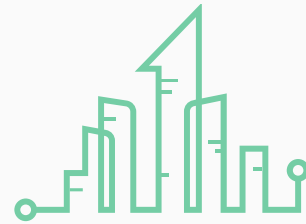


Tutorial Creating Science Gateway or HPC portal on OneSciencePlace 2024 Science Gateways Conference



OneSciencePlace®

OneSciencePlace - A Team Science Platform Where Content Meets Computing

By Science Gateways Community Institute

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Tutorial logistics

- Tutorial website: <https://tutorial1.onescienceway.com>
 - Login to the website
 - Send direct message to Mona for account/password questions (mona@sdsc.edu)
 - Accounts valid until Nov 1, 2024
- Post questions on the chat
- Tutorial material
 - Help section available on the website
 - Slides to be posted
 - Recording to be posted
- Questions

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Acknowledgements



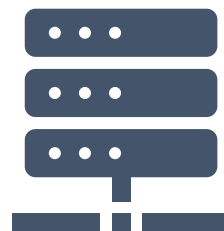
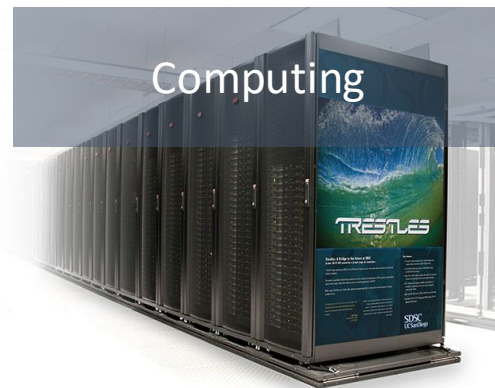
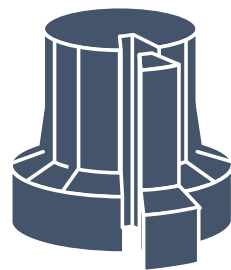
- **Science Gateways Community Institute**
- **Quakeworx (NSF-CSSI)**
- **CIPRES Gateway (NSF-ABI)**
- **SDSC, UC San Diego**

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Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Agenda

- Overview of OneSciencePlace Platform
- Apps: Running applications (Hands-on)
- Compute systems available for tutorial (Review)
- Complex apps and their UI (Review)
- Creating simple app and its custom UI (Hands-on)
- Add new compute system (Review)
- Publishing on the gateway (Hands-on)
- Discussion



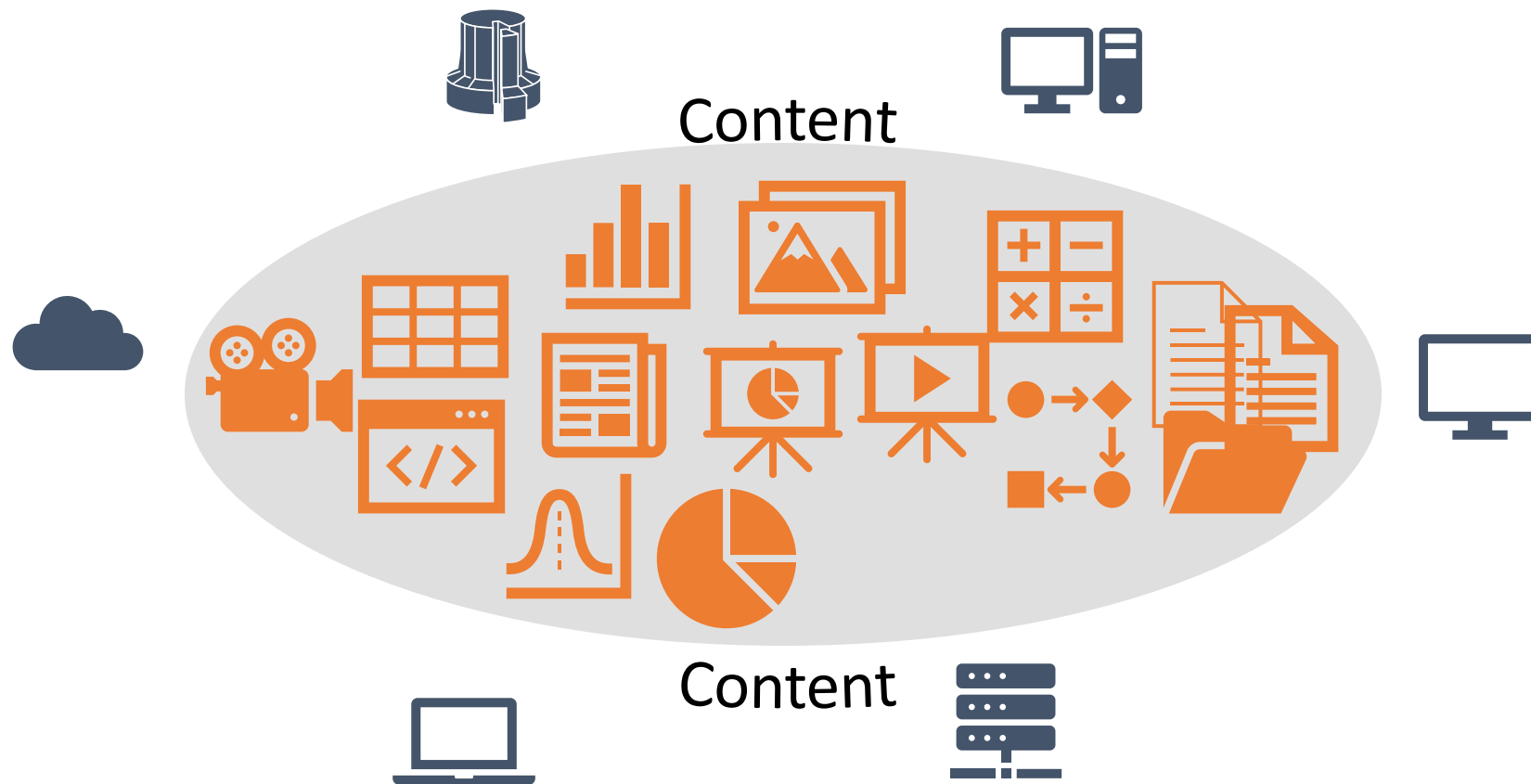
Things

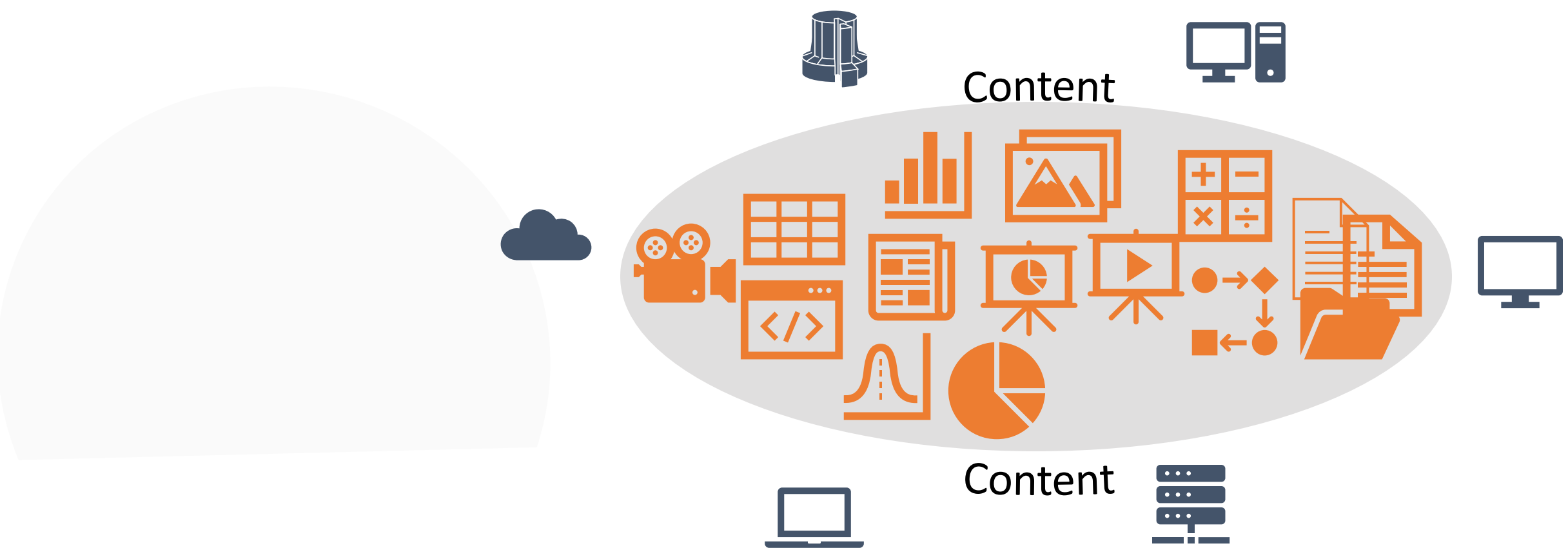
Things

Things

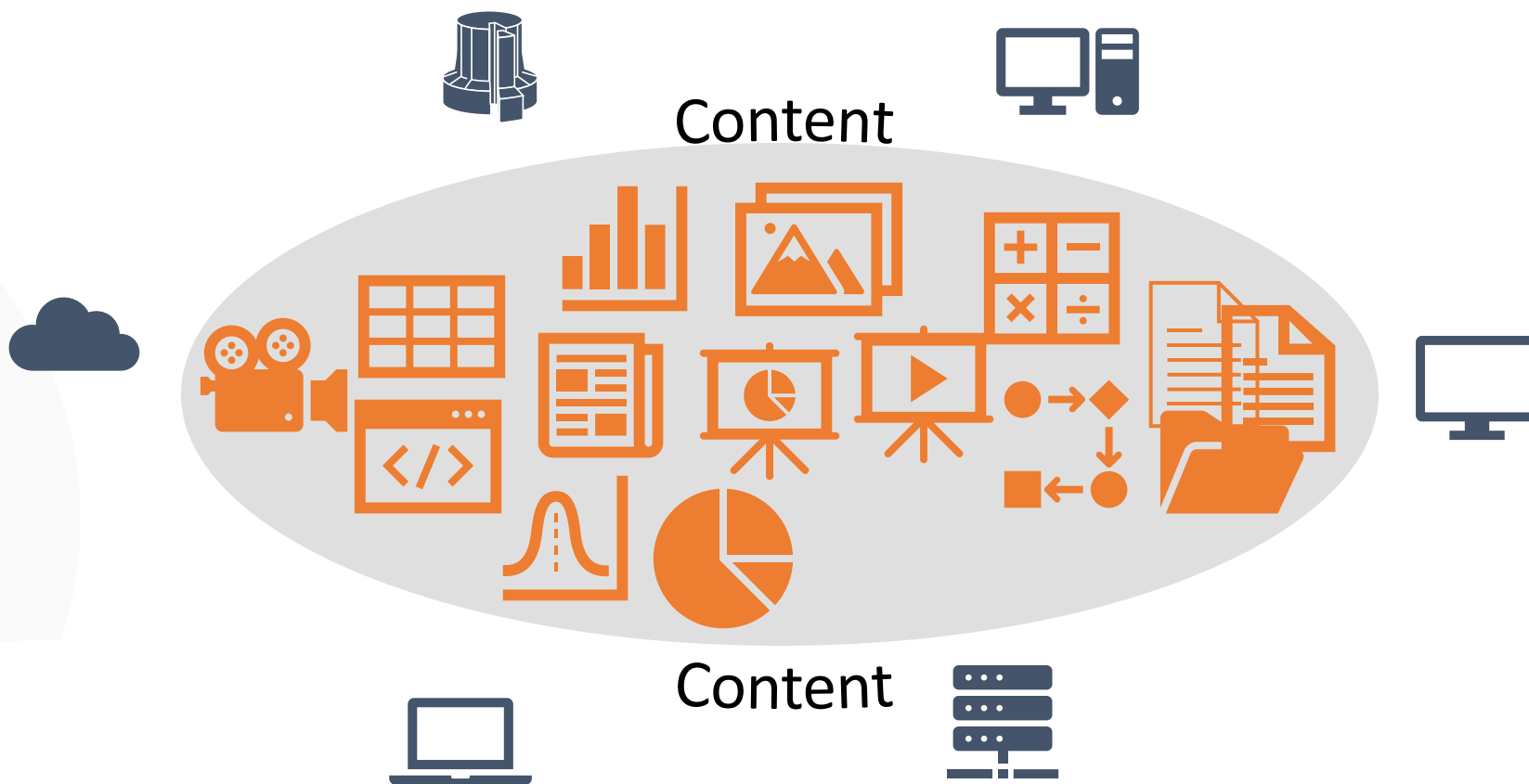
Things







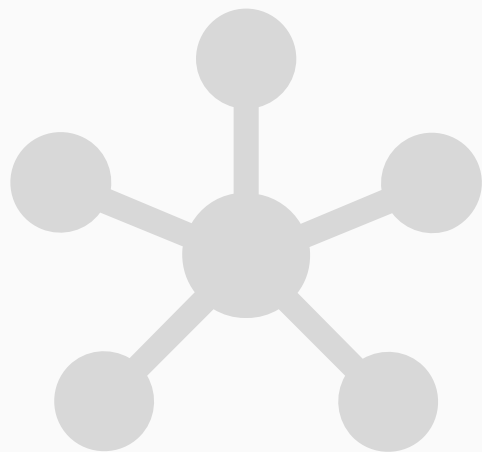
Let's Share What We Know



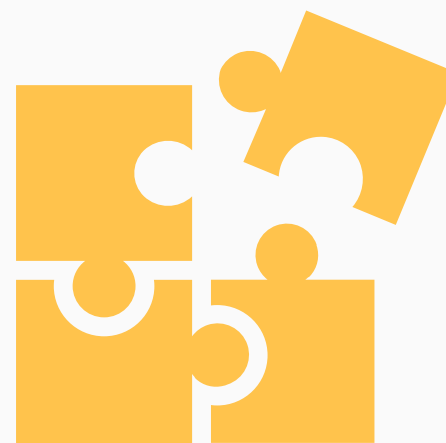
Metadata
Via
Schema.org/Me
tatags
(JSON-LD)

FAIR
(Findable,
Accessible,
Interoperable,
Reusable)

Content



Composability



OneSciencePlace is a content centric and composable online platform to transform delivery of FAIR content and computing in a single and easy to use environment.

OneSciencePlace speeds up cyberinfrastructure delivery, accelerates community building, aids in impact measurement at a fractional cost.

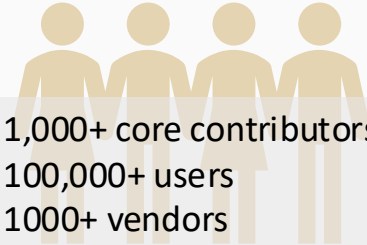
Choosing a Foundational Framework

Proven



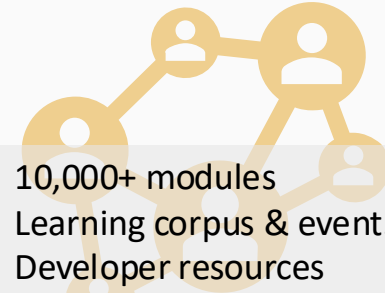
Massive adoption
400,000+ active installs
Enterprise grade - Large and complex needs
Scalable, robust & sustained

Large community



1,000+ core contributors
100,000+ users
1000+ vendors
Vibrant community

Ecosystem



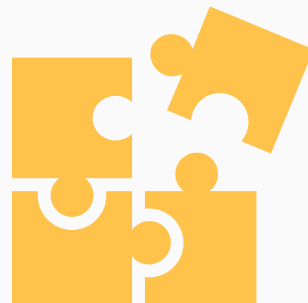
10,000+ modules
Learning corpus & events
Developer resources
Active and evolving
2023 Pitch-burg \$98K

Secure

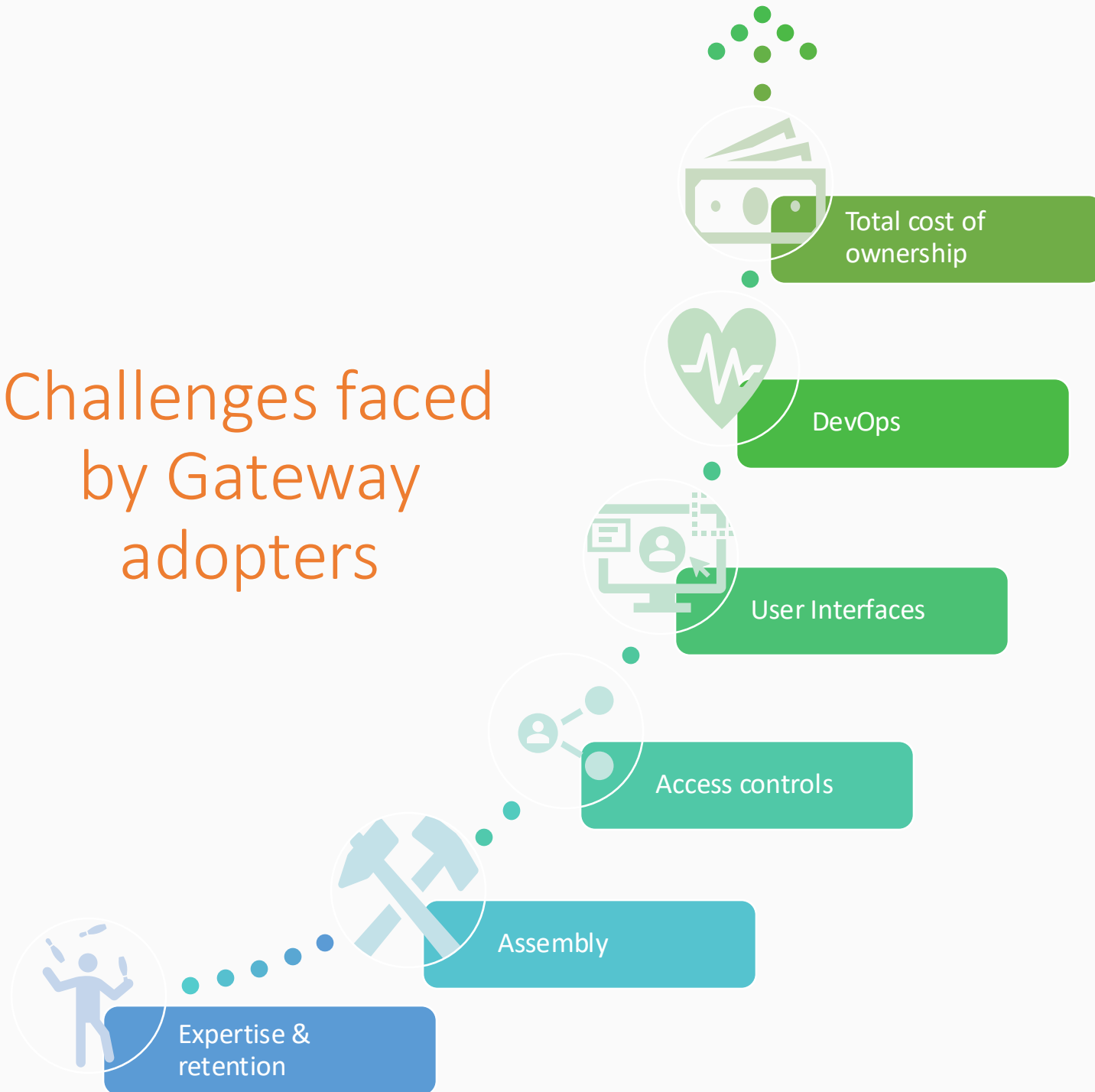


Proactive security team
Strong record
Drupal steward WAF
EU bug bounty €89,000
Sovereign funds \$300K

Composable

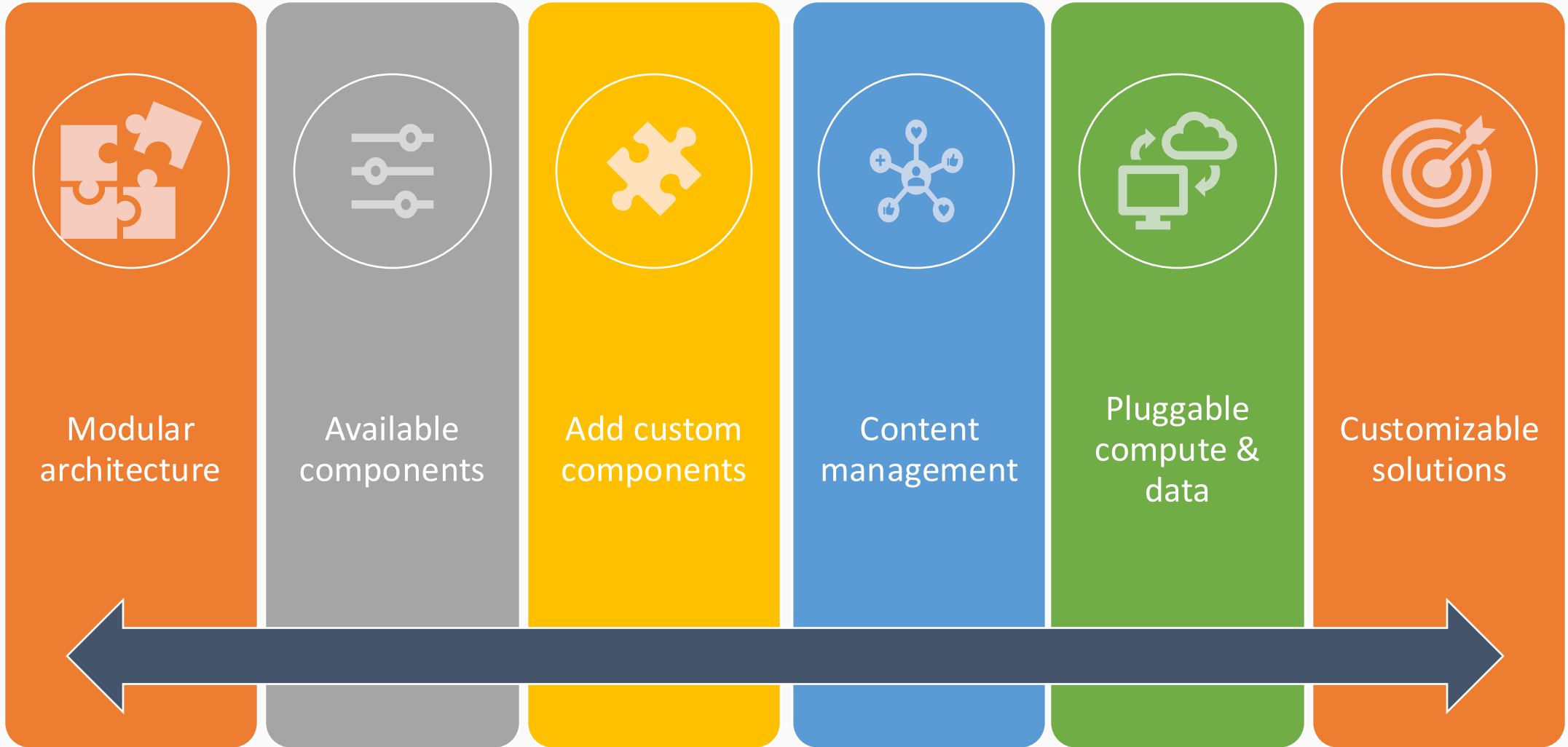


Challenges faced by Gateway adopters

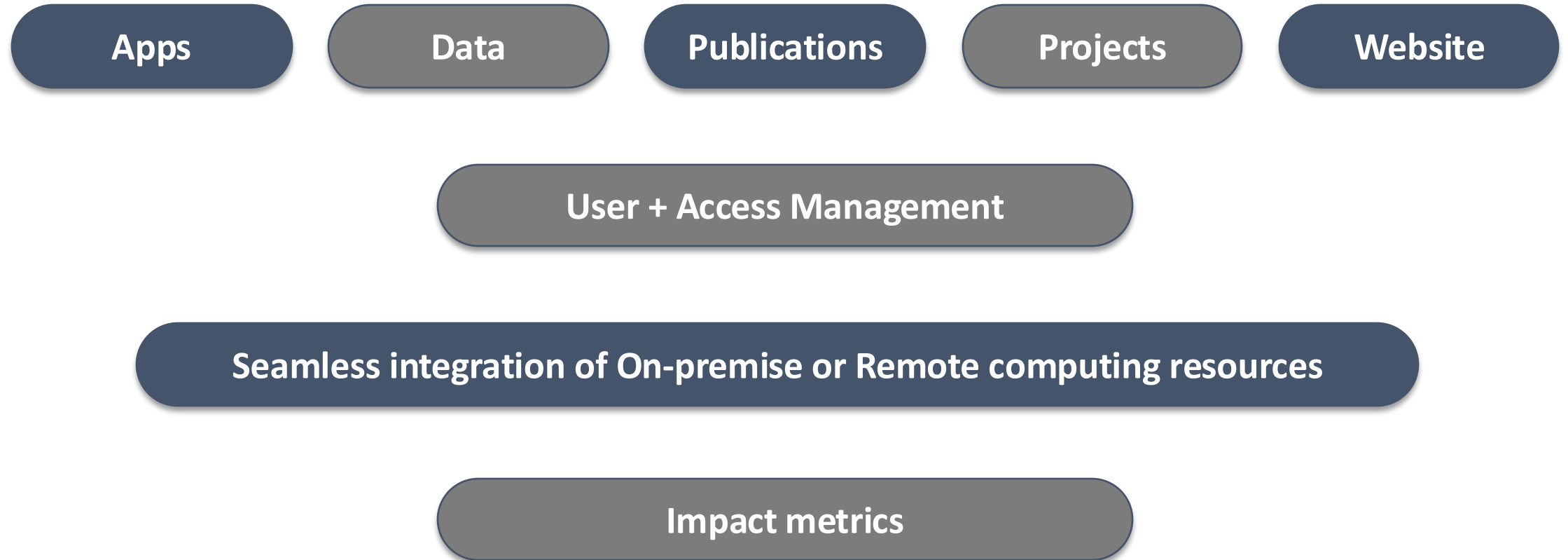




What Do We Mean by Composability?



Key elements of OneSciencePlace





OneSciencePlace Platform

Application layer

Drupal Content management framework	SeedMeLab Scientific data management	TAPIS Job management (Self hosted)	Satellite Network proxy	Services ARK, DOI, Handle CrossRef, RoR, CILogon, Globus, ...
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Backend layer

Web servers	Database servers	Search engine	Metrics engine
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Orchestration layer

CI/CD	Dev/Stage/Prod	Backups	Observability tools	Scanners	Firewall	Schedulers	Kubernetes
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Hardware layer

Compute	Storage	Network
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Established Use Cases

**Science
Gateway**

HPC Portal

Other Use Cases

Complex app

Content centered: Data repository

Knowledgebase

New challenges

Use Cases

Committed projects

Quakeworx

New science gateway
Earthquake Rupture Forecast

CIPRES

Migrating to OneSciencePlace

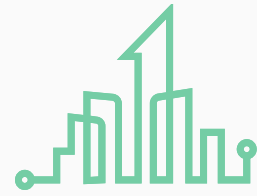
Delta Gateway

Switch to OneSciencePlace

NAIRR Pilot

Migrating to OneSciencePlace

Pending projects

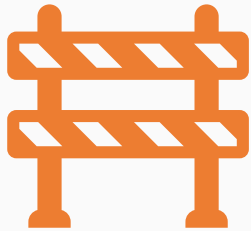


OneSciencePlace[®]



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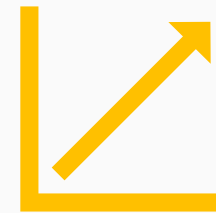
By Science Gateways Community Institute



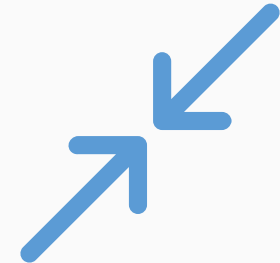
Remove Barriers



Democratize Content



Amplify Impact



Minimize Effort & Cost

Email: amit@sdsc.edu

Visit: <https://onescienceplace.org>

OneSciencePlace

Apps Publications Help My account Log out

My jobs
My draft jobs
Data
Apps
Systems
Publications
Manager

Tutorial - Creating Science Gateway or HPC portal on OneSciencePlace

Date: Sep 24, 2024
Time: 1pm - 3:30pm ET | noon - 1:30pm CT | 10am-11:30am PT
Duration: 90 mins
Audience: Beginner to Advanced
Requirements: Web browser

OneSciencePlace is a new platform to build an online and composable cyberinfrastructure that aims to transform delivery of FAIR content and computing in a single and easy to use environment. The platform could be used to build Science Gateways, HPC portals, Data repositories, Knowledgebase, and other highly customized applications. OneSciencePlace platform is built on a set of mature technologies that includes Drupal, SeedMeLab, Tapis and others. It can seamlessly interface with more than one compute resources such as Linux hosts, HPC clusters as well as data resources such as POSIX file systems or S3 object storage. Integration with Kubernetes clusters and Globus data transfer are on the future development roadmap.

This tutorial will focus on Science Gateway and HPC portal use cases and will guide attendees to explore OneSciencePlace in a hands-on manner. Each of the following aspects will be discussed/demonstrated in the tutorial with hands on component:

Agenda

user mode

Manage Shortcuts admin Admin Toolbar quick search Edit

Content Structure Appearance Extend Configuration Groups People Reports Help

OneSciencePlace

Apps Publications Help My account Log out

View Edit Outline Delete Revisions Clone

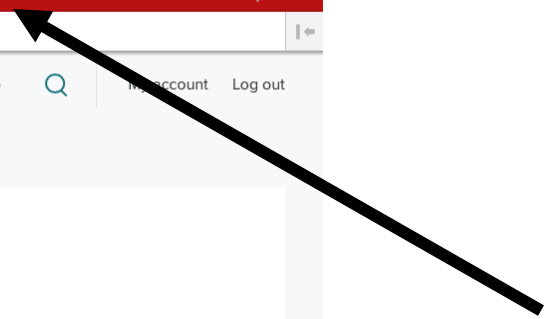
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admin mode
Red toolbar above logo



System is a hardware resource. It may be a computing or storage resource, which can represent a server or a collection of servers accessible through a single hostname or IP address. Only compute system is currently supported.

Requirements

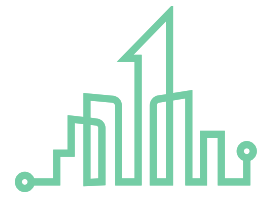
- Must allow SSH auth without passphrase
- Must not block connections (whitelist in firewall)

Apps

- Web (Jupyter, Rstudio, ...) that use single host port and single container.
- VNC (Linux desktop, Matlab, ...)
- Batch - command line executable

Requirements

- All apps must have a singular entry point which takes all arguments.
- Containers
 - Must not hard code host side port (use environment variable or argument)
 - Must not hard code volume mounts
 - VNC apps must include a VNC server and an option to set a password (env variable)

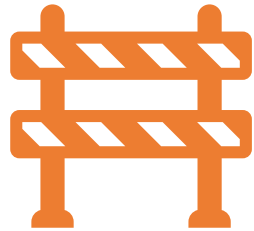


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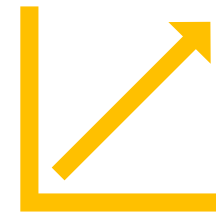
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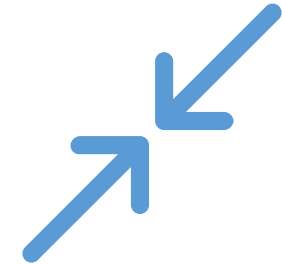
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