



nDVR to the TV

RGB Overview

- Established 2003, raised \$63m
- Focused on Video Processing
- Multiscreen IP Video Market Leader
- Shipped \$300m+ lifetime
- 6 product families: 9,000+ units shipped
- 430+ customers in 54+ countries
- 150 employees
- Development in Sunnyvale & Austin
- Comprehensive, world-wide support
- 44 patents filed, 19 awarded to date



nDVR Direct to the TV

- **What is it?**
- **Why is it good?**
- **What does it look like?**
- **How new technologies can make it even better? (hint: Nimbus, Cirrus, Stratus, Cumulus)**

What is Video in the Cloud?

A. When I watch a movie on the airplane



What is Video in the Cloud?

B. Watching TV in a Coffee Shop



What is Video in the Cloud?

C. ????

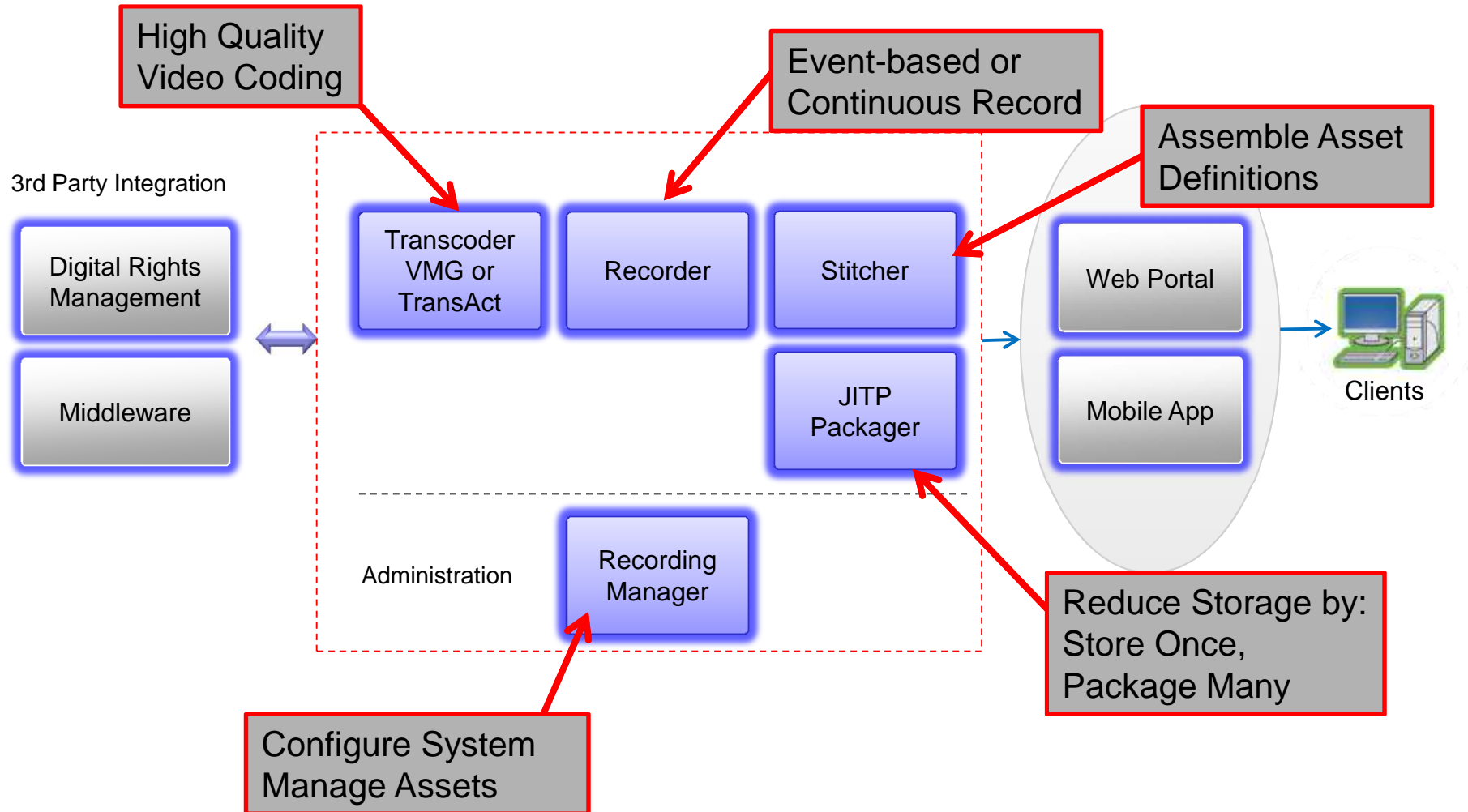
What is network Digital Video Recording (nDVR)?

- **The ability for a subscriber to make a recording of a linear broadcast via a middleware system**
- **Capture video**
 - Operator defined schedule (CatchUP/TimeShift)
 - User specified
- **Store and organize assets**
- **Playback**
 - Should be able to start quickly
 - Trick modes (pause, FRW, FFW)
 - Resume at a given point in the movie
 - Sliding window (TSTV), based on capabilities of VOD server
- **Network-side technology**

Why nDVR?

- **STB-less**
 - Capex
 - Opex
 - Support
- **Multi-client delivery**
 - Any Device
 - Portability
- **Operator Control**
- **Advertising potential**
- **Falling storage costs**

Network nDVR Components



nDVR hurdles

- **Storage costs**
 - Reduce with JITP
 - Reduce with Continuous record
 - Auto-archive
- **Single or Shared copy**
 - Both are supported
- **Unicast delivery**
 - Provide only what is requested
- **Bursty nature of video delivery introduced...**

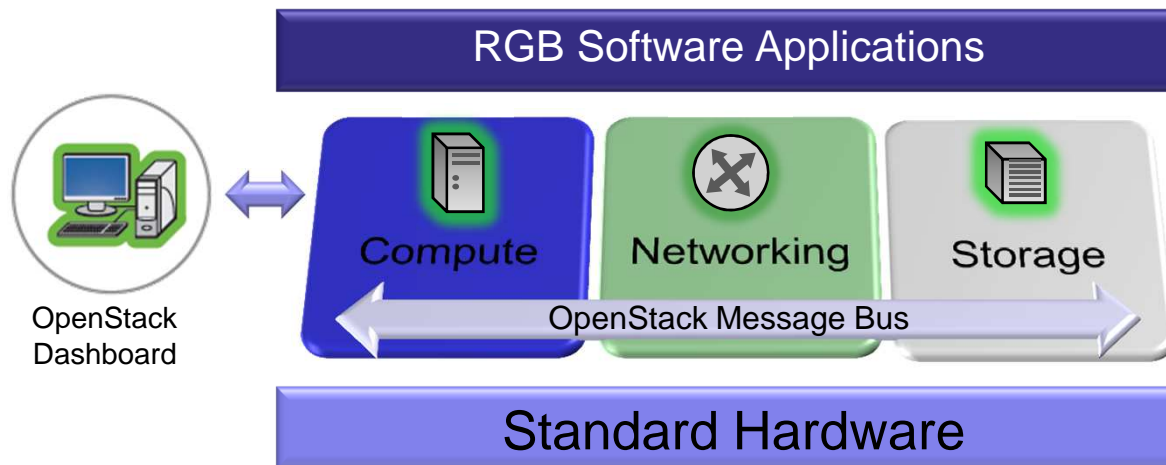
Cloud Video Delivery 1.0



What is OpenStack?

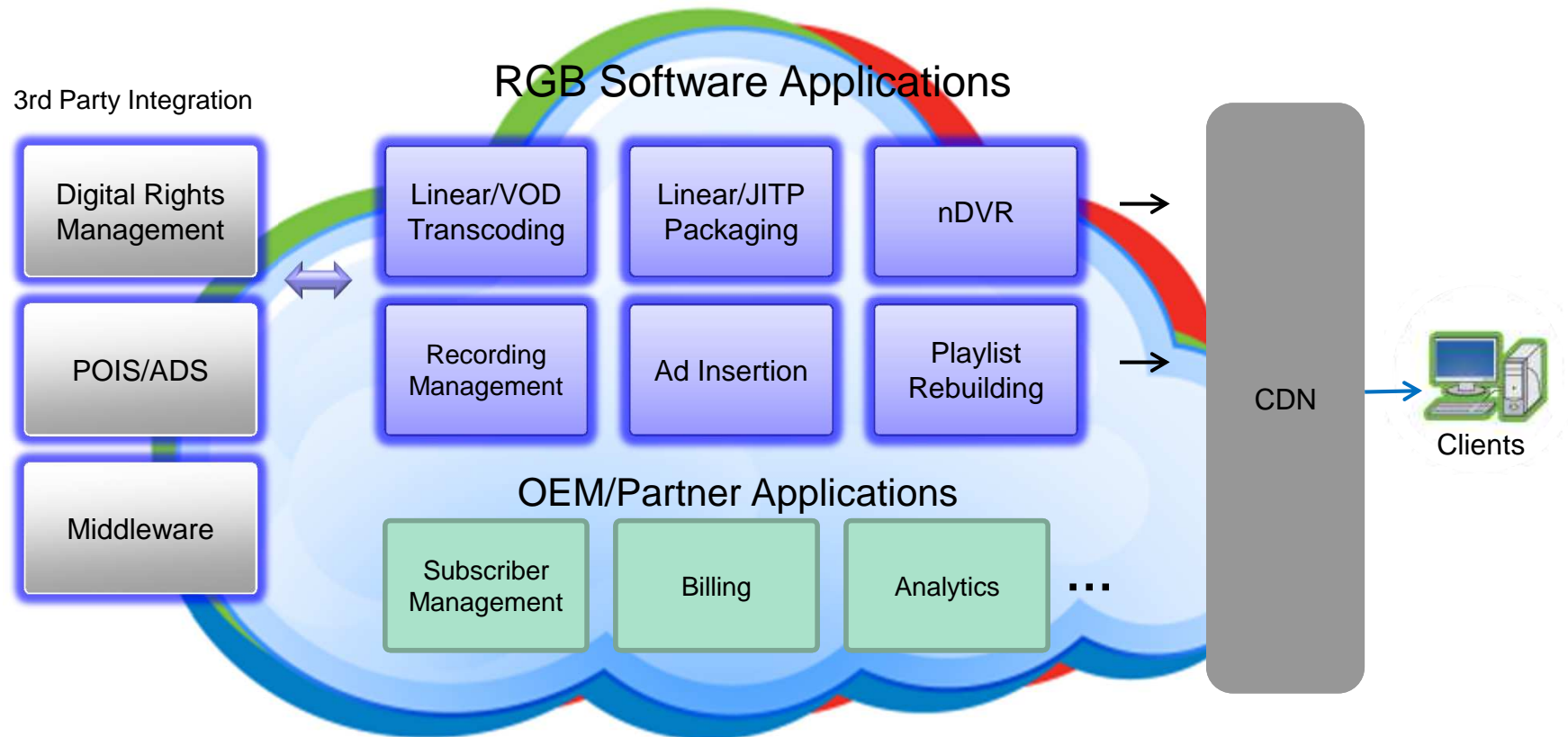
OpenStack is an open source Cloud OS

- Compute
- Networking
- Storage
- Enables Flexible, and scalable Private Clouds
- Portability to the public cloud or other private clouds
- OPEX mgmt savings



More than 200 companies joined the project among which include AT&T, AMD, Brocade, IBM, Cisco, EMC, Dell, Ericsson, RedHat, Rackspace, and others.

RGB CloudXstream – End-to-End Offering



Cloud customer benefits

- **Leverages cloud-based Compute, Network, and Storage efficiencies using the leading open source Cloud OS – Openstack**
- **Eliminates barriers to scalability without compromising quality**
- **Reduces costs of equipment and operations**
- **Supports significant new advertising and other monetization strategies**
- **Enables VSPs to more easily introduce valuable enhancements to their subscription services, such as Cloud/Network DVR (nDVR) time-shift functionalities, personalized navigation and other features**

In Review - nDVR

- **STB-less environment**
- **Serves all screens, including TV**
- **Optimized to reduce costs**
- **New revenue opportunities**
- **Cloud!**



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Thank you