

Bioinformatics core @



SLIMS

A Solexa Laboratory Information Management System

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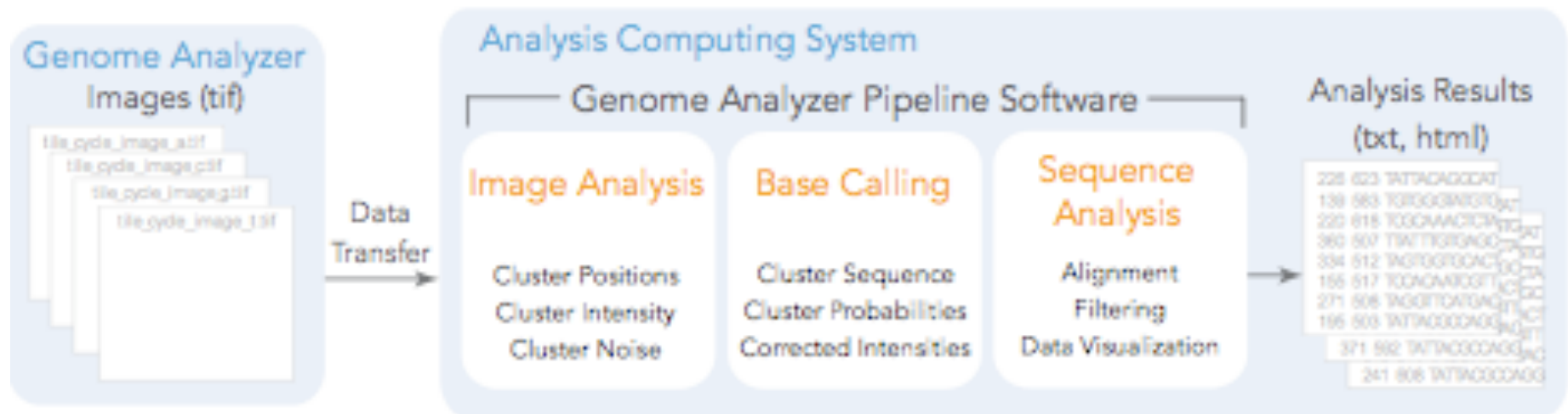
UC Davis Genome Center

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Illumina GA (Solexa) Applications

- Deep Sequencing
- SNP discovery
- ChIP-Seq
- SAGE
- Run-through Sequencing
- Digital Expression Profiling

Genome Analyzer Pipeline



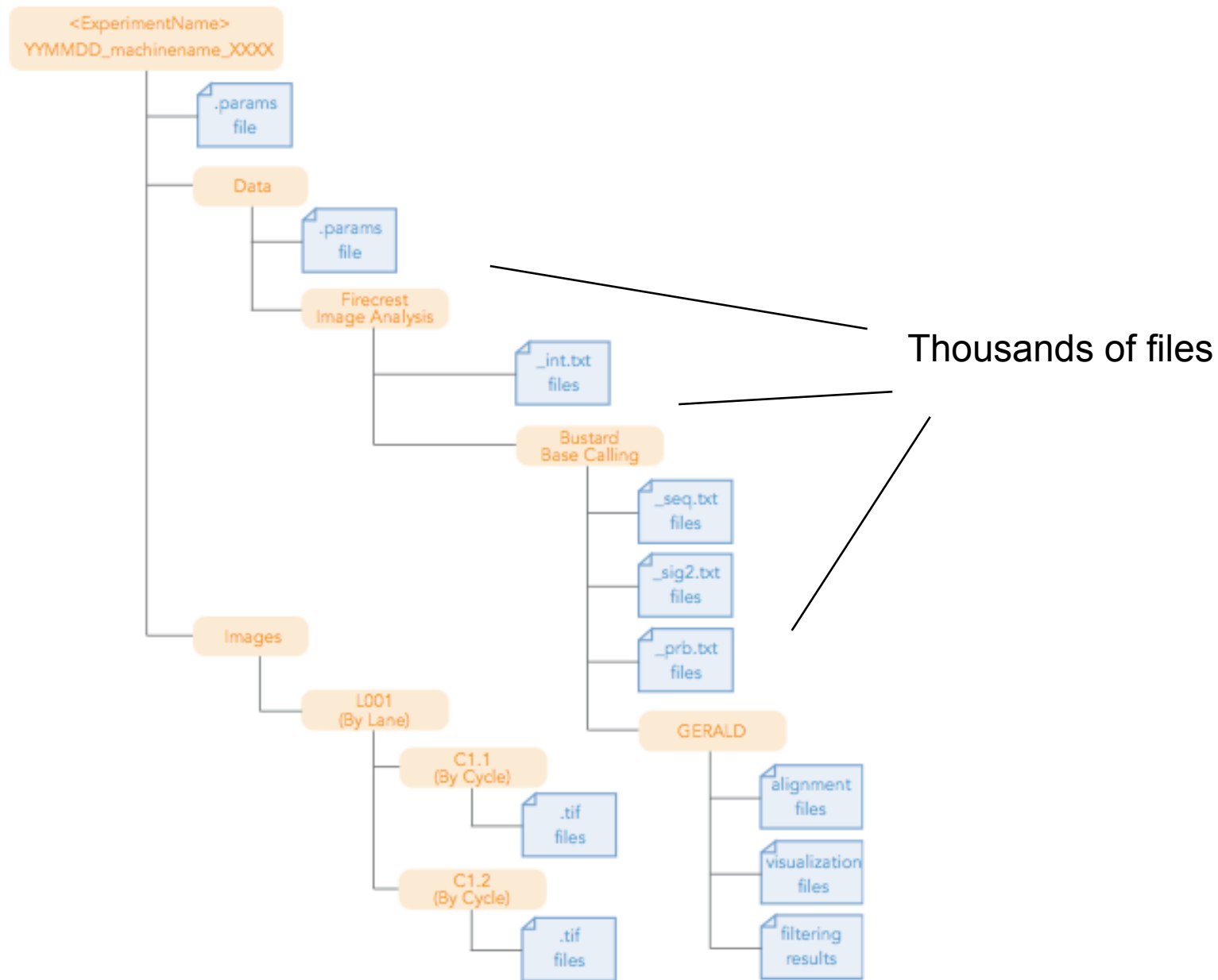
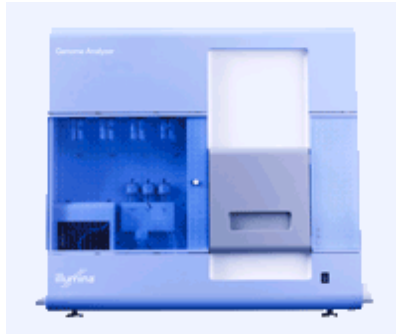


Figure 3 Run Folder Directory Structure

Solexa Sequencing Data Flow

(This infrastructure can hold two copies of data at least for three months)



Illumina Genome Analyzer (GA)
(no storage)

1TB/per data set
per 3 days
Copy on the fly
1st copy



Processing time
~30 hours/data set
Data retention time
Up to 3 weeks

Solexa Server for image processing and base calling
(2 Intel Xeon E5345 Quad-core 2.33GHz, 16GB RAM, ~8TB)

2nd copy

Linux Cluster
alignment & assembly



Web access

Secure Shell access

Mobile hard drive

2 month
Free access

Self service

Online Data Access Server
(To be purchased, 24-100TB)
Data retention time up to 3 months

Under testing



Sun Storagetek Tape Backup Library
Data retention time – user specified

recharge

(rate to be determined)



Mobile hard drive

Meta data input

Create Sequencing Run

Create Run - Figure 1

Lane Group allows administrative user to select what group the lane belongs to

Lane Group	Organism	Concentration (pM)	Description	
1	Peggy Farnham	Homo Sapiens	2	
2	Luca C...		1	
3	Peggy Farnham	Homo Sapiens		

Allows administrative user to indicate what organism was sequenced in this lane.

The concentration of the primer. Takes a float as an input.

Any extra information you want to capture about the lane.

Run view

View Solexa Runs

Run Date	Machine	Description	View
2007-10-05	HWI-EAS125	Arab: Arabidoposis, Luca Comai, KAP: human, Peggy Farnham, Lettue: Richard Michelmore	View
2007-10-19	HWI-EAS125	User samples 4 lettuce (lanes 1,2,3,4), 3 ChIP (lanes 5,6,7),	View
2007-10-25	HWI-EAS125	User samples 5 ChIP (lanes 1,2,3,4,5), 2 Arab. libe (lanes 6,7)	View
2007-11-15	HWI-EAS125	User samples Arab Care (1) Sue (2) LC-A (5), LC-B (6), L5 pol (3), L5 tot (4)	View
2007-12-05	HWI-EAS125	Lane 4 only one denoted as "usable data"	View
2007-12-18	HWI-EAS125		View
2008-01-10	HWI-EAS125	Galaxy 1.01 w/ AF4 All lanes usable data	View
2008-01-16	HWI-EAS125	Analyzed files and images on dhcp50 All lanes usable data Galaxy 1.01 w/ AF4	View
2008-01-29	HWI-EAS125	Analyzed files on superserver Galaxy 1.01 w/ AF4 All lanes usable data	View
2008-02-08	HWI-EAS125	Data not usable Analyzed files on superserver	View
2008-02-15	HWI-EAS125	Galaxy 1.01 w/ AF4 Analyzed files and images on superserver	View

Lane view

