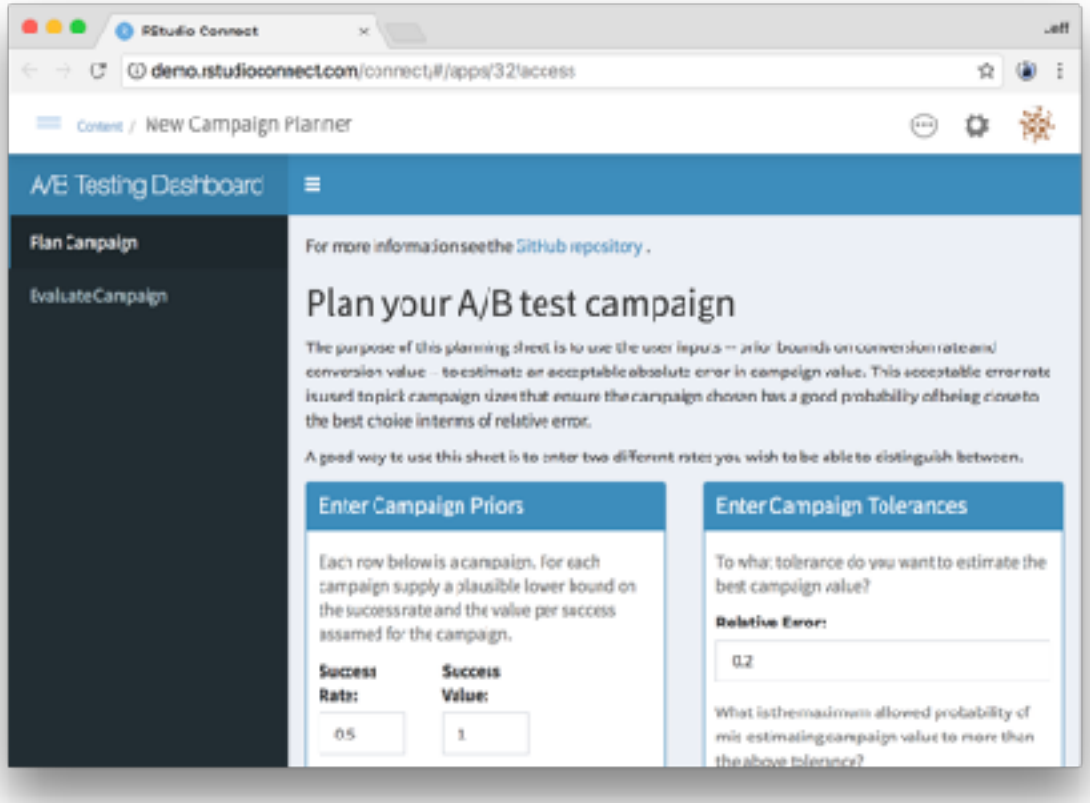
- BI dashboarding
- Monitoring & analysis of customer support
- Domain-specific tooling
  - Split testing



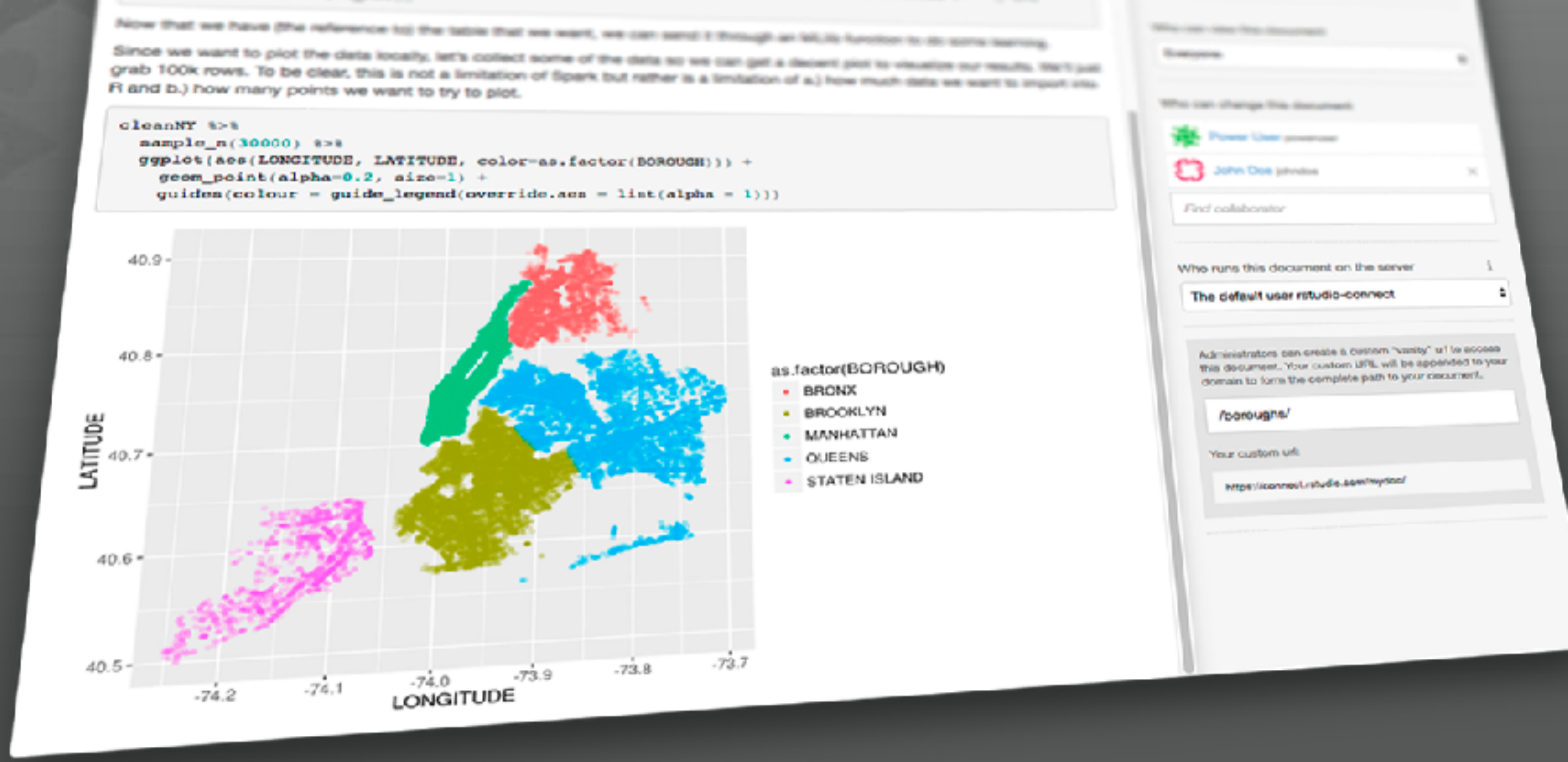
https://github.com/WinVector/CampaignPlanner_v3

Stage 2: Issues

- Hosting
  - Internal vs external
  - Authentication
  - Scalability & performance
- Publishing applications
- Testing


RStudio Connect
demo.rstudioconnect.com/connect/#/apps/32/access
Content / New Campaign Planner
A/B Testing Dashboard
Plan Campaign
EvaluateCampaign
For more information see the GitHub repository .
Plan your A/B test campaign
Enter Campaign Priors
Each row below is a campaign. For each campaign supply a plausible lower bound on the success rate and the value per success assumed for the campaign.
Success Rate:
Success Value:
0.5
1
Enter Campaign Tolerances
To what tolerance do you want to estimate the best campaign value?
Relative Error:
0.2

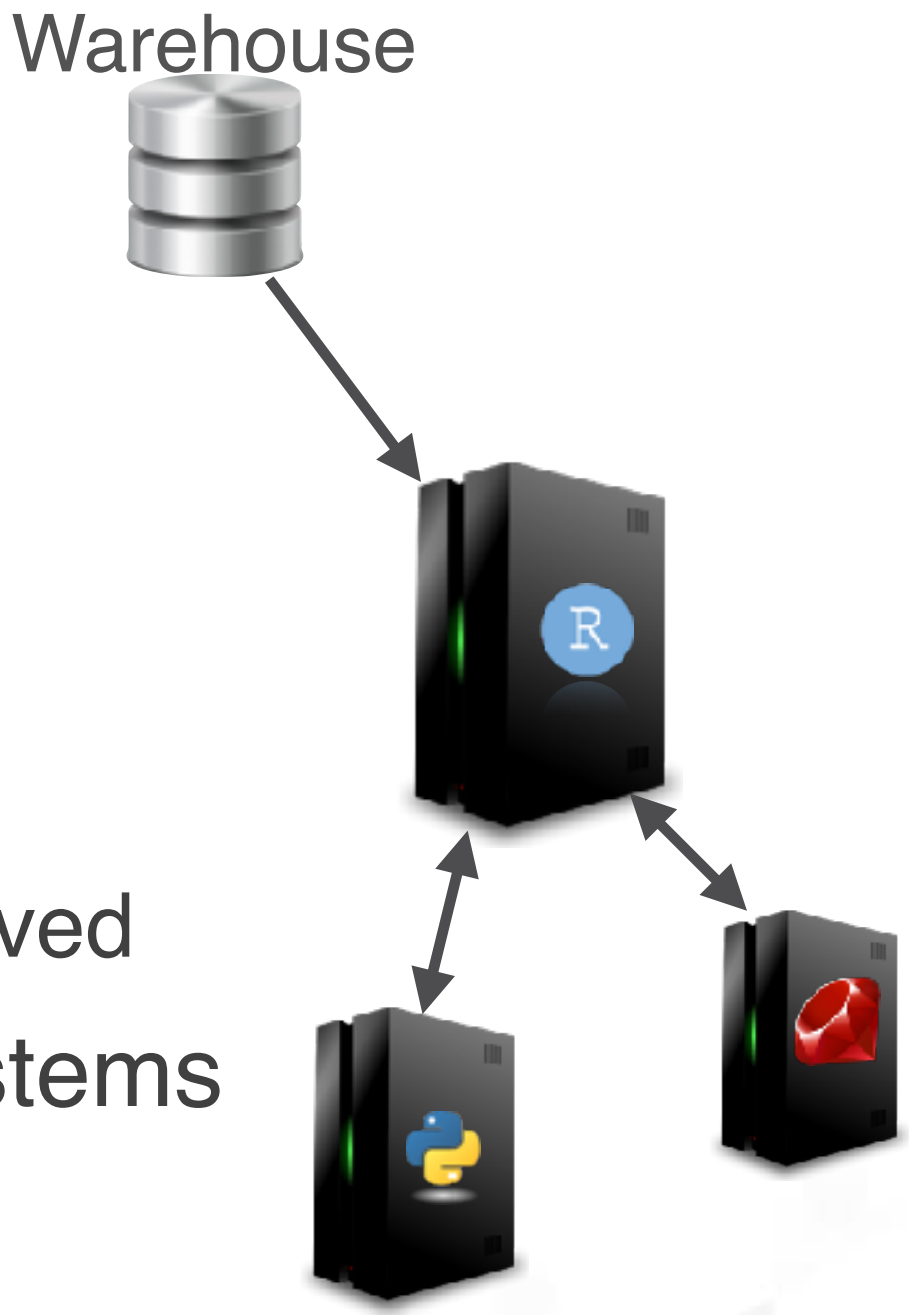
Stage 2 Demo



Stage 3: Fully Integrated

Stage 3: Overview

- R is fully embraced
  - Permissive access to data
  - Share analysis broadly
  - Non-data-scientists get involved
- Incorporate R into other systems



Stage 3: Issues

- Enabling other systems to communicate with R
- Code sharing, package management
- Data governance

Plumber

- Open-source R package
- Make your R code available over a web API
- Consumed by systems in any other programming language
- https://www.rplumber.io/

Stage 3: Use Cases

- Leverage R from existing enterprise system: Java, Python, Ruby, etc.
  - Compare to porting your R code into another language
- Recommendation/forecasting engine

```
cleanNY %>%
  sample_n(30000) %>%
  ggplot(aes(LONGITUDE, LATITUDE, color=as.factor(BOROUGH))) +
    geom_point(alpha=0.2, size=1) +
    guides(colour = guide_legend(override.aes = list(alpha = 1)))
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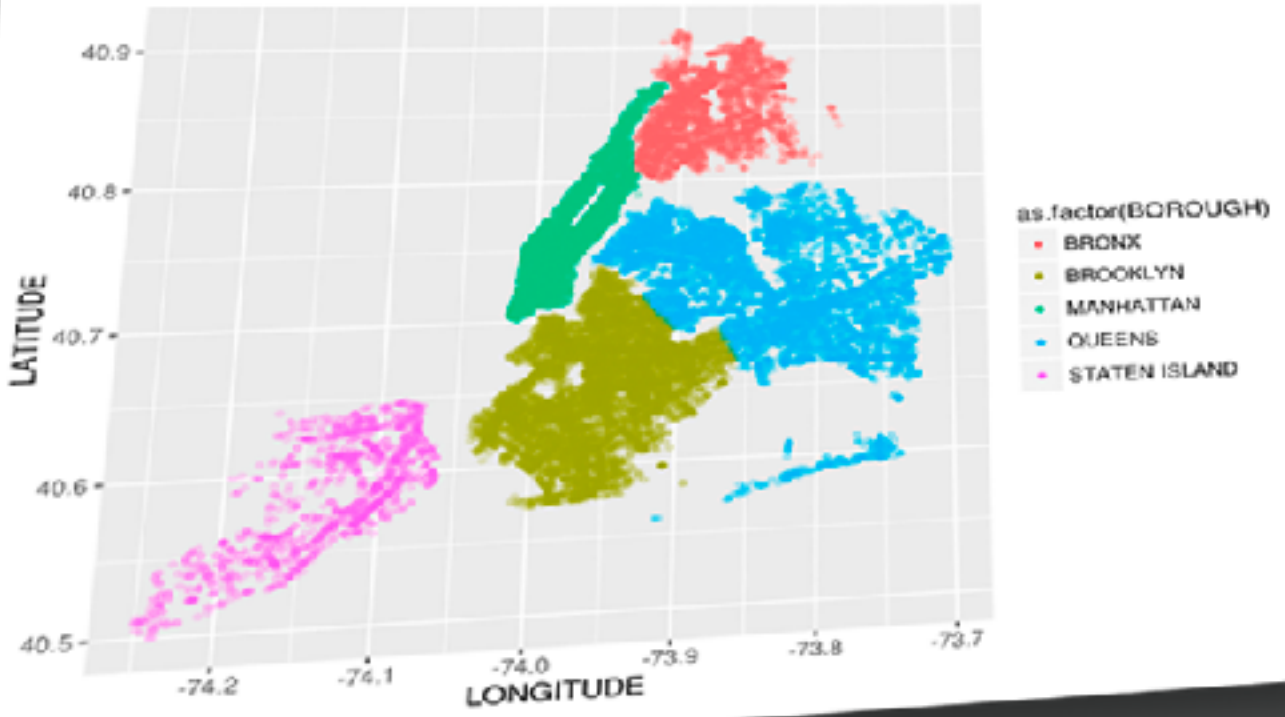

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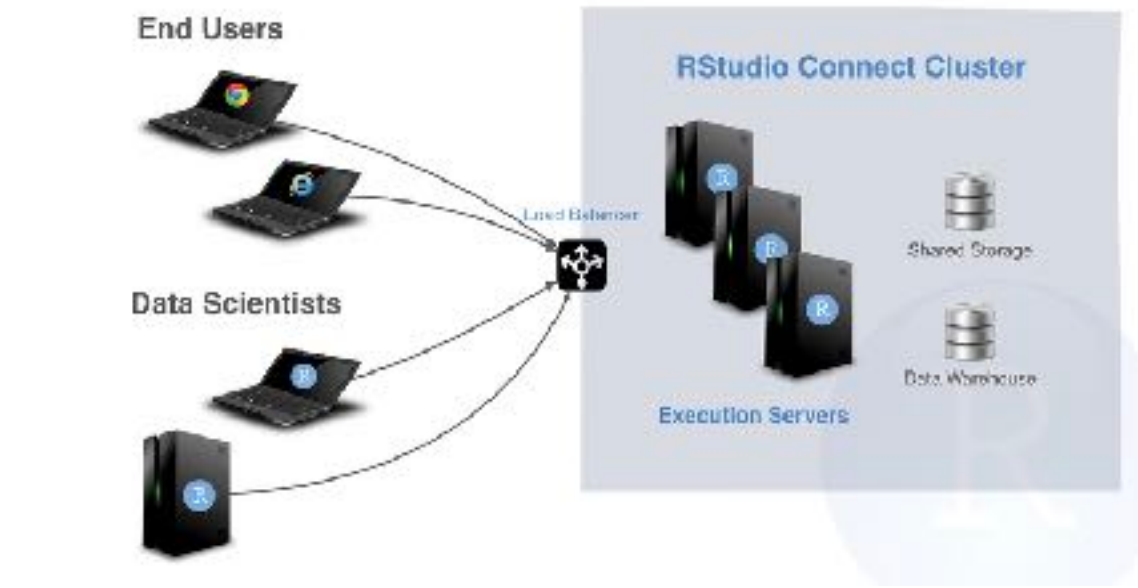
Updates

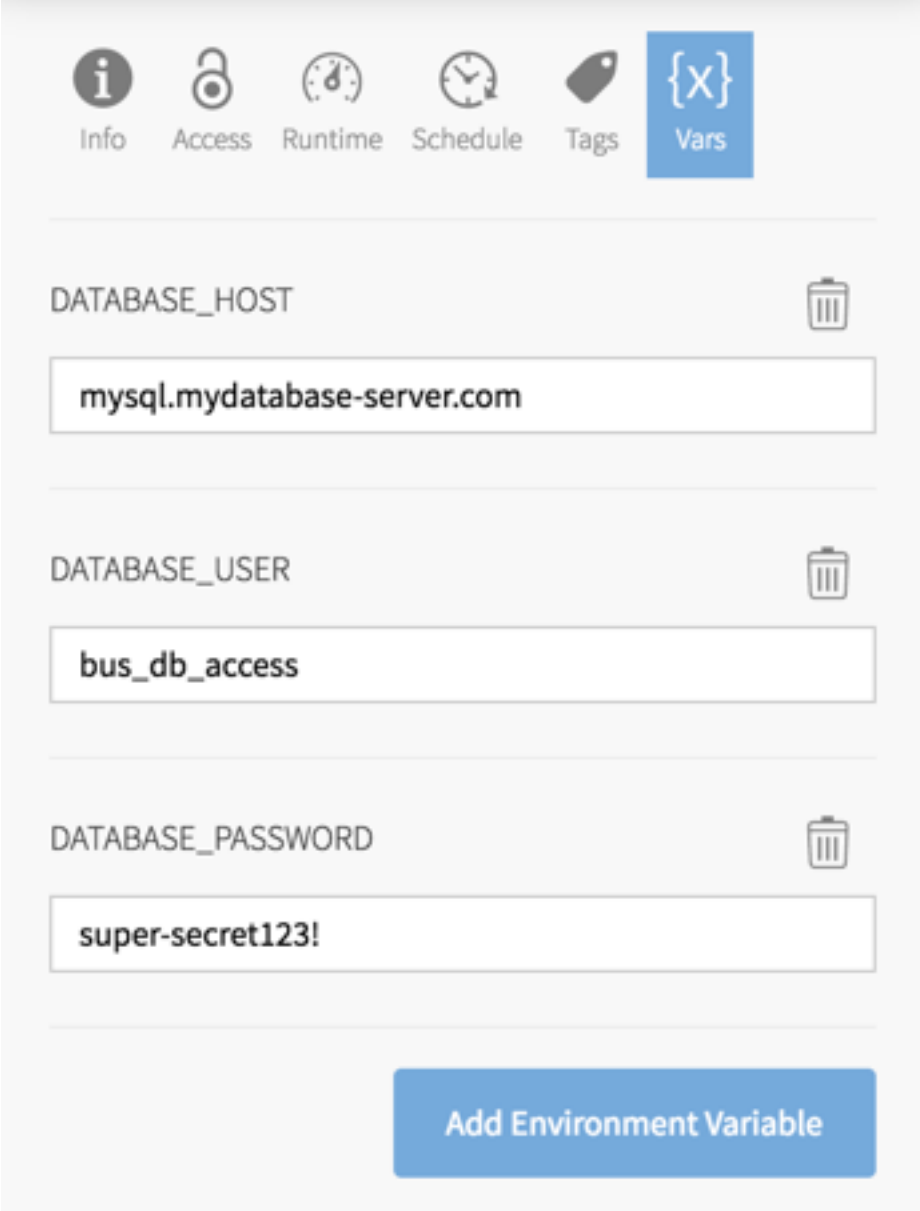
What's New?

- Load balancing & high availability
- View old versions of a report
- Floating licenses
- Kerberos
- Content collaboration & continuous integration



Upcoming…

- TensorFlow model hosting
- API to control RStudio Connect
- In-UI Management of Environment Variables
- SUSE Linux Enterprise support
- App-specific event logs
- Git integration



RStudio

Questions?

- Download & 45-day free trial:

  http://rstd.io/rsc

- Admin Guide: http://rstd.io/rsc-admin
- Slides: http://rstd.io/rsconf-rsc