

BaseSpace™ Sequence Hub

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illumina®

The destination for genomic investigators to **manage** and **analyze** genomic data, collaborate, and drive towards biological insights.

BaseSpace™ Sequence Hub

Enables anyone to analyze their NGS data



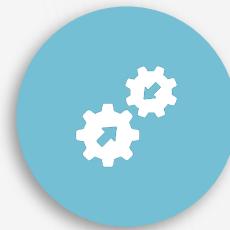
Plug and play with tight instrument integration



Easy sharing and collaboration worldwide



Simple **push-button analysis** with public and private analysis tools



Advanced **automation and integration**



Comprehensive **security and privacy** controls

Comprehensive Security & Privacy



Extensive and secure global framework built on Amazon Web Services (AWS)



ISO 27001 and 13485 certified Information Security and Quality Management Systems



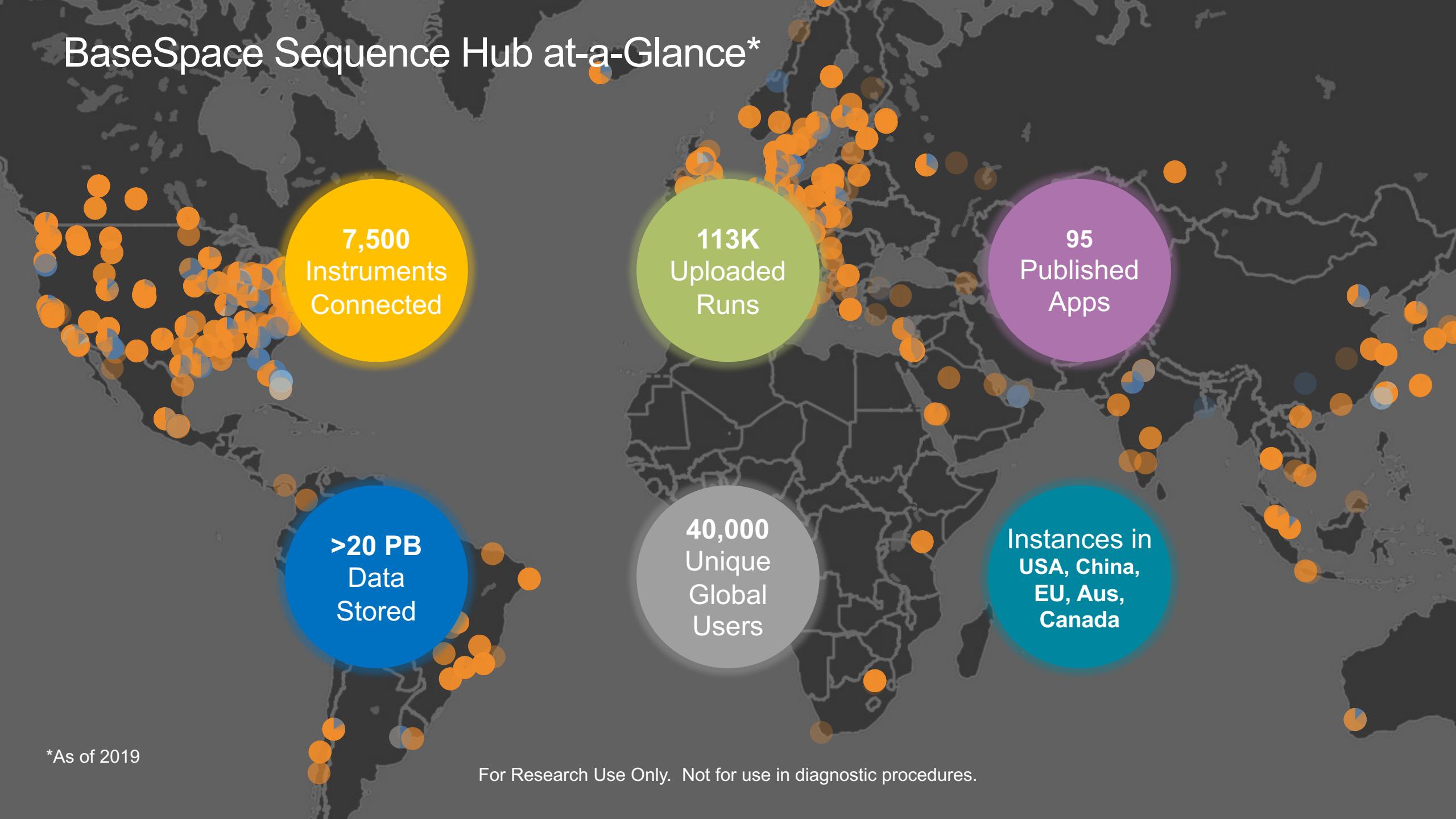
Complies with the principles of GDPR privacy regulations in all global instances



Support for HIPAA-compliance* in a regulated environment

*US-only

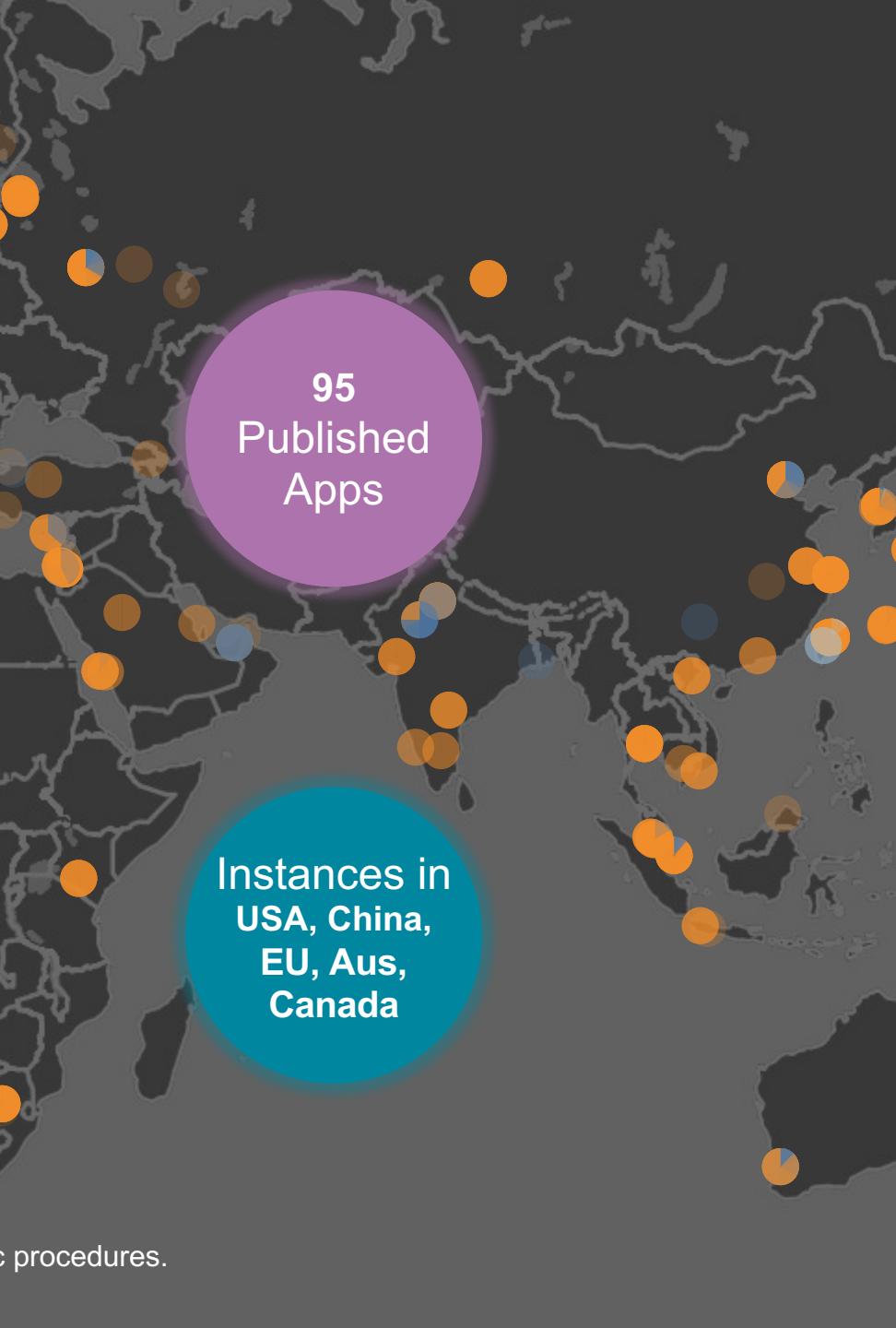
BaseSpace Sequence Hub at-a-Glance*



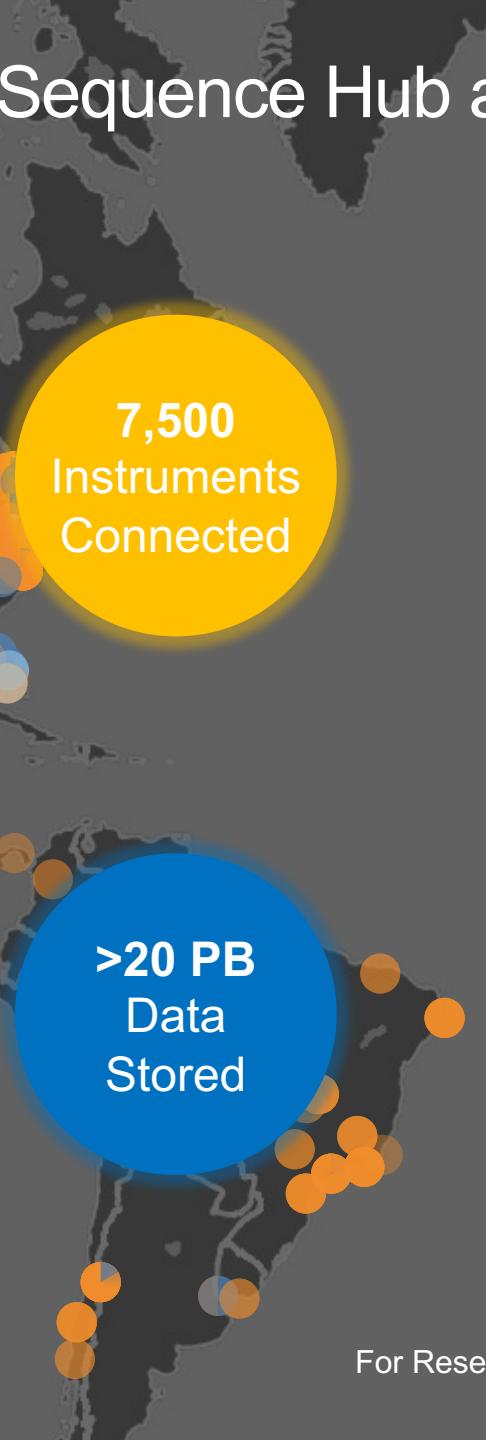
7,500
Instruments
Connected



113K
Uploaded
Runs



95
Published
Apps



>20 PB
Data
Stored



40,000
Unique
Global
Users



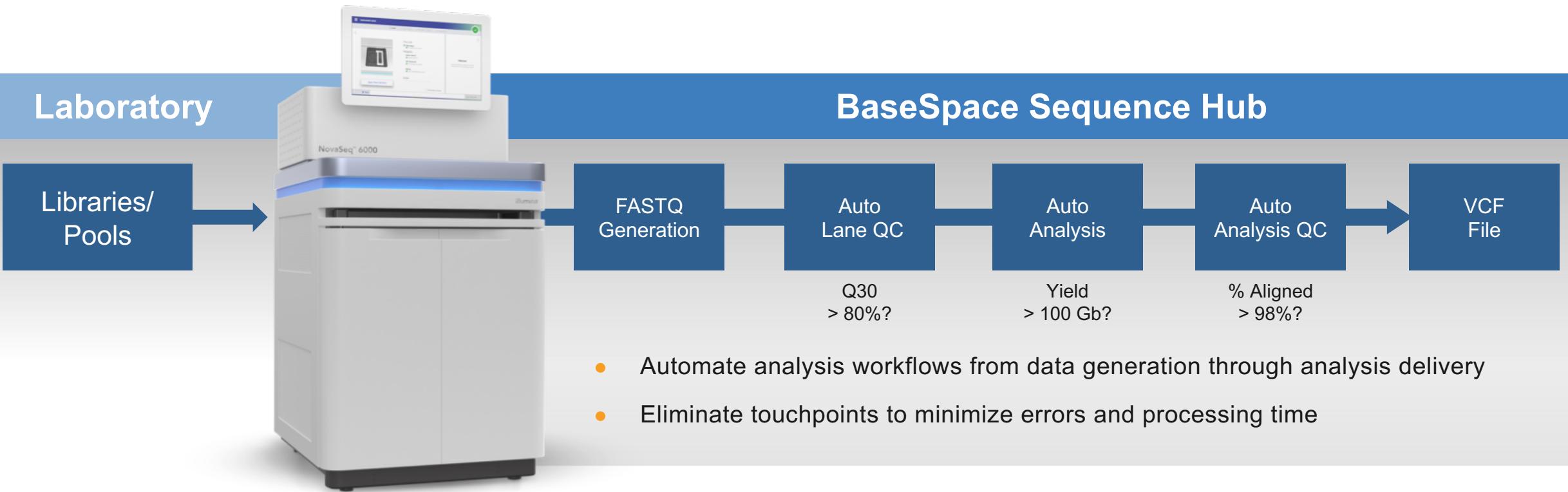
Instances in
USA, China,
EU, Aus,
Canada

*As of 2019

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Minimize Human Intervention with Automation

Biosample-centric, touch free user experience



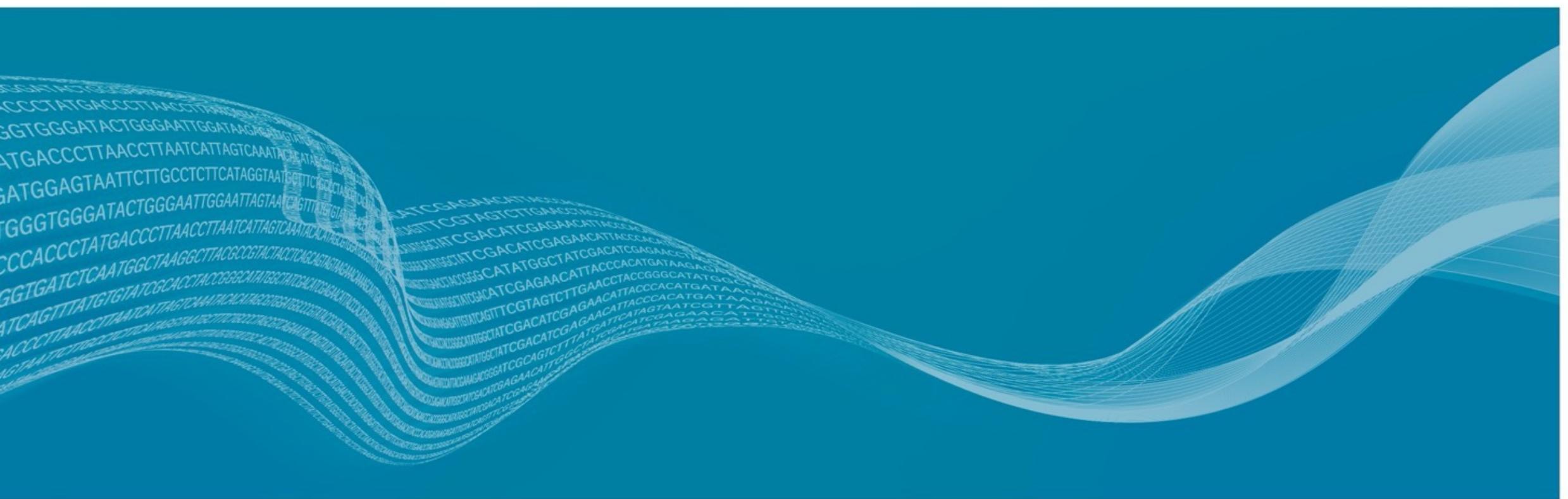
BaseSpace Apps enable applications

Application	Sample & Library Prep	Sequencing	Bioinformatics (Local & Cloud)
Metagenomics	Nextera™ XT	MiSeq	16S Metagenomics (16S) DRAGEN™ Metagenomics* (Shotgun)
Amplicon/Targeted	AmpliSeq™ for Illumina	iSeq MiniSeq MiSeq	DNA Amplicon RNA Amplicon DNA + RNA Amplicon MIXCR Immune Repertoire Analyzer
Gene Expression	TruSeq™ RNA TruSeq Stranded RNA	NextSeq NovaSeq	DRAGEN RNA RNA-Seq Differential Expression
Exomes	Nextera DNA Flex for Enrichment	NextSeq NovaSeq	DRAGEN Enrichment
Genomes	Nextera DNA Flex TruSeq DNA Nano TruSeq DNA PCR Free	NextSeq NovaSeq	DRAGEN Germline DRAGEN Somatic

Note: Not an exhaustive list of supported applications

*DRAGEN Metagenomics will be released in April 2020

BaseSpace Sequence Hub Pricing



BaseSpace Sequence Hub | 2020 Pricing

Features	Basic	Professional	Enterprise
Included storage	1 TB	1 TB	1 TB
Complimentary iCredits	250* iCredits	500 iCredits	500 iCredits
Payment Plans	n/a	Monthly Billing or Pre-paid iCredits	Monthly Billing or Pre-paid iCredits
Run Setup and Monitoring	✓	✓	✓
FASTQ Generation	Free	Free	Free
Data Egress	Free	Free	Free
Data Sharing	✓	✓	✓
Advanced Security & Compliance (Encryption, ISO 27001, ISO 13485)	✓	✓	✓
API and Command-line Access	✓	✓	✓
Number of users	One	Unlimited	Unlimited
Workgroups		One	Unlimited
Premier Security (Private Domain, Single Sign-on [^] , Audit Trail, Access Control)			✓
HIPAA BAA (US-only)			✓
Service Level Agreement			✓

[^]Available for systems with control software that support Universal Copy Service. Not available for all legacy systems.

*250 iCredits expire after 30-day introductory trial

BaseSpace Sequence Hub | Subscription Pricing

Subscription (Required)

Product No.	Product Name	Product Description	Price (USD)
NEW 20042109	BaseSpace Sequence Hub Professional Annual Subscription	Annual subscription for BaseSpace Sequence Hub Professional. This subscription includes 500 iCredits to get started quickly, 1 workgroup to enhance collaboration, and access to powerful APIs.	\$500
15066411	BaseSpace Sequence Hub Enterprise Annual Subscription	Annual subscription for BaseSpace Sequence Hub Enterprise. This subscription includes support for multiple workgroups, private domains, single sign-on, and HIPAA compliance (US-only).	Request Quote

BaseSpace Sequence Hub | Consumption Pricing

Consumption

Product No.	Product Name	Product Description	Price (USD)
20012931	BaseSpace Sequence Hub Consumption Billing	BaseSpace Sequence Hub Consumption Billing - The not to exceed amount is represented as the amount on the quote. Customers will be invoiced monthly for consumption of compute, storage, and 3rd party Apps up to the amount associated with item number 20012931.	\$500
20042038	Illumina Analytics – 1 iCredit	OR	\$1
20042039	Illumina Analytics Starter Package – 1,000 iCredits		\$995
NEW 20042040	Illumina Analytics – 5,000 iCredits	BaseSpace Sequence Hub iCredits for storage and analysis.	\$4,950
20042041	Illumina Analytics – 50,000 iCredits		\$49,000
20042042	Illumina Analytics – 100,000 iCredits		\$95,000

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BaseSpace Sequence Hub | Consumption Pricing

Item	Price – NEW (iCredits)	Price – OLD (iCredits)	AWS us-east* (USD)
Compute (Standard)	3/hr	3/hr	Varies
Compute (DRAGEN)	5/hr	5/hr	\$3/hr + DRAGEN license fees
Storage (Active)	22.5/TB/mo (270 /TB/yr)	30/TB/mo (360/TB/yr)	Starts at \$23/TB
Storage (Archive) – Move to archive	20/TB^	n/a	
Storage (Archive)	2/TB/mo (24/TB/yr)	n/a	\$1-\$4 per TB/month
Storage (Archive) - Retrieval	30/TB^	n/a	Varies
Data Egress	FREE	FREE	\$80-\$150 per TB

Notes:

- ^Archive & Retrieve costs pro-rated based on amount of data moved
- *AWS pricing taken from
<https://aws.amazon.com/s3/pricing/>
<https://aws.amazon.com/glacier/pricing/>

Archival Storage| ROI Example

Example costs

Example: 2 TB of data stored for 2 years (beyond free 1TB)

	Maintain data in active storage	Archive data after 3 months
Calculation	<u>Active</u> $2 \text{ TB} * 22.5 \text{ iCredits/TB/month} * 24 \text{ months}$	<u>Active</u> <ul style="list-style-type: none">$2 \text{ TB} * 22.5 \text{ iCredits/TB/month} * 3 \text{ months} = 135$ <u>Move to archive</u> <ul style="list-style-type: none">$2 \text{ TB} * 20 \text{ iCredits/TB} = 40$ <u>Archival storage</u> <ul style="list-style-type: none">$2\text{TB} * 2 \text{ iCredits/TB/month} * 21 \text{ months} = 84$ <u>Retrieve</u> <ul style="list-style-type: none">$2 \text{ TB} * 30 \text{ iCredits/TB} = 60$

Cost to customer **1080 iCredits**

319 iCredits **70% savings**

Analysis Costs | How much does it cost to process 1 sample in BaseSpace?

Example analysis costs

DNA

Human WGS	7 iCredits
Sample: 30X hWGS	
Size: 120Gb	
Cost: 7 iCredits	

App: DRAGEN Germline
Input: FASTQ
Output: SNVs, BAM/CRAM

Whole Genome

Shotgun Metagenomics	2 iCredits
Sample: Shotgun	
Size: 120Gb	
Cost: 2 iCredits	

App: DRAGEN Metagenomics
Input: FASTQ
Output: Taxonomic Classifications

Exome

Exome	2 iCredits
Sample: Exome	
Size: 10Gb	
Cost: 2 iCredits	

App: DRAGEN Enrichment
Input: FASTQ
Output: VCF, BAM/CRAM

Targeted

Cancer Panel	2 iCredits
Sample: Myeloid Panel	
Size: 50Mb	
Cost: 2 iCredits	

App: DNA Amplicon
Input: FASTQ
Output: Somatic variants

* Approximately 12 iCredits for 30X hWGS with CNV & SV calling enabled

Note: These are estimates. Actual analysis costs vary based on input sample characteristics & analysis parameters selected.

Analysis Costs | How much does it cost to process 1 sample in BaseSpace?

Example analysis costs

	Whole Genome	Exome	Targeted	
RNA	Transcriptome 2 iCredits Sample: RNA-Seq Size: 50M Reads Cost: 2 iCredits App: DRAGEN RNA Input: FASTQ Output: Transcripts, Fusions	RNA Exome 1 iCredit Sample: Tumor Exome Size: 10Gb Cost: 3 iCredits App: DRAGEN RNA Input: FASTQ Output: Transcripts, Fusions	RNA Panel 2 iCredits Sample: RNA Panel Size: 30 Mb Cost: 2 iCredits App: RNA Amplicon Input: FASTQ Output: Somatic variants	16S rRNA 1-2 iCredits Sample: 16S rRNA Size: ? Mb Cost: 2 iCredits App: 16S Metagenomics Input: FASTQ Output: Taxonomic classifications

Note: These are estimates. Actual analysis costs vary based on input sample characteristics & analysis parameters selected.