sodacon
— Global 2021 — July 13-14

User-Defined Cloud Workflow Policies

Paul Speciale

Chief Product Officer, Scality

soda foundation

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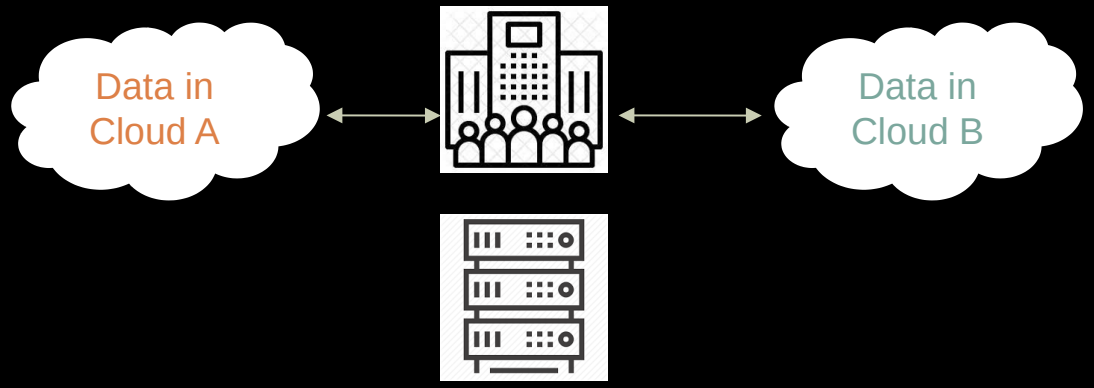
Context

- Engaged with customers for nearly 4 years on cloud data management solutions
- They express an incredibly wide range of use-cases and requirements
- Complexity of solution deployment is very high
- Challenge: how to provide solutions for these requirements in a simple manner?

What kind of use-case requirements have we heard?

- Data migration from enterprise on-premises to cloud or cloud-to-cloud
- Replication of data between on-premises and cloud(s) and now EDGE
- Move my data between storage classes or geographic location
- Move data based on time or cost criteria
- Move data from on-premises to cloud and increasingly the other way around (!)



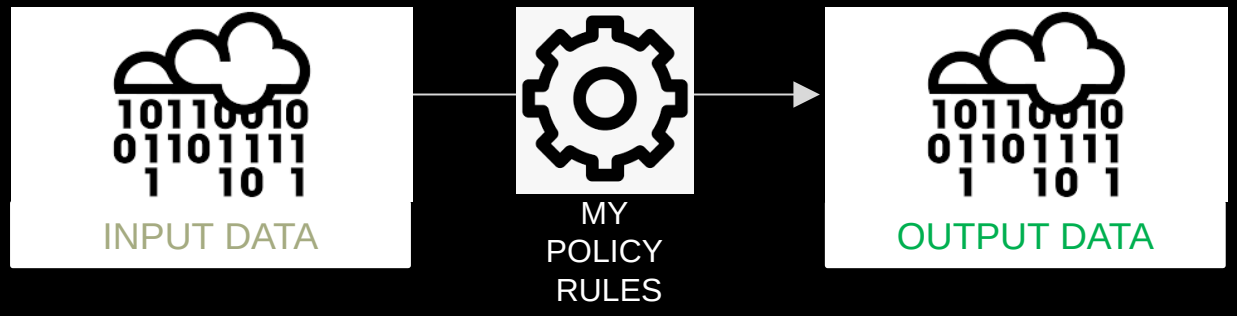
Factors that increase the complexity of cloud data management

- Variety of data types: legacy file data AND new cloud-native object data
- Data everywhere: data increasingly dispersed, in silos, clouds and now on the edge, lack of visibility
- Skill sets: Admins must increase their breadth of knowledge of clouds & APIs
- Data intelligence: building for the future, data insights, extensibility of metadata

Data management across systems and clouds is becoming unwieldy and too complex for users

Plus: need to solve business and vertical-specific issues

- Will it work with my application?
- What types of policies can I apply?
- Can I add custom metadata tags to my data?
- Can I insert my own policy rules, or is it too complex?
- Can I use cloud services as part of my rules?
- What about metadata driven decisions?
- What is the right API for expressing policies? AWS S3, an extension or something else?



How have we simplified this problem so far?

Focus data management policies for 3 key use-cases

On-premises to cloud archive

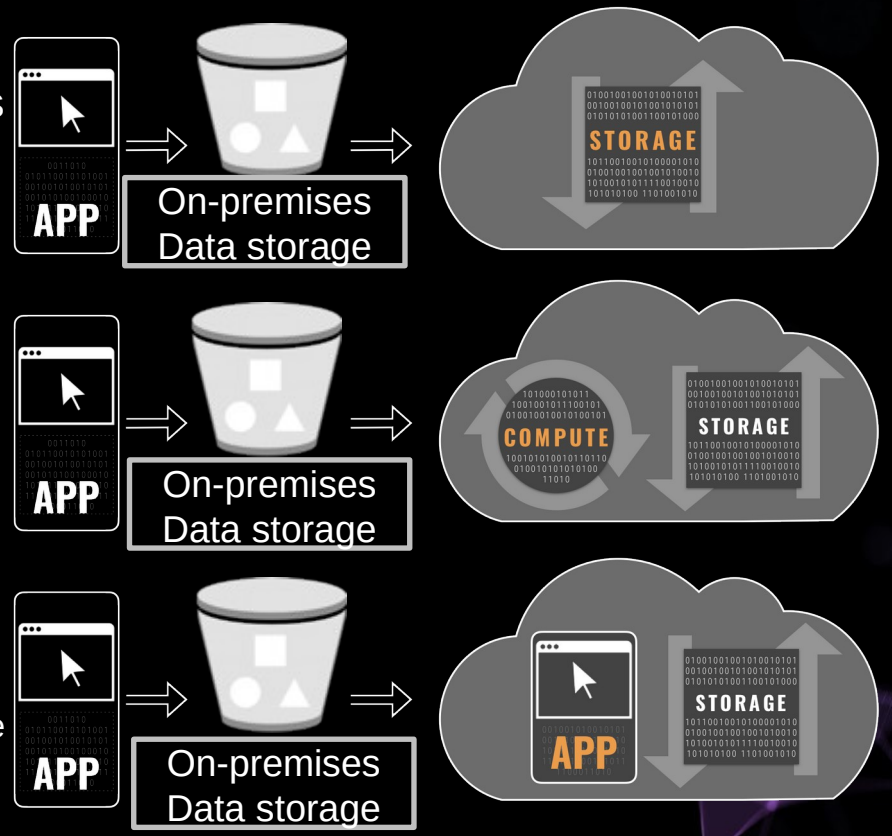
- Offload cold/dormant data to cloud long-term archives (Azure Cold Storage, AWS Glacier or other)
- Solution: Lifecycle policy- move data on data age/date rules

On-premises to cloud for compute bursting

- Move data to cloud compute services: AI/ML, analytics, transcoding, CDN, Video Indexing & others
- Solution: replication or tiering policies - based on tags/filters

On-premises to cloud for Disaster Recovery (D/R)

- Maintain a copy data in cloud for disaster recovery & business continuance in the event of site failure or outage
- Solution: continuous replication to cloud(s) to maintain low RPO



Zenko Cloud Data Management Today

Cloud replication & lifecycle management policies

Policies for multi-cloud data management:

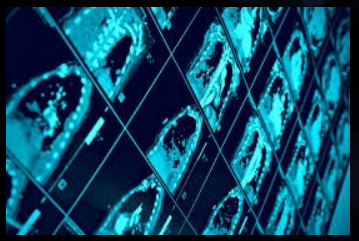
- Global namespace across multiple systems and clouds
- Metadata search across all backends
- Asynchronous data replication (1-1 or 1-Many CRR)
- Data expiration & lifecycle tiering across all backends

Supported backends:

- Big 3 clouds and several regional/specialized cloud services
- NAS over NFS & SMB
- Object stores over S3

Examples of customer-defined data management policies

- Healthcare medical imaging
  - researchers need a policy that examines medical images for personally identifiable information (PIIA), remove patient names/notes on each image

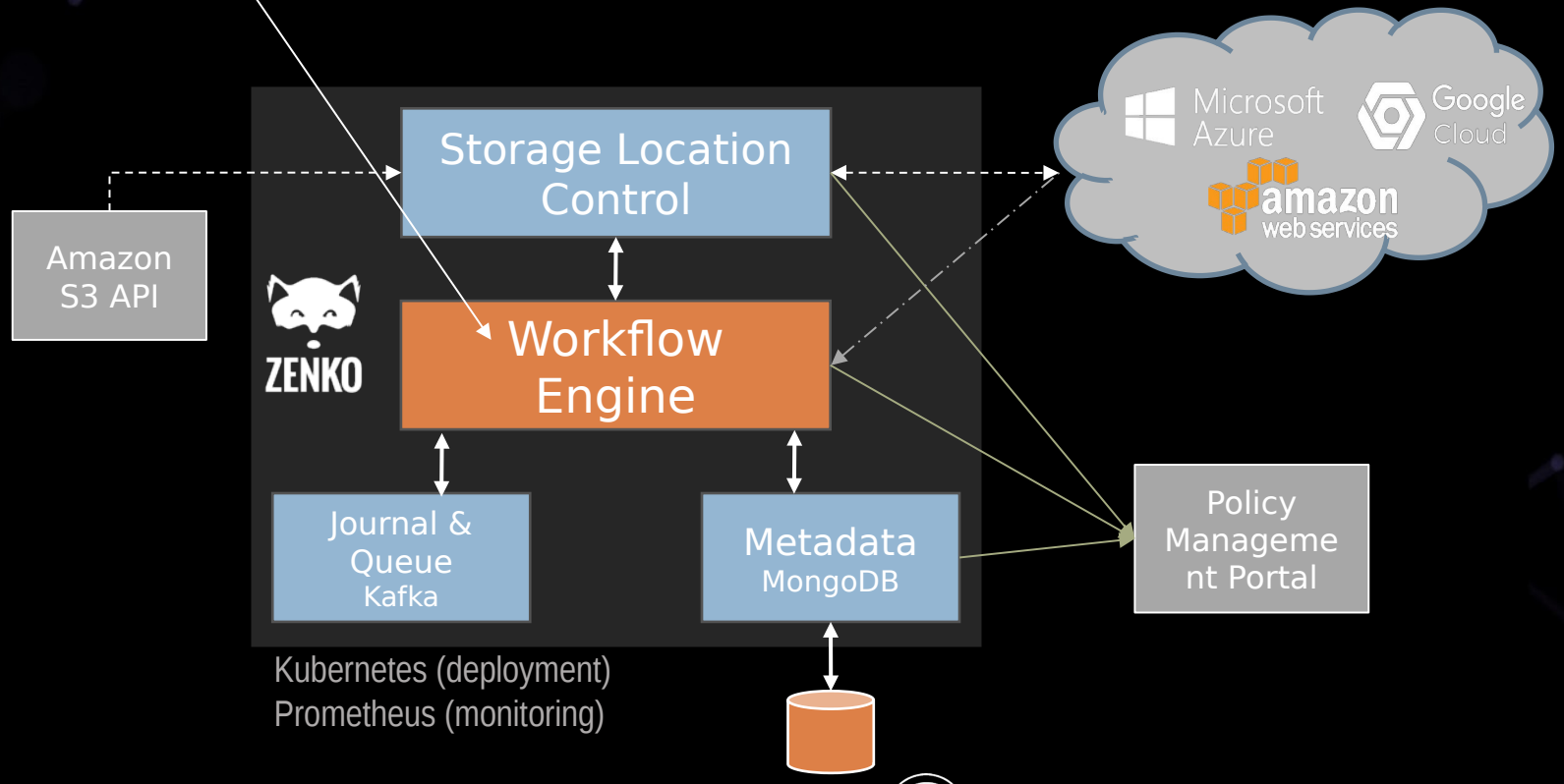


- Enterprise compliance
  - Company defines a policy to ensure that data is stored in specific locations/clouds according to regulatory and sovereignty requirements

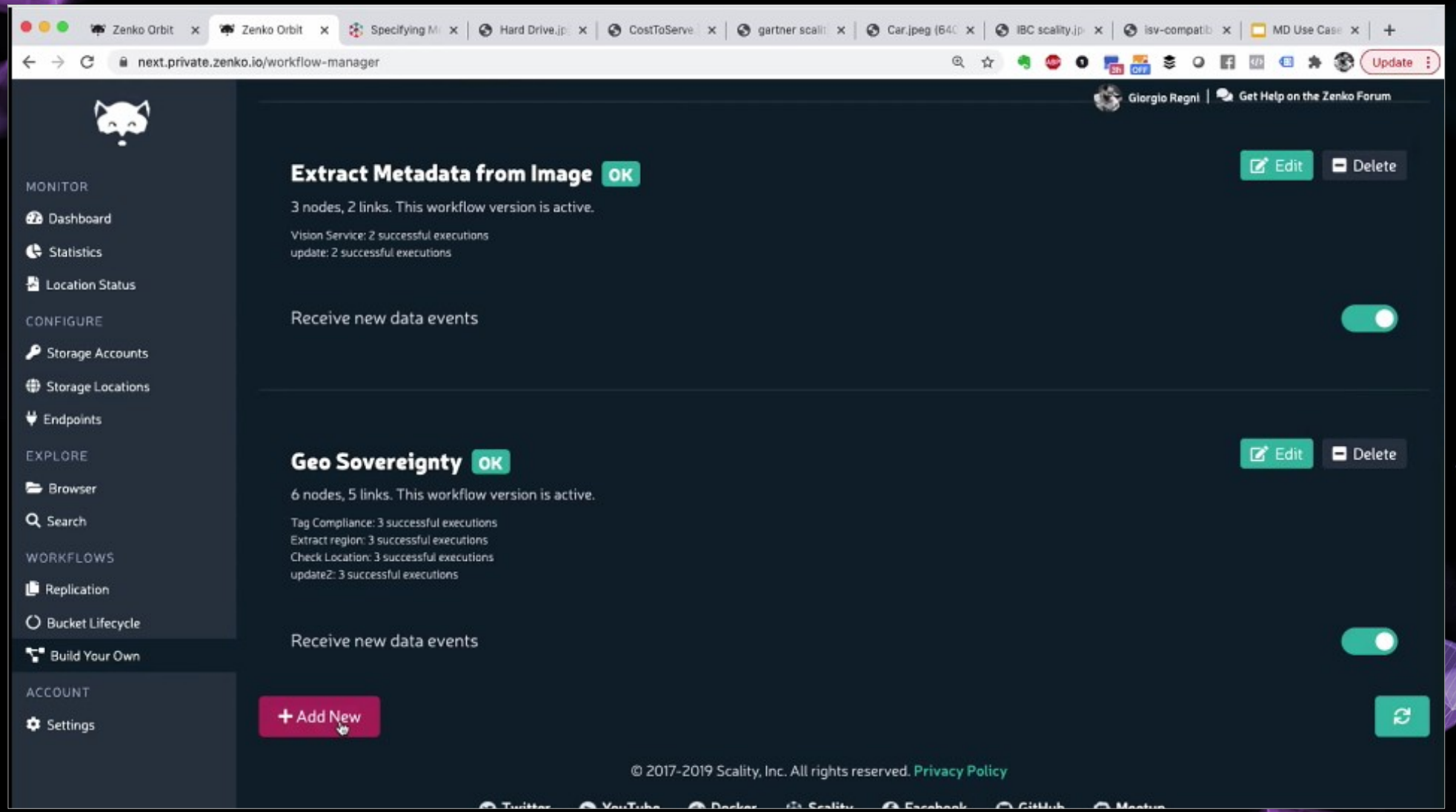
- IoT/Edge/Autonomous vehicles
  - Image geo-location data is extracted and stored as metadata tags; drive sensor data is filtered before moved to core data center

How can this be enabled in the future?
Custom policy logic and rules

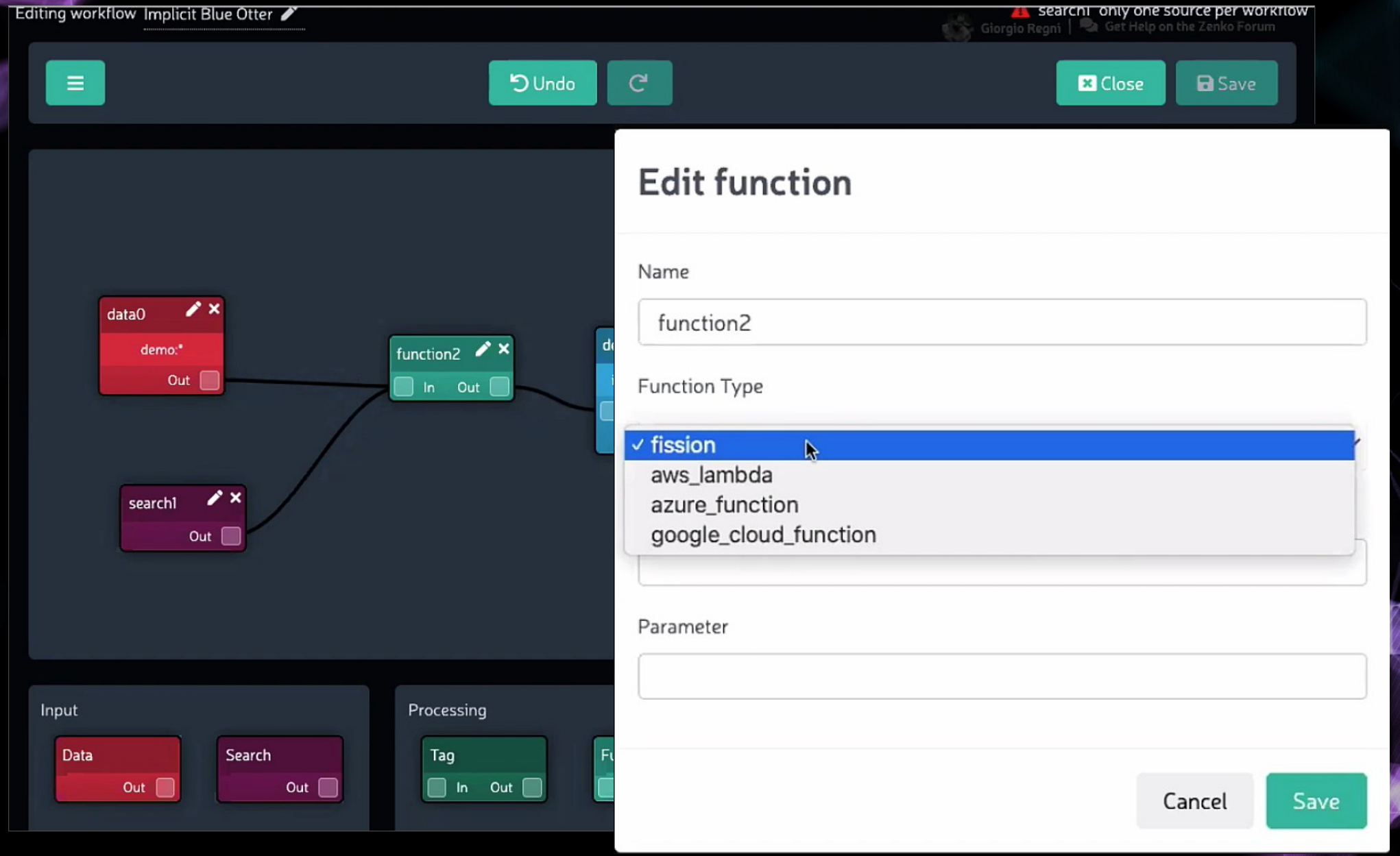
- Extensible workflow engine: user-defined functions, scripts, cloud services, lambda functions, etc.



Simplification: concept for a Visual Policy Builder



Concept for a Visual Policy Builder



Summary

- Increasing complexity in data management
- Challenging to predefine all customer requirements in policies
- User-extensibility will be needed to solve domain and business-spe problems
- Customers will need solutions that simplify cloud data management

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paul.speciale@scality.com

Demo of visual UI concept: https://vimeo.com/522400045

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