



AWS HealthOmics

Transform omics data into insights

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Challenges

Genomic and biological data has the potential to transform how we treat disease—but its scale is complicated and costly to manage

Tens of millions of whole genomes to be sequenced and stored in the next 5 years

Multiple specialized tools and workflow languages required

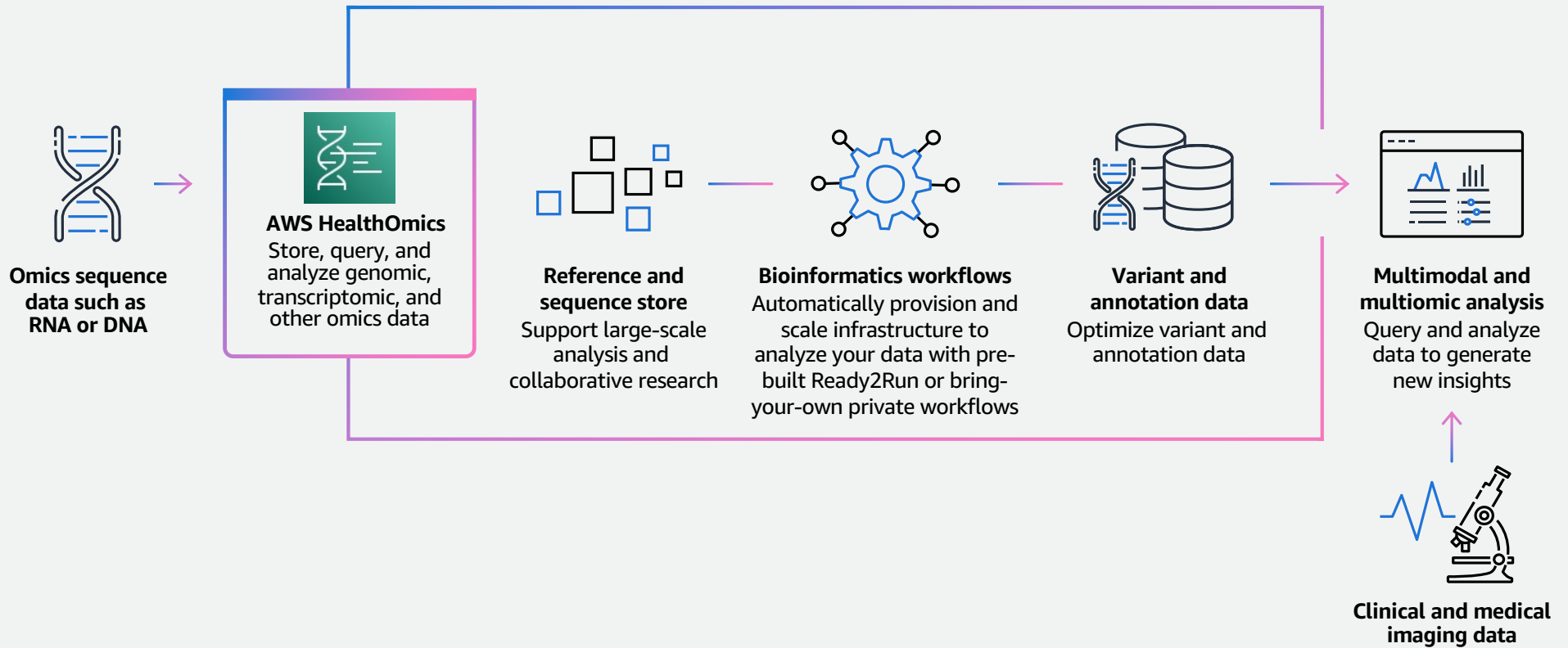
Special security, privacy, and compliance requirements mandated

AWS HealthOmics

A purpose-built service that helps healthcare and life science organizations build at-scale to **store, query, and analyze** genomic, transcriptomic, and other omics data. By removing the undifferentiated heavy lifting, you can **generate insights** from omics data **to improve health and advance scientific discoveries**



How it works



Storage



Discover data

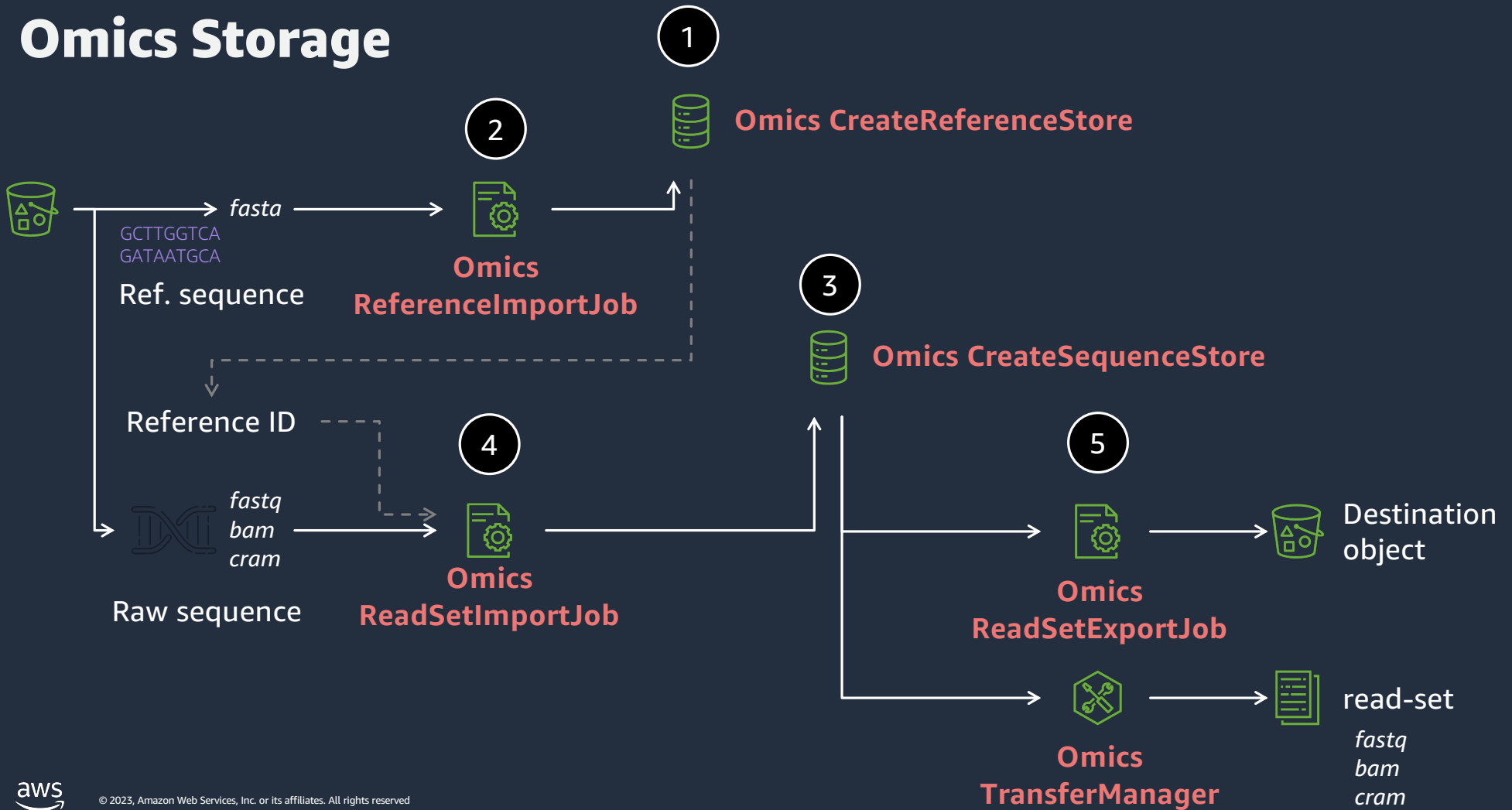


Share data



Lower costs

Omics Storage



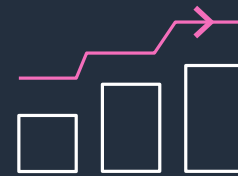
Analytics



**Ingests variant
and annotation
data**

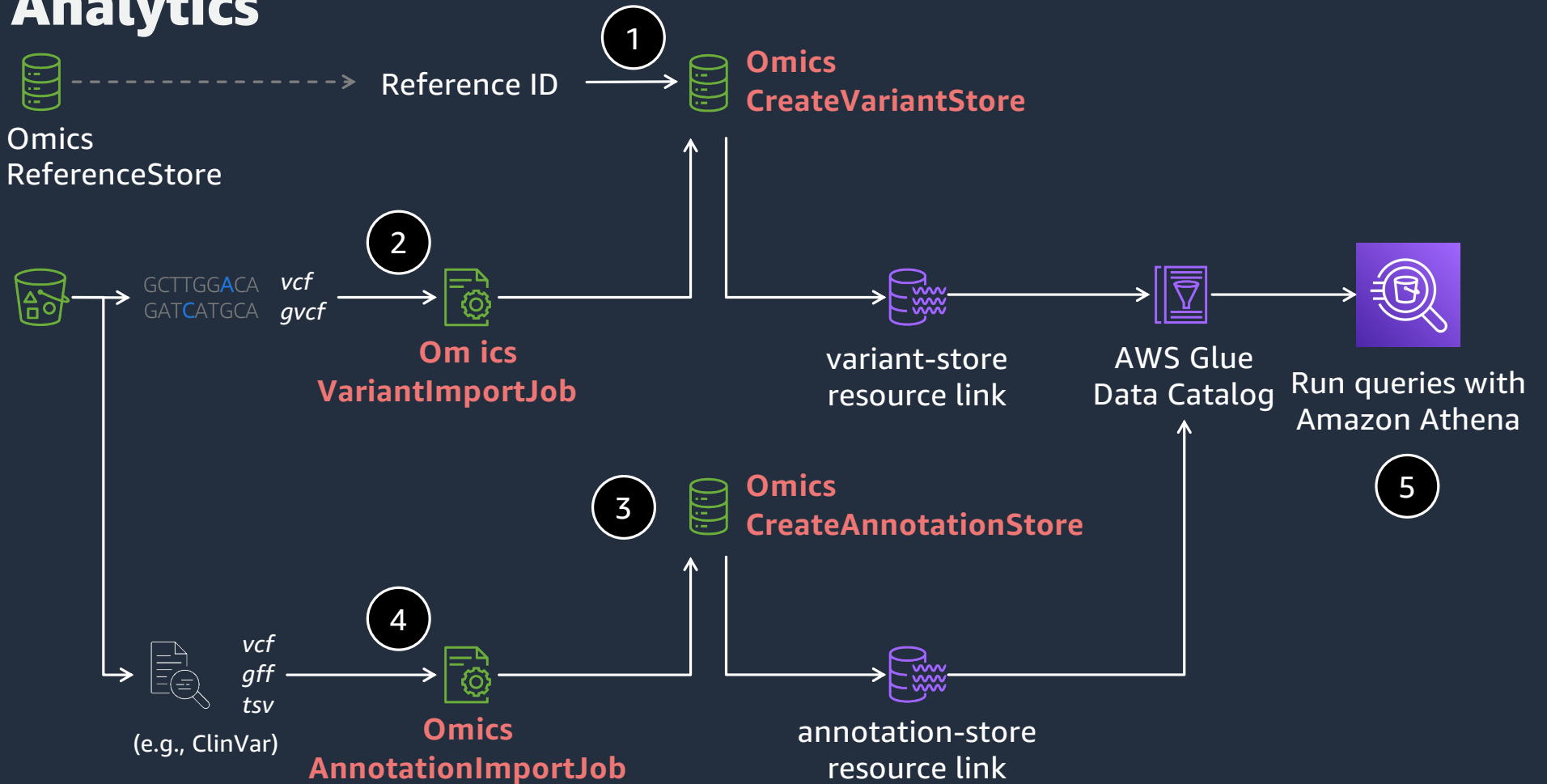


**Allows fine-
grained
access control**



**Scales
with you**

Analytics



Workflows



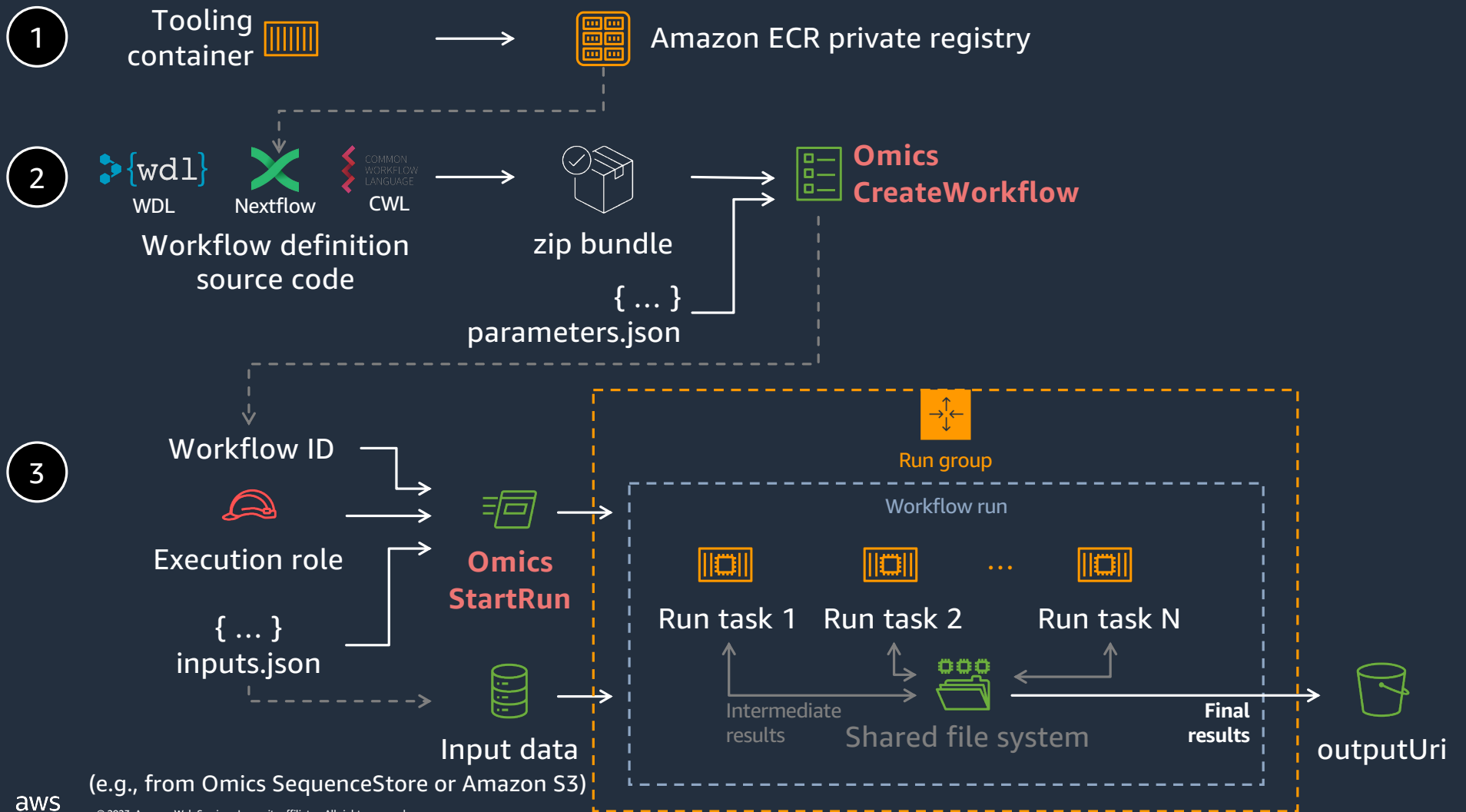
**Science not
infrastructure**

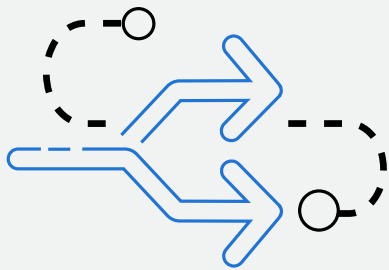


**Pay-as-you-go
pricing**



**Predictable cost
per workflow**





Ready2Run workflows

A set of pre-built workflows designed for specific use cases.

Open source pipelines

gatk from Broad Institute

scRNAseq from **nf-core**

AlphaFold from DeepMind

ESMFold from Meta Research

Industry companies

 Element Biosciences

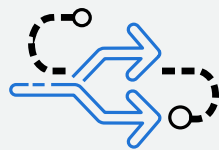
 Sentieon

 **nVIDIA**

AWS Health Omics helps accelerate data analysis with Ready2Run workflows



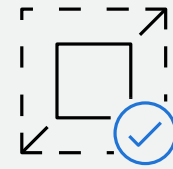
Easy-to-use



35 Ready2Run workflows



Predictable cost and runtime

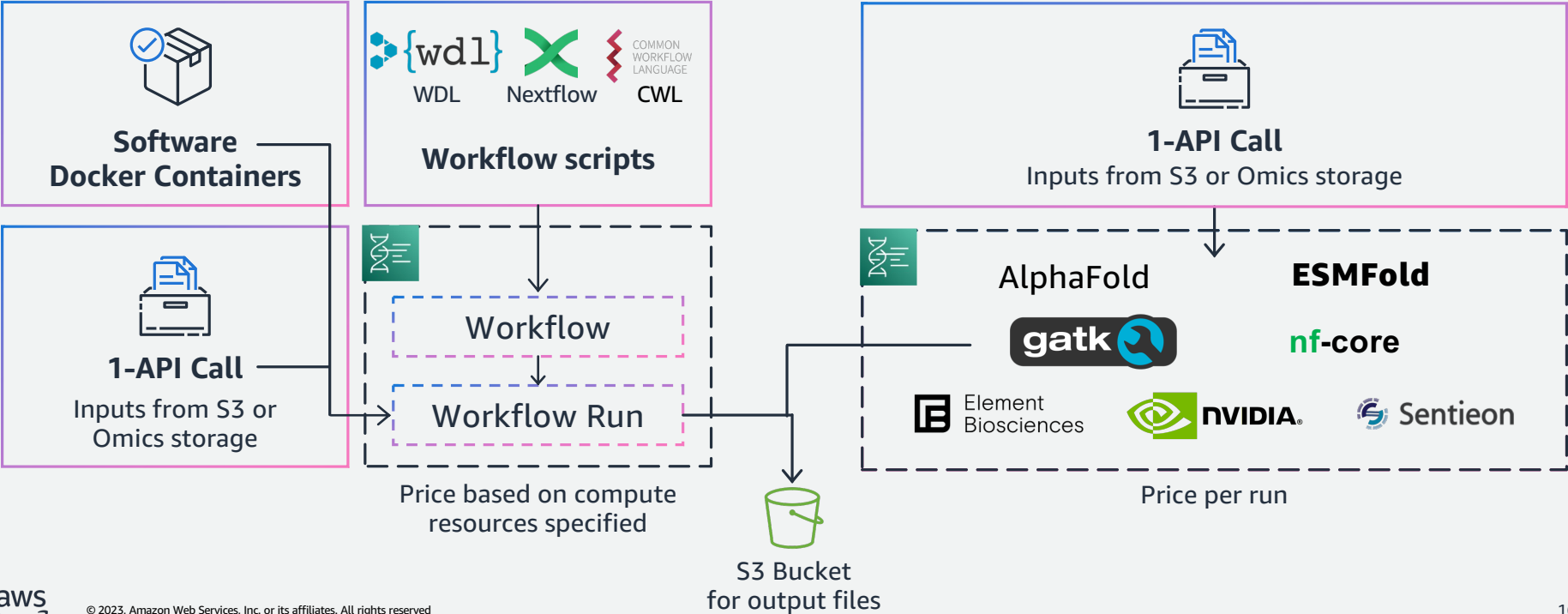


Run at scale

Omics workflows


Private workflows Bring your own


Ready2Run workflows Hosted




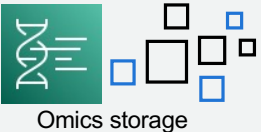
New Capabilities

Q1 2023


 PrivateLink Integration


 CloudFormation Integration


 Exposed workflow engine logs in CloudWatch


 Batch Imports of FASTQ, BAM and CRAM files


Q2 2023

 EventBridge Integration

 Direct multi-part upload of FASTQ/BAM/CRAM files

 Automatic Variant Data Parsing

 GPU instances available for workflows

 Ready2Run workflows

Workflows Demo



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Top use cases



Scale population sequencing

Understand how genomic variation maps to phenotypes across a population



Improve clinical genomics workflows

Build reproducible and traceable clinical genomics workflows



Accelerate clinical trials

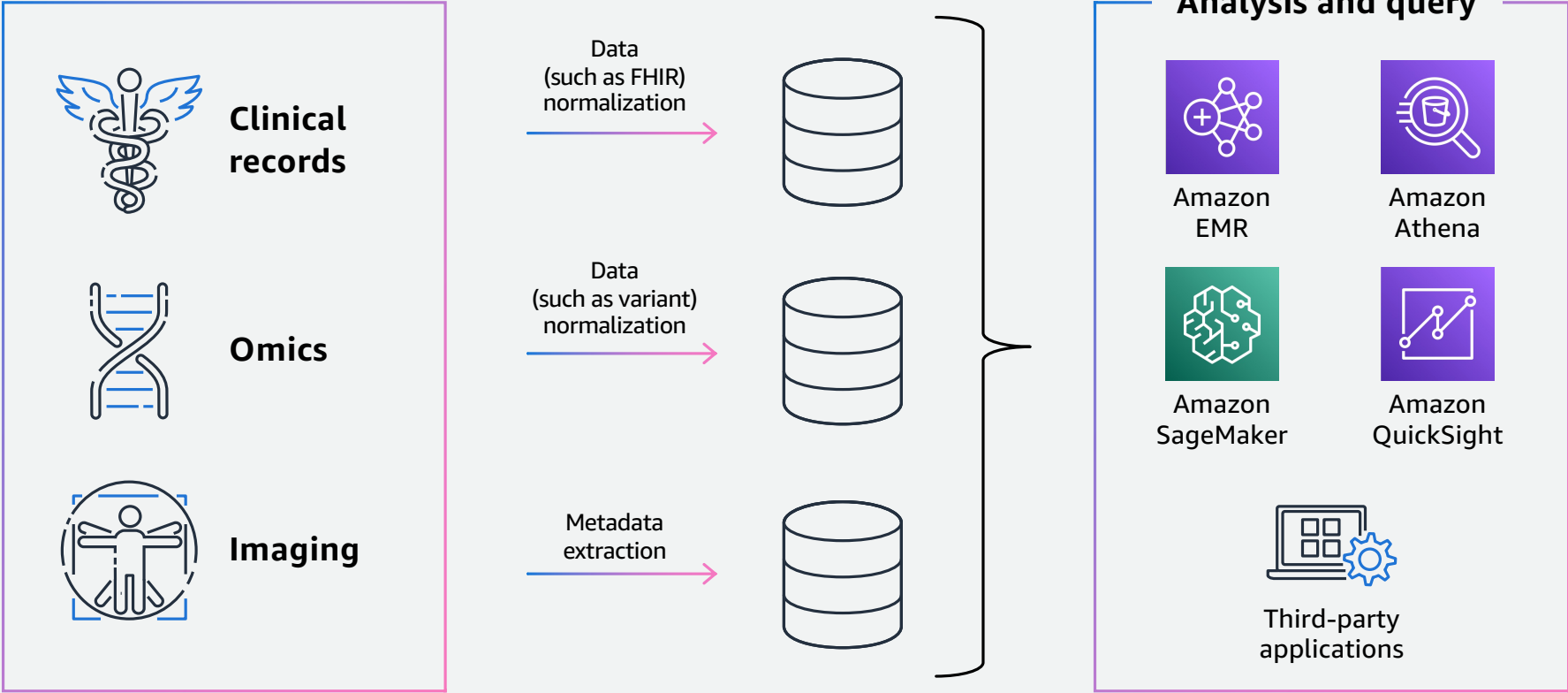
Integrate genome analysis into clinical trials to test new drug candidates' efficacy



Enhance research and innovation

Streamline and control storage, access, and analysis of anonymized genomic data

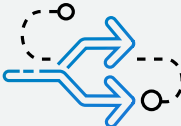
Multomics and multimodal analyses



Get started



**Developer
guide**



**Ready2Run
workflows**



Web page



Helpful Links

- [AWS HealthOmics End-to-End workshop](#) - learn how to use all or particular AWS HealthOmics services from the CLI, CDK or console.
- [Multi-Modal Guidance](#) - General Guidance on Multi-Modal analysis on AWS
 - [Technical Guidance for Multi-Omics and Multi-Modal Data Integration and Analysis on AWS for TCGA](#)
- [AWS HealthImaging](#) - Store, analyze, and share medical images in the cloud at petabyte scale
 - [Technical Guidance for Multi-Modal Data Analysis with AWS Health and ML Services](#)



Thank you!

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