

Trame

Build analytical workflows fast and simply

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Software Development Panel: Web Visualization Frameworks



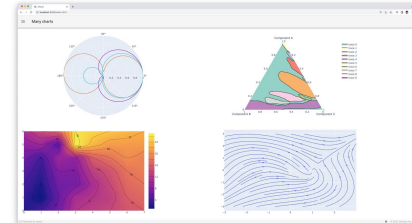
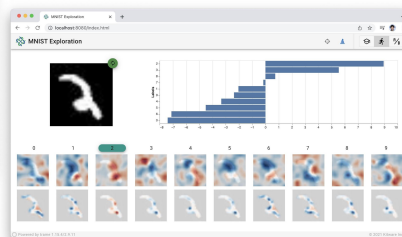
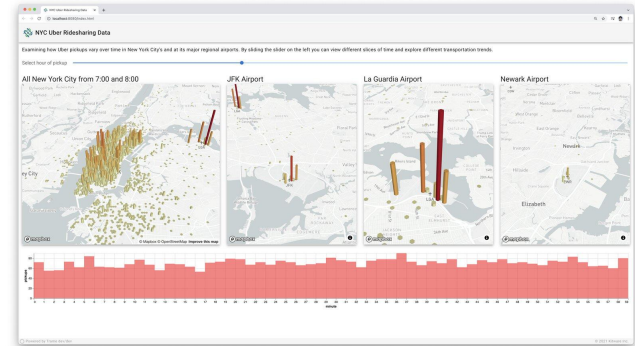
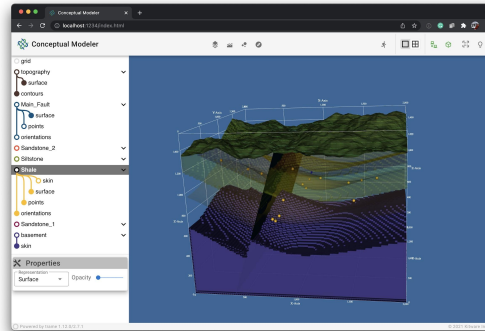
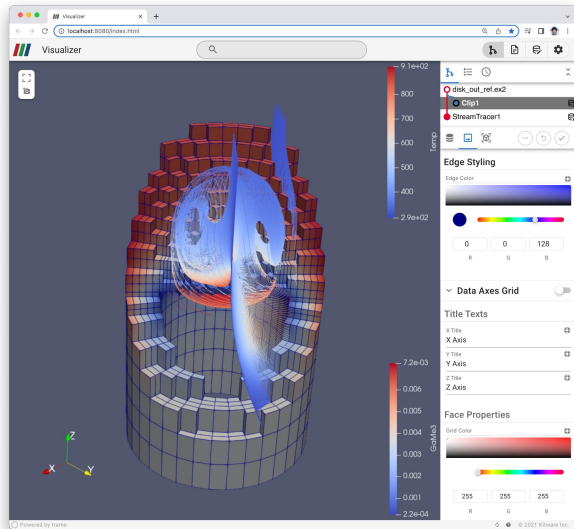
Scientific Computing and Imaging Institute, University of Utah

Thank You

- Scientific Computing and Imaging Institute
University of Utah
- National Institute of General Medical Sciences of the
National Institutes of Health: R24 GM136986

What is trame? (<https://kitware.github.io/trame>)

A Python framework that enables the rapid creation of interactive analytical applications with or without VTK/ParaView.



Creating a graphical application is now

- ◆ **Simple**

All the logic and UI definition can be done in plain Python

*simple yet
powerful*

- ◆ **Powerful**

Python offers scientific and information data visualization with capable data processing (numpy, Plotly, Matplotlib, VTK, ParaView...)

- ◆ **Ubiquitous**

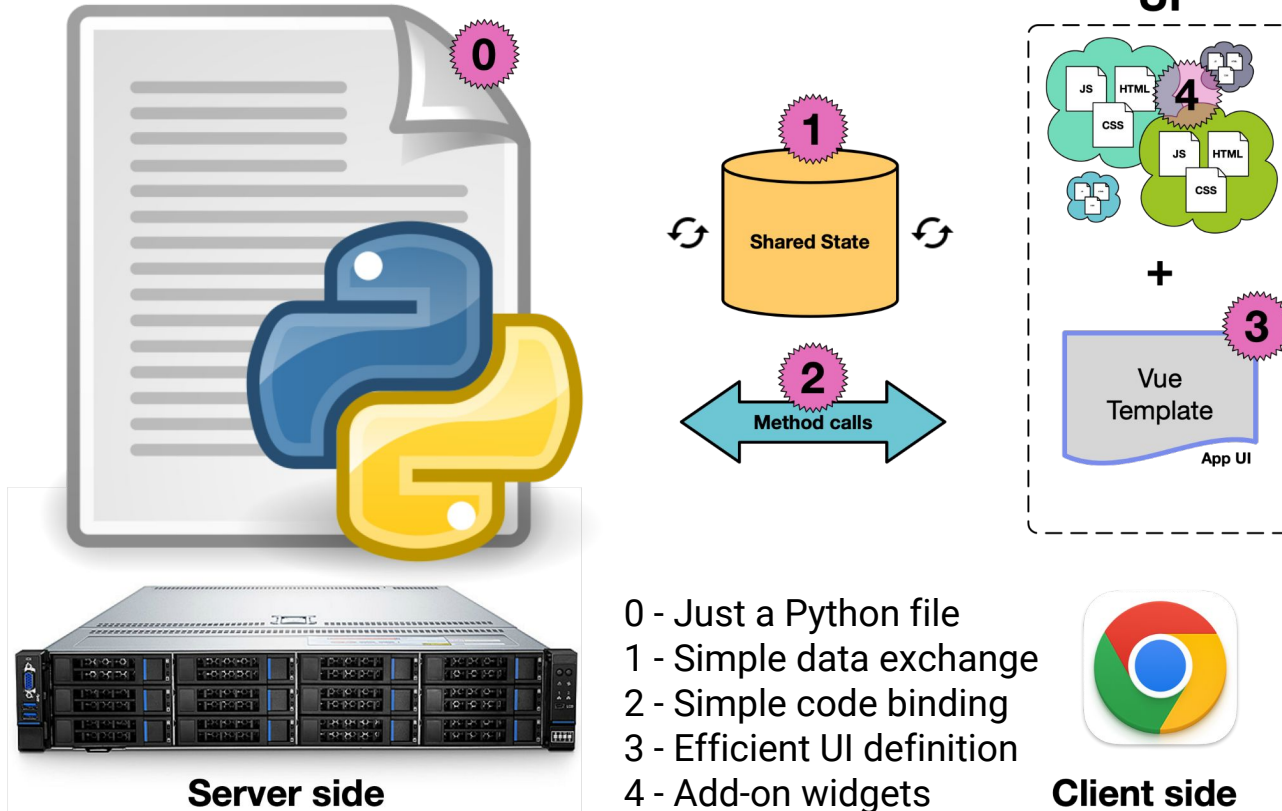
Runs on laptops, desktops, clusters, and the cloud while displaying everywhere (phone, tablet, laptop, workstation)



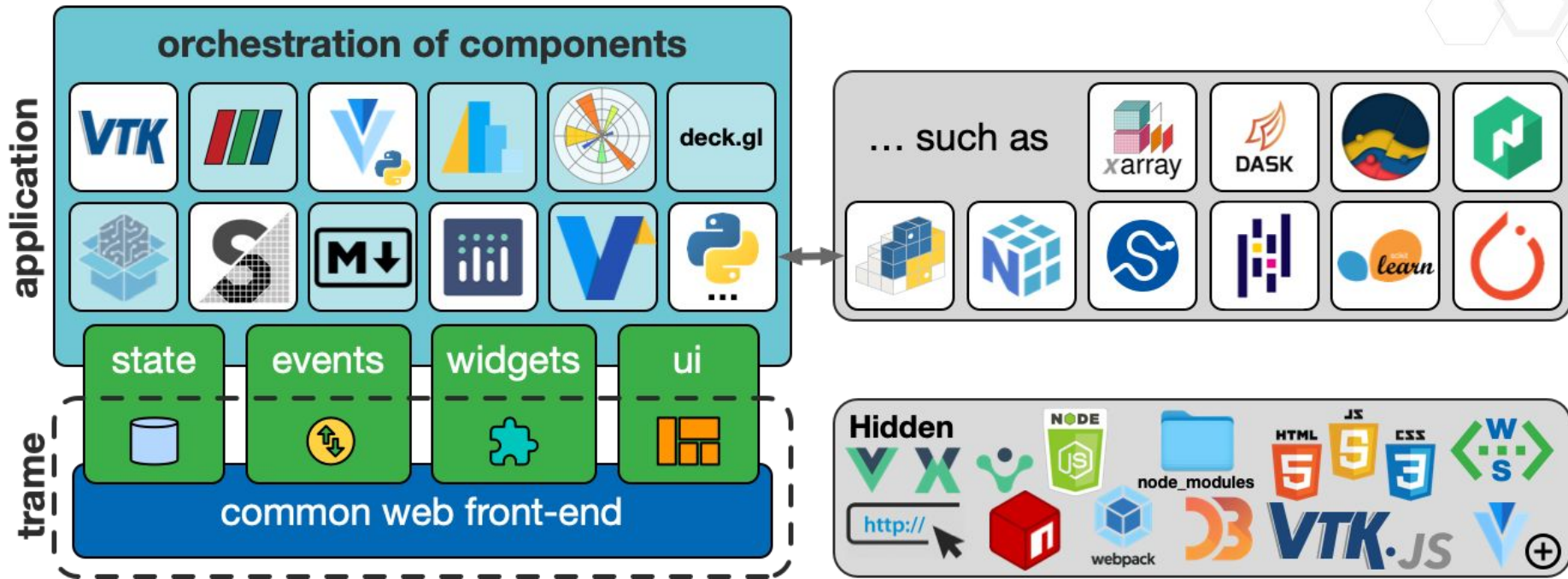
python



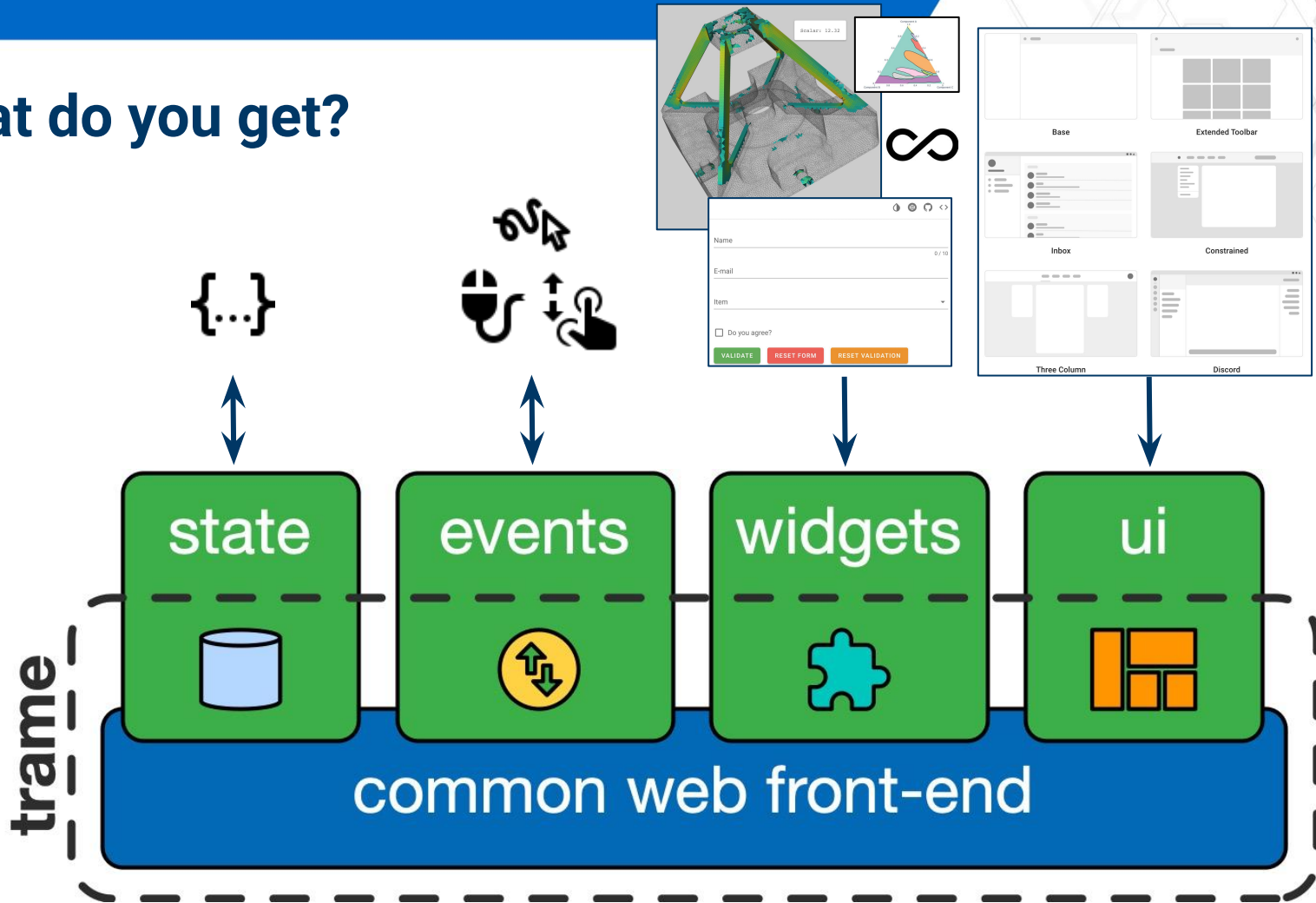
How does it work ? The big picture...



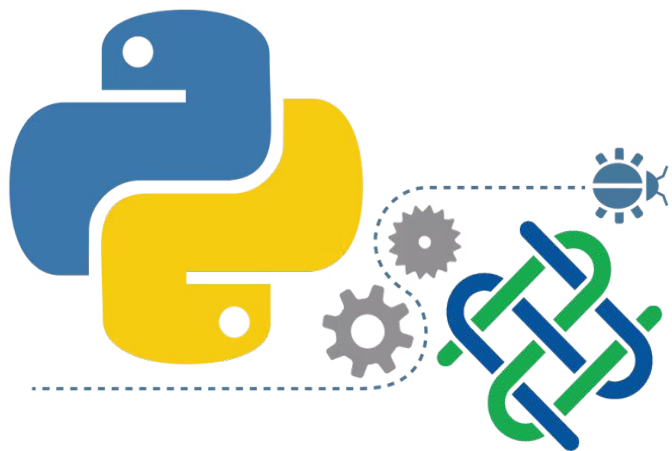
What does it mean?



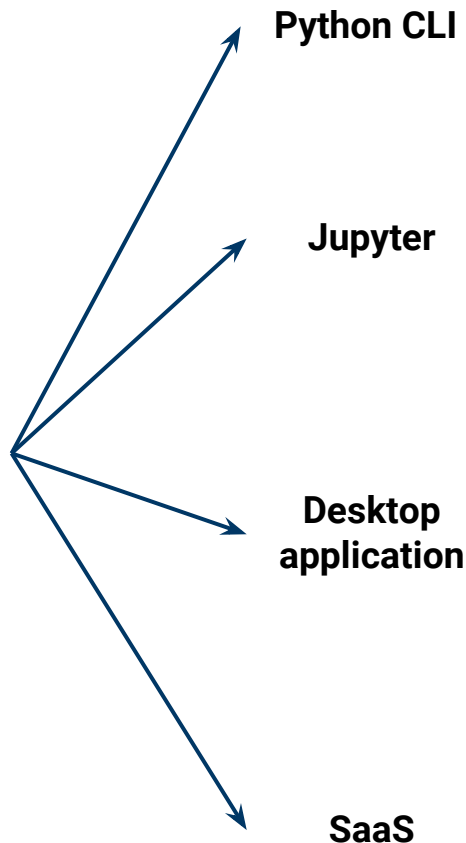
What do you get?



One app, many usage



Trame Python Application



Python CLI

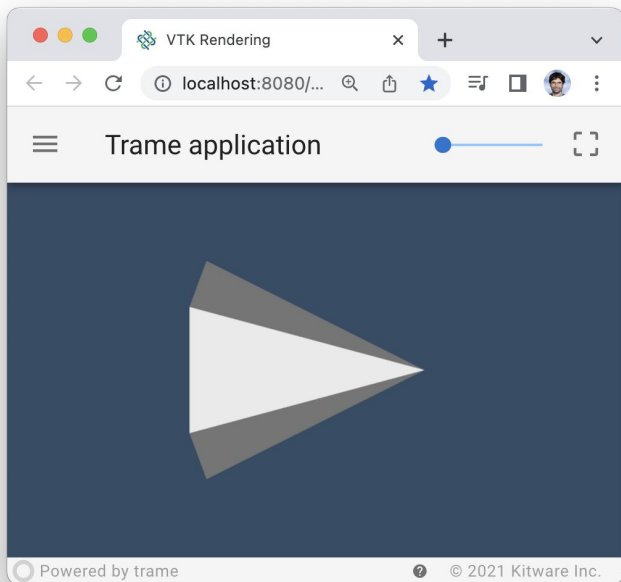
Jupyter

Desktop application

SaaS

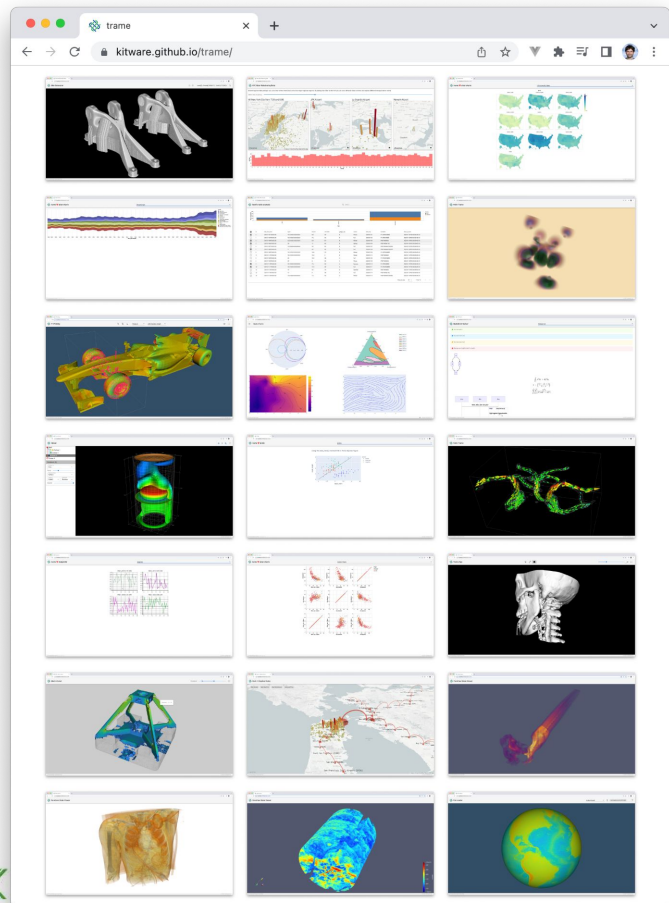


Simple example



```
client.py LICENSE UPGRADE REQUIRED
1 from trame.app import get_server
2 from trame.ui.vuetify import SinglePageLayout
3 from trame.widgets import vuetify, vtk
4
5 server = get_server()
6 state, ctrl = server.state, server.controller
7 state.trame__title = "VTK Rendering"
8
9 with SinglePageLayout(server) as layout:
10     with layout.content:
11         with vuetify.VContainer(fluid=True, classes="pa-0 fill-height"):
12             with vtk.VtkView(ref="view"):
13                 with vtk.VtkGeometryRepresentation():
14                     vtk.VtkAlgorithm(
15                         vtkClass="vtkConeSource", state="{ resolution }",
16                     )
17
18     with layout.toolbar:
19         vuetify.VSpacer()
20         vuetify.VSlider(
21             hide_details=True,
22             v_model=("resolution", 6),
23             min=3, max=60, step=1,
24             style="max-width: 300px;"
25         )
26         with vuetify.VBtn(icon=True, click="$refs.view.resetCamera()"):
27             vuetify.VIcon("mdi-crop-free")
28
29
30 if __name__ == "__main__":
31     server.start()
32
```

We have more...



https://kitware.github.io/trame

trame Documentation Discussions Issues Contact Us

Getting Started

- Introduction
- How to start
- API
- Cheatsheet
- Course
- Vue 2/3 client

Version 2

- Introduction
- From v1 to v2

Tutorial

- Overview
- Download
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Trame

Trame is available on PyPI and conda-forge. Its documentation include a [tutorial](#), a [2h course](#), [API](#), [many examples](#) along with various guides on the [main documentation page](#).

Overview

Trame is an open-source platform for creating interactive and powerful visual analytics applications. Based on Python, and leveraging platforms such as VTK, ParaView, and Vega, it is possible to create web-based applications in minutes.

What is Trame

Trame is a Python integration framework to easily build web applications with minimal knowledge of web development or technology. Before trame, building such applications typically required a full-stack developer at least a day. Now any Python developer can build applications in minutes.

trame

Hello trame

A screenshot of a web browser displaying a 3D visualization of a complex, branching structure, likely a biological or scientific model, rendered in green and yellow against a black background. The browser address bar shows the URL https://kitware.github.io/trame.

Questions?

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