Commcell architecture
design goals: begin with the end in mind

optimize movement and management of data
accelerate time to recovery
orchestrate and automate
activate data vaulue
mitigate risk through resilient design

commcell and commcell console
clients have IDA's (intelligent data agents)
search engine to index full content of client data
collecteve components are known as commcell

commserve houses database for disaster recovery
plus event orchestration and commcell reporting
plus securiy profiles and integration with AD

Commserve manages all activity in the commcell
Microsoft SQL server inside
Jobmanager manages and monitors all operations
and communicates with agents
Scheduler
Event manager for events throughout the commcell
Reports and job history
Control all security
Database can be retrieved in event of system failure
Commserve houses the commcell console (interface)

Media Agent(s)
Is the gateway between data streams from clients to storage targets
So: from IDA via MA to Storage

Except for NDMPdumps all data traverses the MA
MA maintains index cache for management operations and granular
indexing
MA is the home for dedupe db's
MA manages intellisnap storage snapshots
Additional MA's may be added to scale out seamlessly

(documentation.commvault.com)

Clients (can be anything)
contain filesystem iDAs
contain Application iDAs
Application aware for consistent backups

Search engine nodes (additional) for full content
search and indexing
contains index of any indexable files

Next to a Search engine that searches and indexes,
multiple search engines can be added for searching

Web Server and Web Console
WS: web applications and search services
WC: Operations, Reporting, Manage Workloads, Download Software
Additional WS and WC can be installed on other hardware.

Contentstore
Virtual repository to give complete view of managed data
Common catalogue where data is stored, where it came from and how it got there.
Scalable and securely accessible

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Indexing (4 areas)
Commserve DB (sql)
- scheduling
- storage policies
- activity metadata
- media management
- reporting
- security role based privileges
- encryption management

Media Agents have Index Cache (maintained locally)
- stores data's metadata information (characteristics)
- DDB maintains hash records for dedupe policies

CommServe minimises footprint capacity
this allows for DR CommServer destinations

Index info is also written to contentstore!!!
Indexes can thus be easily rebuilt and brought online.
Time required to restore database is minimum

CommVault is easily scaled out.
- apply additional MA's

CommVault is easily scaled up (add storage)

Storage Policies!
Manage data to business requirements.
(milkcartons with different expirationdates)
Segregate types of data
-Where is it stored
-Number of copies
-How long to keep
-Storage Parameters

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client computer groups
-geography
-security
-functional groups (sales/finance/services/dev/test)

smart client computer groups
clients are added and removed automatically
based on rules

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client:
intelligent data-agent to manage the client's data
IDA contains a DATA SET
A subclient protects all data within a data set
you can create custom subclients for folders etc
e.g spreadsheets are more important than mp3 files

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single pass recovery
full backup
incremental backups
MA indexes all data

at restore: commvault looks at the most current version of data. The MA index is leveraged to retrieve the most recent copy.

Synthetic full backups
a new baseline is generated from original baseline and increments