illumina®

DRAGEN™

Comprehensive, efficient, local secondary analysis

Highly accurate secondary analysis in a fraction of the time compared with a traditional CPU-based system.

~26 minutes Call small variants at 40x coverage.[1]

~34 minutes Call the full suite of structural variants, repeat expansion, and targeted callers at 40x coverage.[1]

Maximize analysis performance with a robust, trusted on-premises solution

Accurate and comprehensive

- Highly accurate variant calling with 99.89% accuracy score using the Precision FDA Truth Challenge v2 benchmark data[1]
- Replace up to 30 traditional open-source tools[2,3]
- Get comprehensive genomic variant insights with Illumina Connected Annotations, which leverages 17 key databases like PrimateAI-3D, SpliceAI, COSMIC, and OMIM

Local analysis with security you control

- Trusted local solution with regular software updates for high quality analysis
- Built-in data protection using full disk encryption backed by hardware based key protection
- Documentation with security best practices and recommendations enable safe and secure configuration

Efficiency with hardware acceleration

- Uses field-programmable gate array (FPGA) architecture to achieve rapid turnaround times
- Process a 40x genome in ~ 34 minutes, with all supported callers[4]
- Optimized energy usage with a single server consuming less than 0.12 kWh for 30X WGS analysis[5]

Optimize your sequencing workflows with the DRAGEN server

- One server from sample to draft report for oncology clinical research applications - Install Illumina Connected Insights and DRAGEN TruSight™ Oncology 500 Analysis Software
- Compatible with Illumina instruments, a single DRAGEN server can process data from different Illumina sequencing platforms
- Reanalyze samples by combining DRAGEN server with DRAGEN onboard
- Easy installation enabled by standard 2U form factor, fits in industry-standard server racks. Access installation guide for detailed instructions

Table 1: DRAGEN Server v4 specifications

Component	Specifications
CPU	Dual Intel Xeon Gold 6226R 2.9GHz, 16C / 32T
System Memory	512 GB DDR4
Scratch Drive	2 × 7.68 TB NVMe
OS Drive	2× 480 GB SSD (RAID 1)
Hardware Acceleration	1x FPGA card
Form Factor	2U
Dimensions	H 8.8 cm (3.5 in), W 43.8 cm (17.2 in), D 76.4 cm (29.9 in)
Power Supply	1968 W Dual, Hotswap redundant power supply

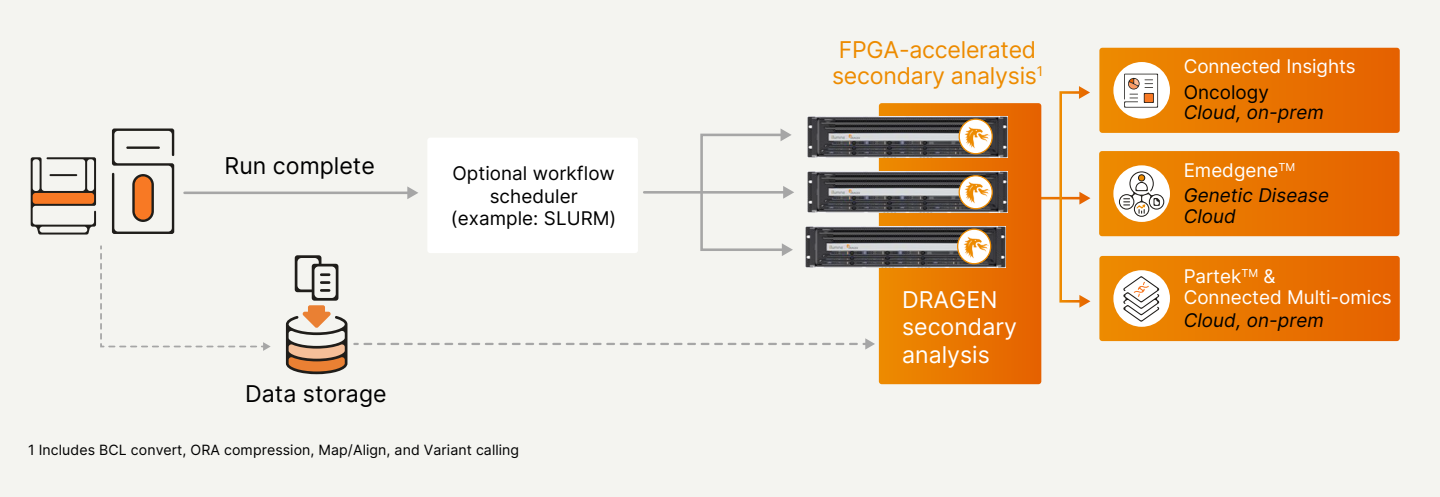

Figure 1: Example on-premises workflow, including instrument connection, optional workflow scheduler, analysis, and interpretation.

Learn more about DRAGEN secondary analysis

DRAGEN server for your oncology workflows

References

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3. Internal data on file. Illumina, Inc., 2022.
4. Illumina data on file, without new specialized callers like MRJD and VNTR available in DRAGEN v4.3
5. Inside DRAGEN and what enables efficient secondary analysis at scale. https://assets.illumina.com/science/genomics-research/articles/secondary-analysis-at-scale.html