Solving Hybrid Cloud for High Performance Compute

TUT1195

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Securelinx

- Based in Dublin & founded 2002
- Highly technically skilled in Linux
- 10 full-time engineers
- Very strong industry reputation
- Key Industry Partnerships
- Enterprise customers all sectors

Securelinx has been successfully delivering Open Source innovation and value for customers throughout Ireland & UK for over 15 years.

Microsoft Azure

SUSE Solution Partner

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Securelinx & HPC

- Design and delivery of HPC systems to multiple customers
- Provide HPC Managed Services to Multiple Organisations
- 3rd Level Escalation Support
- Support Provided Includes:
    - Infrastructure Support
    - Application Support
    - Addressing Researcher’s Concerns

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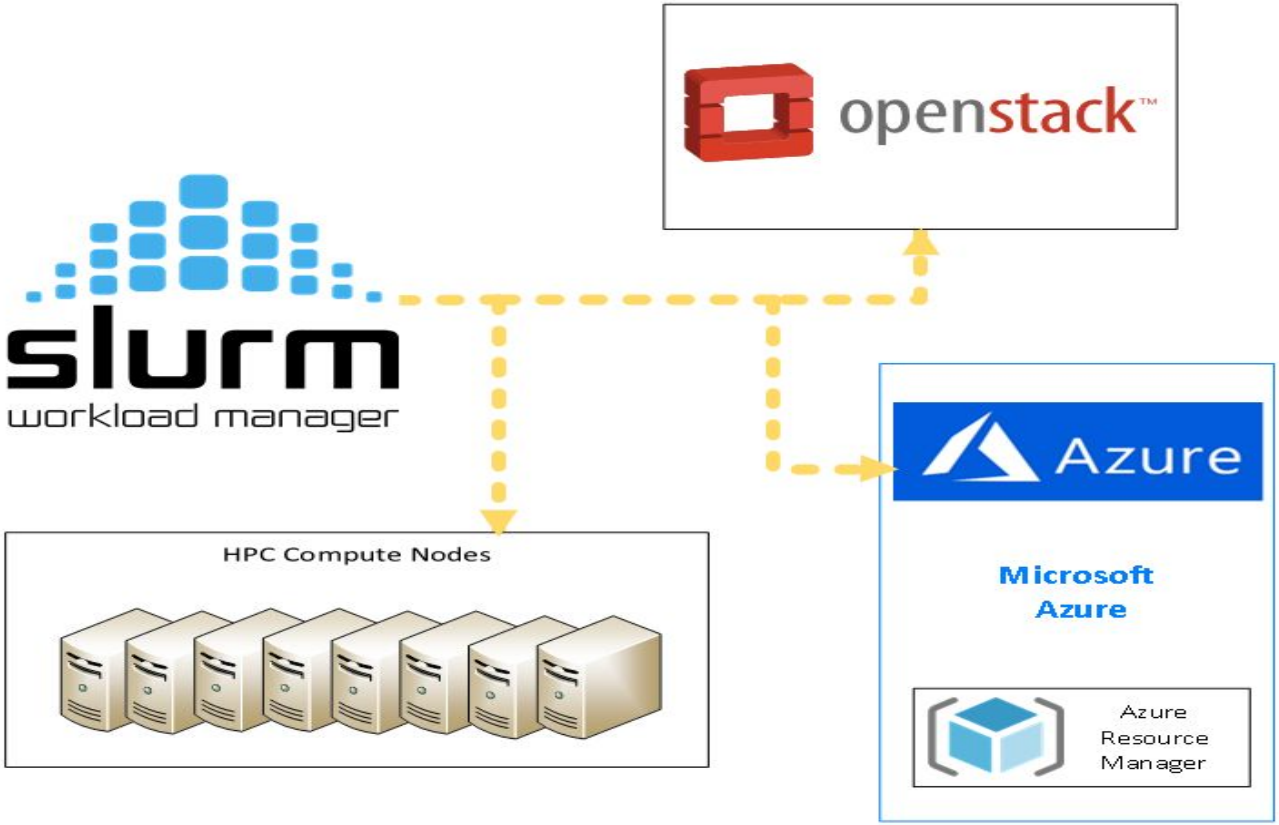
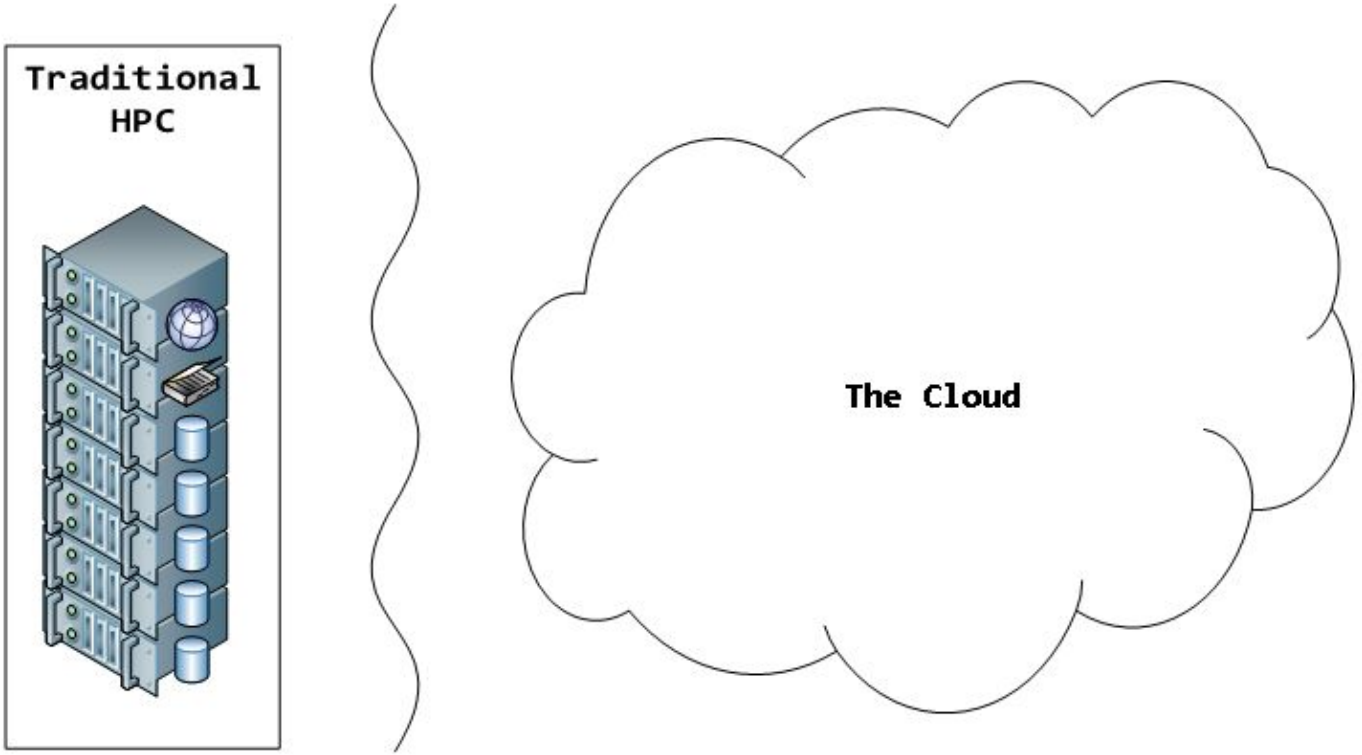
Solving Hybrid Cloud for HPC

- Initial Problem
- Tooling
- Scheduling
- Demo
- Roadmap

Proof of Concept



Hybrid HPC



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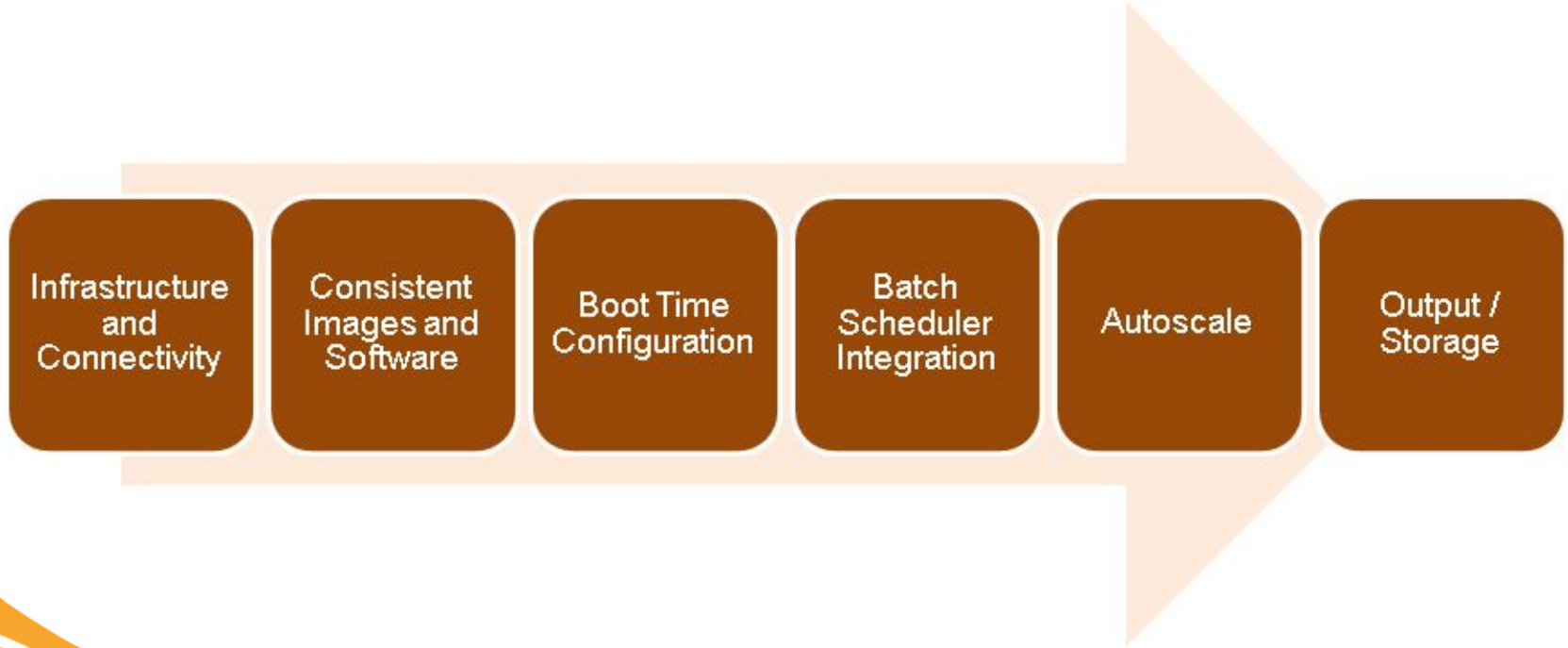
SHC4HPC



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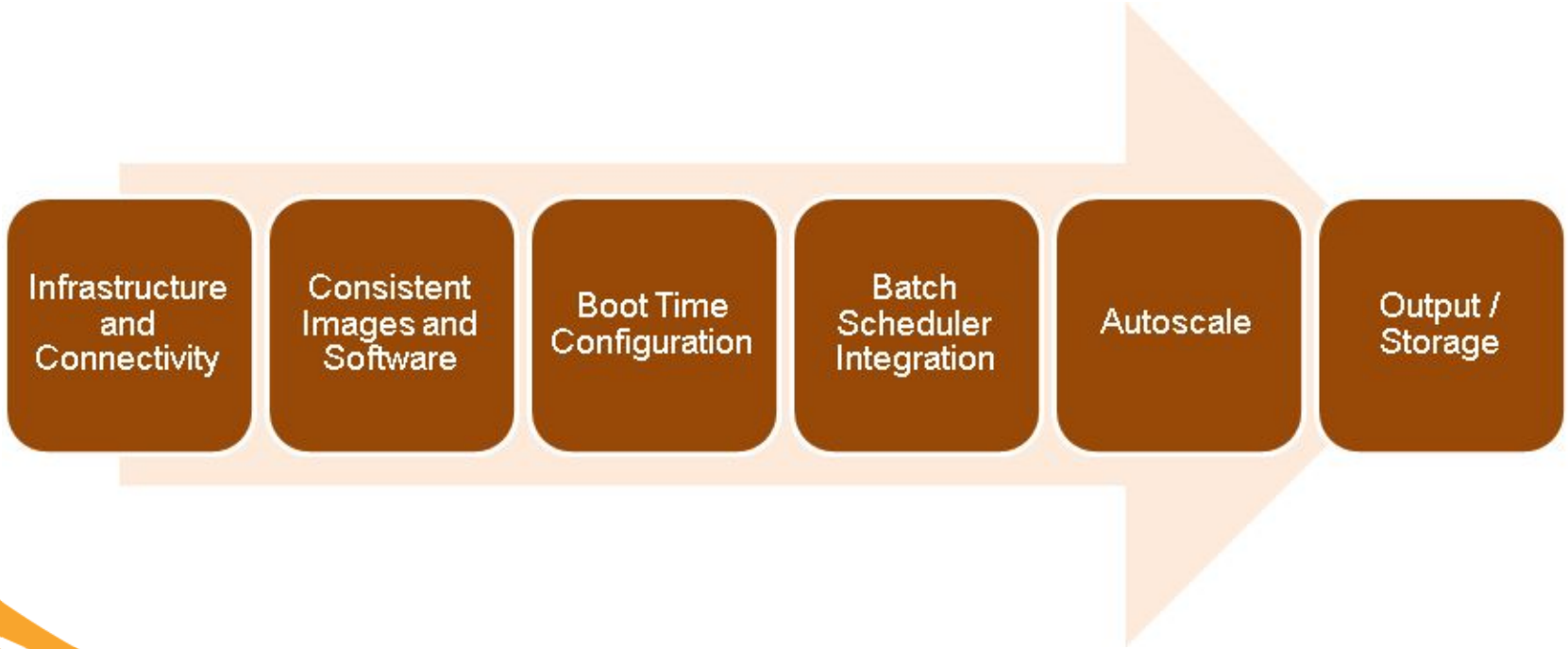
Securelinx Hybrid Cloud for HPC



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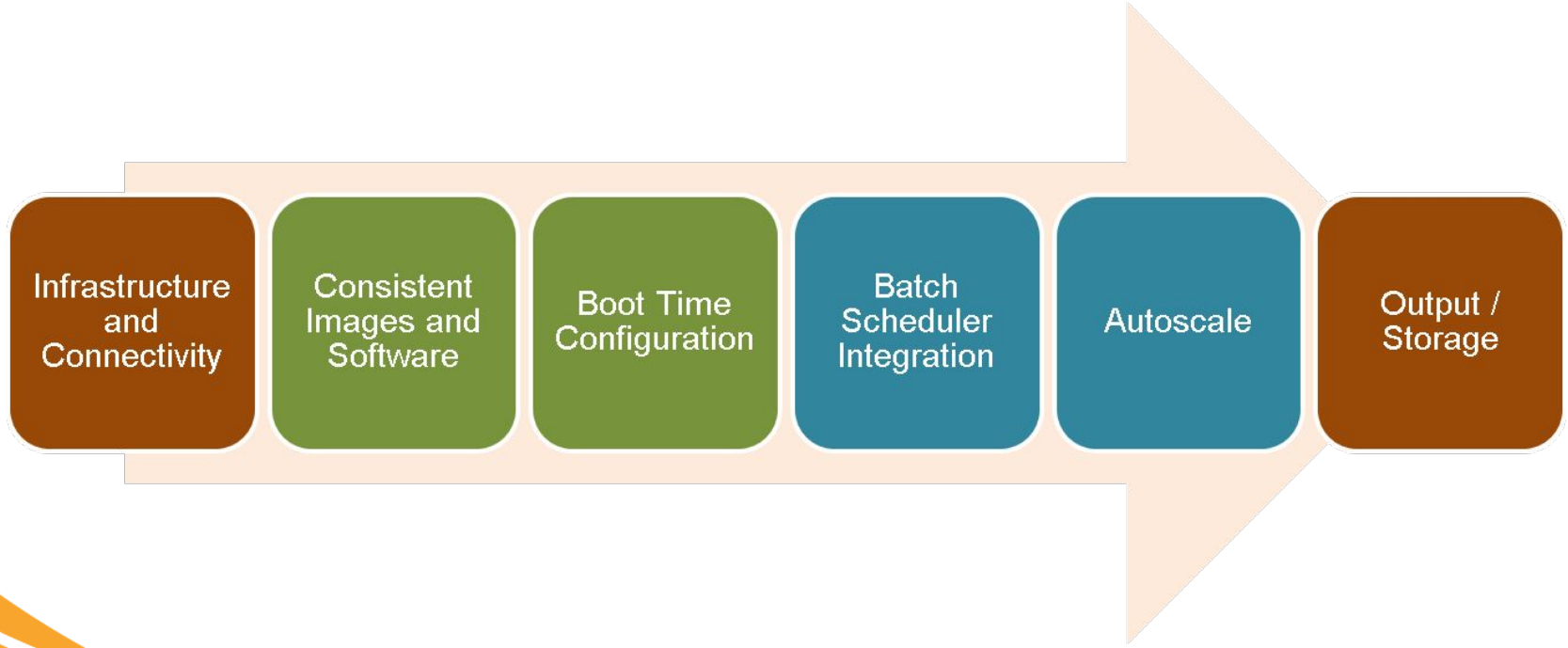
Securelinx Hybrid Cloud for HPC



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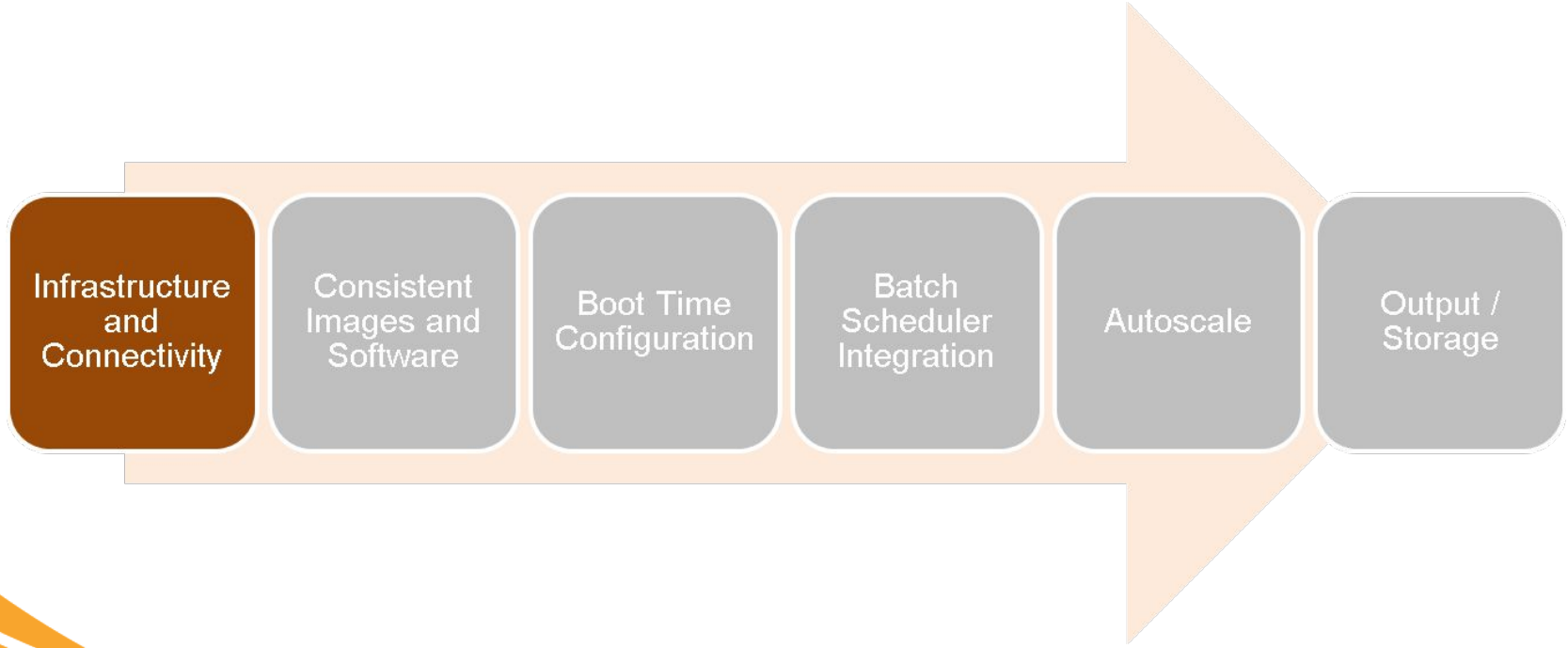
Infrastructure



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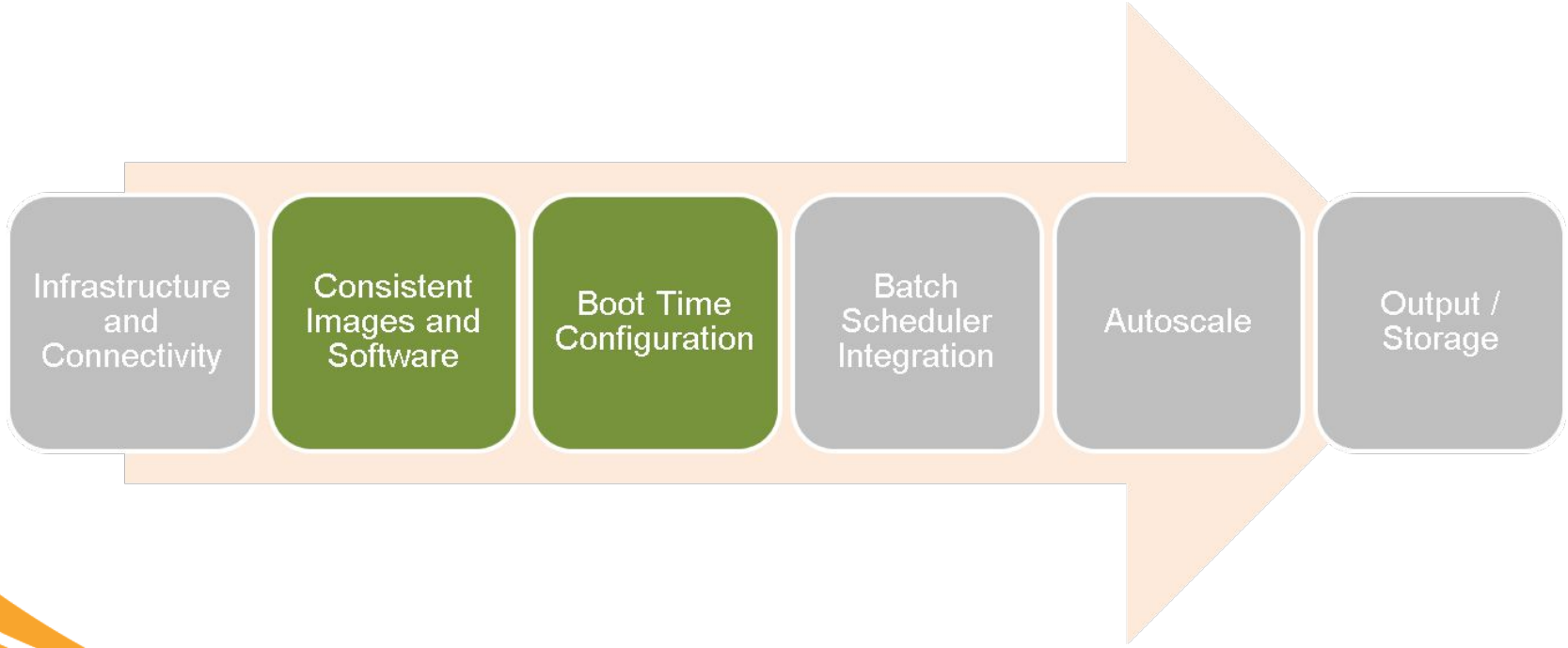
Infrastructure

- Implementation will be specific to source and destination infrastructure.
  - Follow Best Practises
- Understand Connectivity -
  - Where are the services all resources need access to eg;
    - Authentication
    - Scheduler
    - Orchestration
    - Storage

Images



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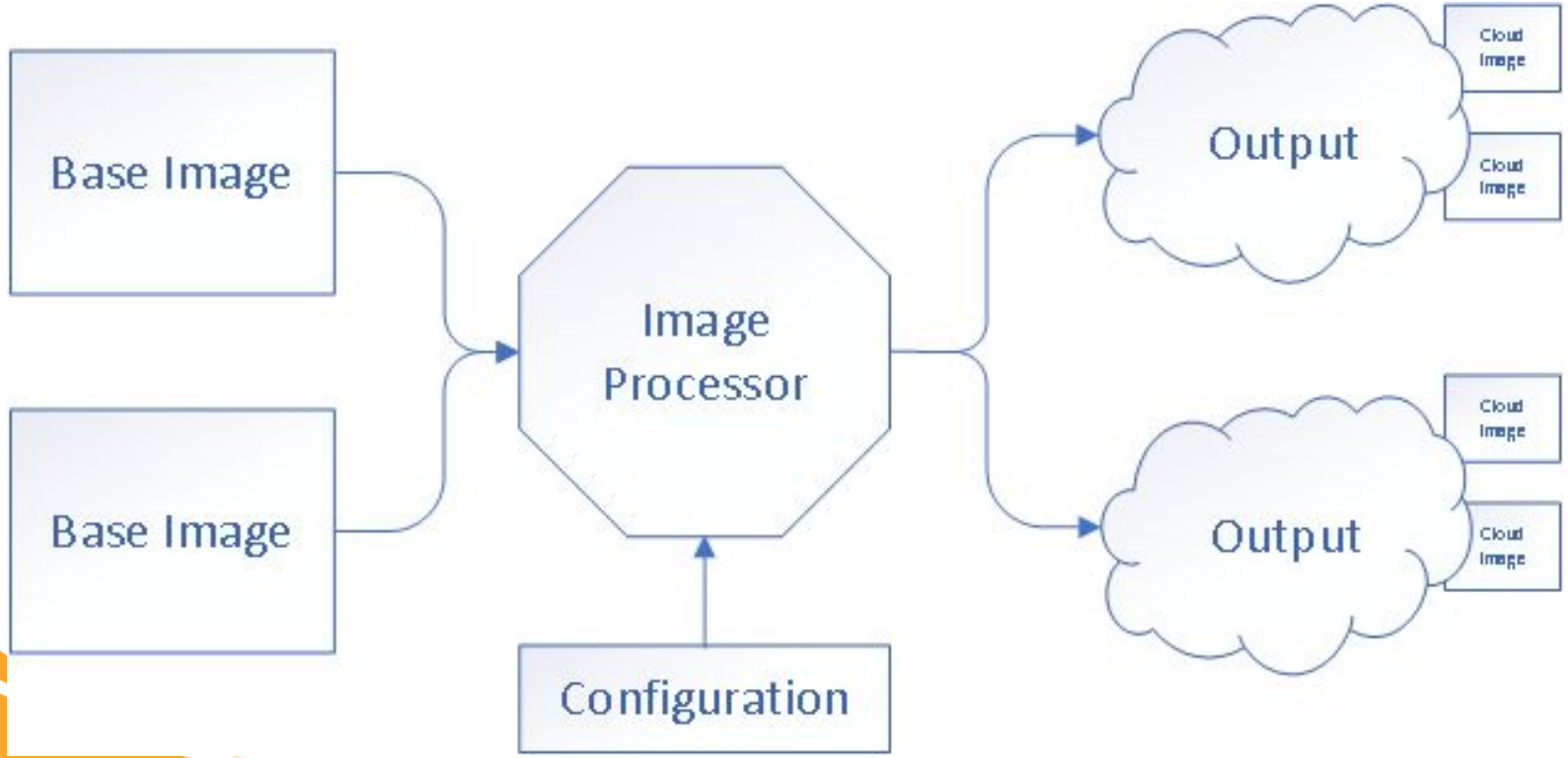
SHC4HPC - Image Pipeline



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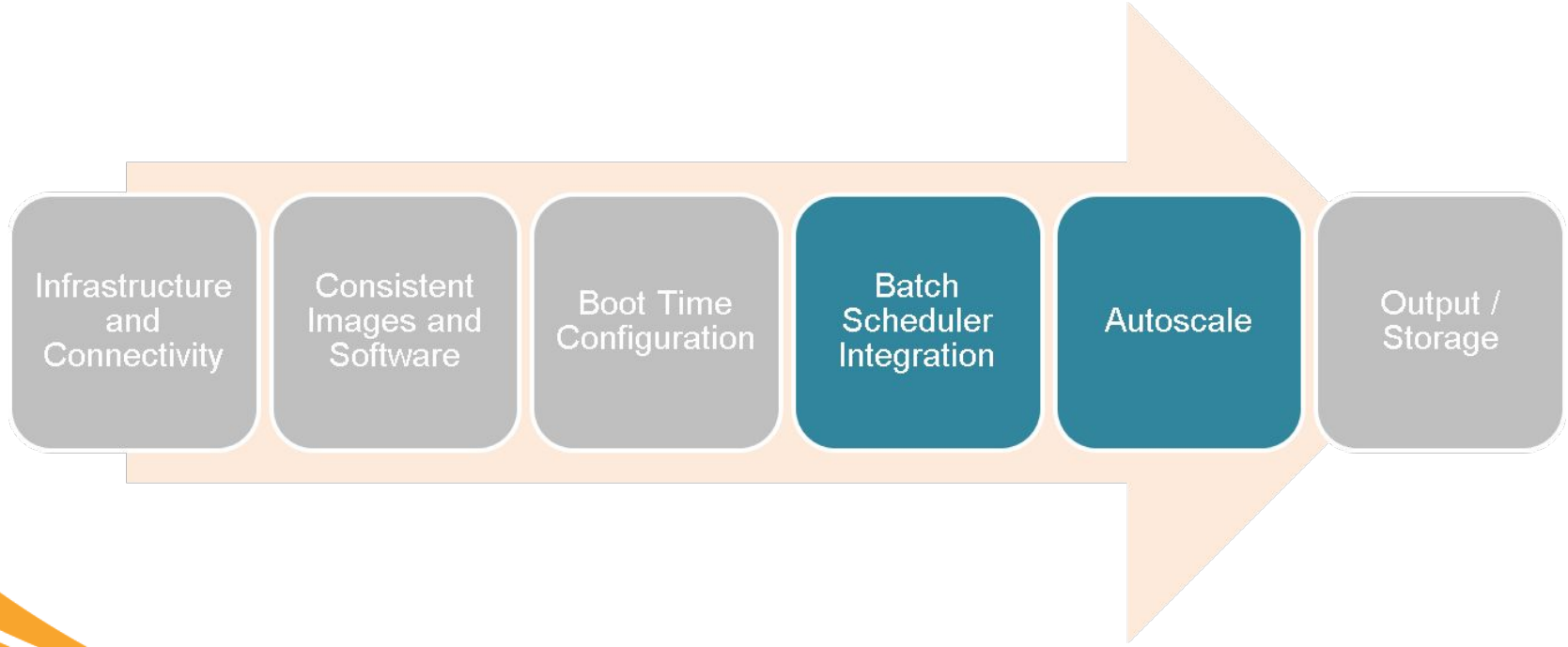
Scheduler



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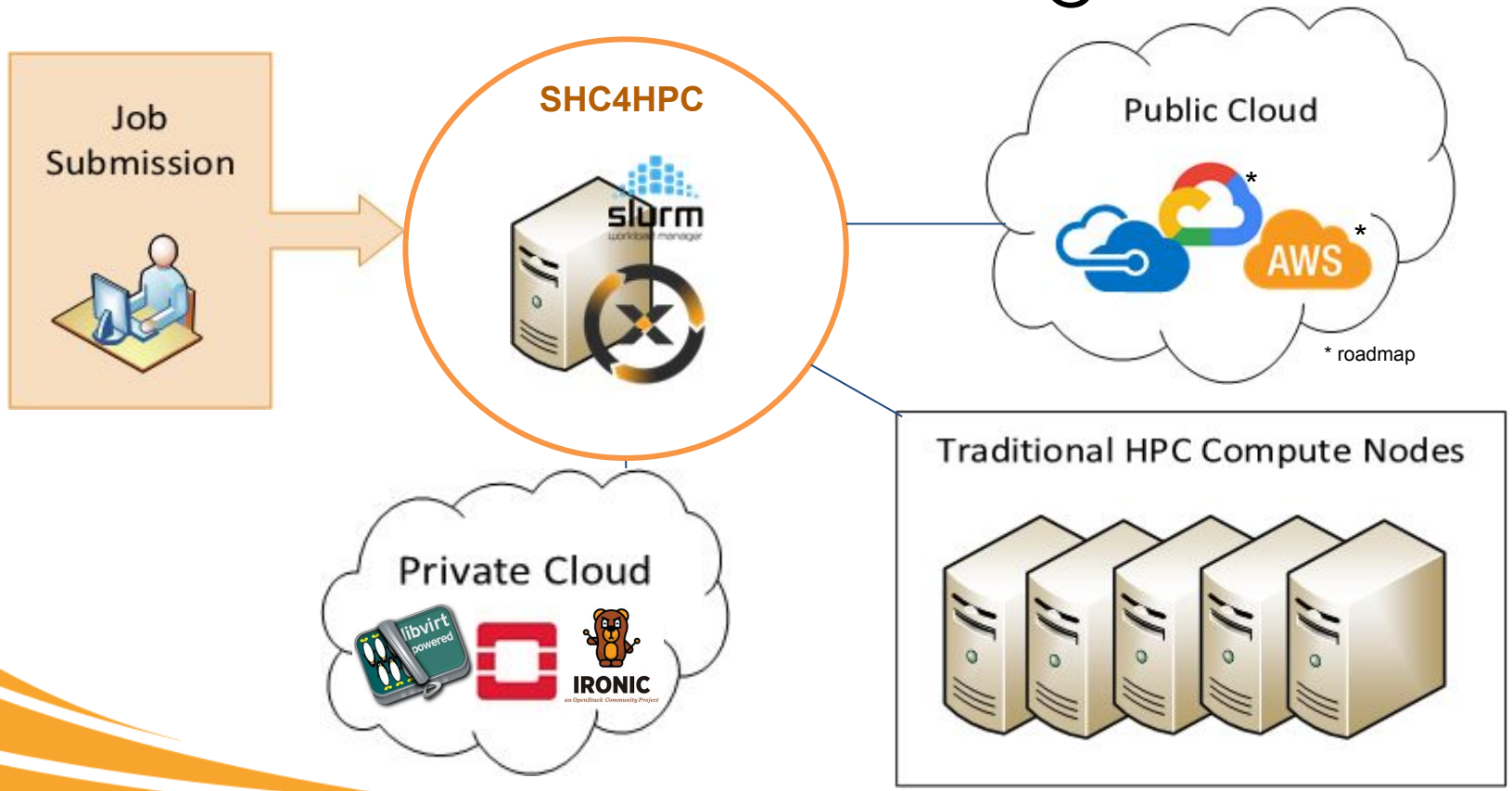
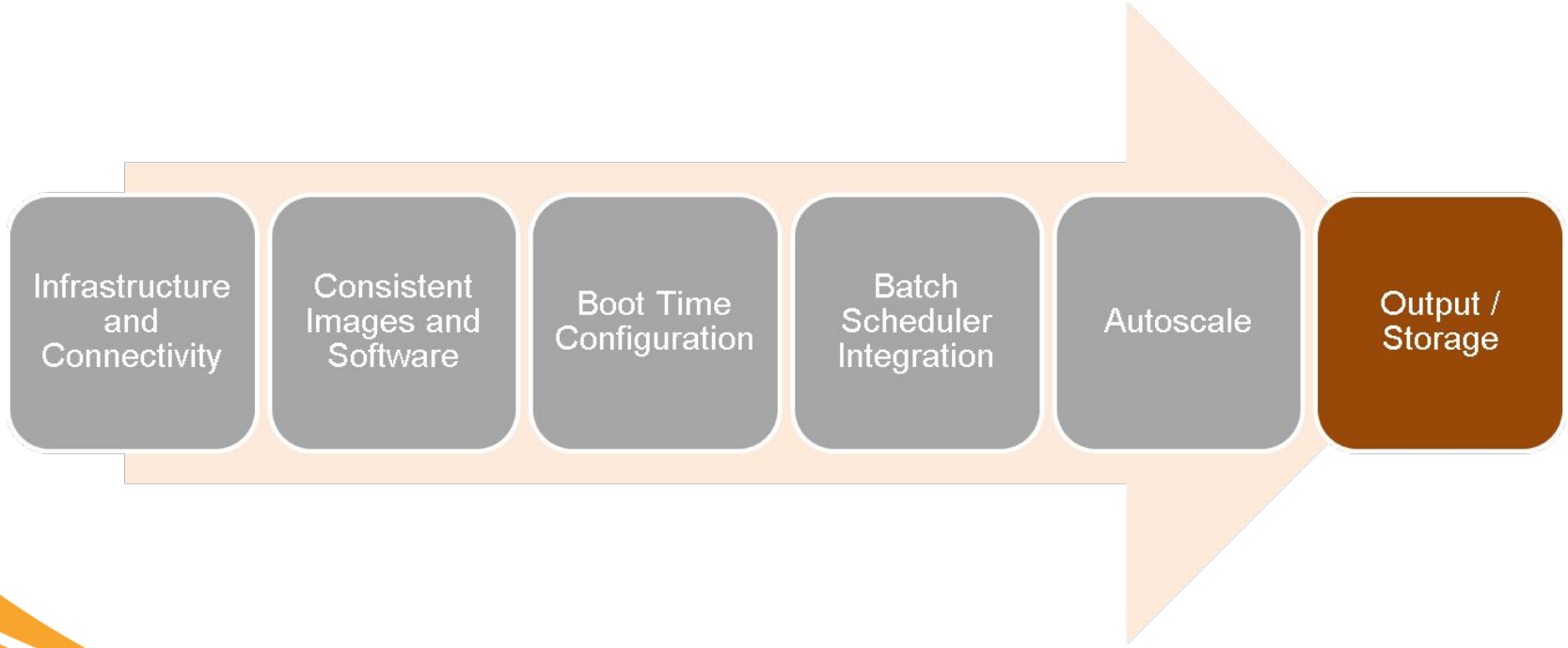
SHC4HPC - Batch integration



Demo

Storage



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Storage

- Work with users so they understand that using the cloud resources means for there jobs
- Ideas:
  - Multiple Blob Storage Accounts Extend Performance
  - Directly connect users to on prem storage
  - Build ephemeral HPC storage in the remote cloud

Summary

OS

- Linux

Clouds

- Azure
- Openstack
- Bare metal
- KVM
- Native

Batch

- SLURM

Orchestration

- Build + Scripts

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Roadmap

SHC4HPC Gen 2

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Roadmap

OS

- Linux

Architecture

- **Open Source**
- **Separate Service**

Clouds

- Azure
- **GCP**
- **AWS**
- Openstack
- Bare metal
- KVM
- Native

Batch

- SLURM
- **PBS / Moab**

Orchestration

- Build + Scripts
- **SaltStack**

Questions?

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