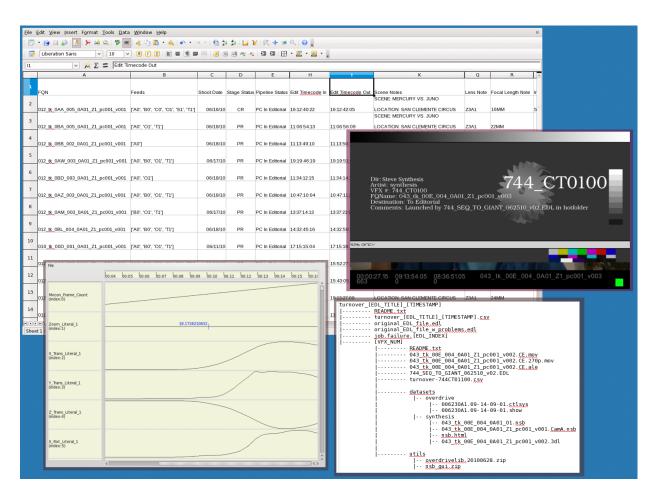# synthesis

► Take management   ► Task automation   ► Digital Asset Management

Tools and architecture for multimedia pipelines

As a **production tool**, Synthesis provides a way to create tasks and track them, whether those tasks consist of multimedia or pure data. As a **programmers framework**, Synthesis speeds up the development of new tasks and gets repetitive or complex jobs done fast.

A multimedia "turnover" of media and meta-data from a motion picture capture session
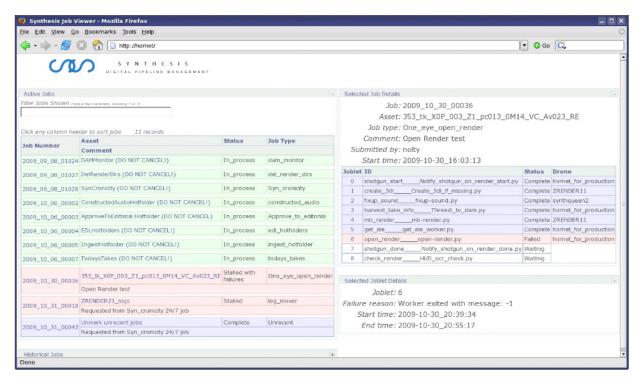
conceptoverdrive.com

Why Synthesis?

In some work environments personnel to do redundant tasks manually, where the automation of those tasks could save man-years of labor costs annually. Tracking those tasks in a database is of great value too.

Some work environments have home-grown approaches to automation. Without careful thought, a data or media pipeline can turn into a hodgepodge of programs and databases, using different languages, frameworks and approaches to problem-solving. As a result, there is limited usability, visibility, extendability, and maintainability.

Synthesis came about to solve these problems. It is a framework for automation tasks, and features central control, status monitoring and history. For programmers, it simplifies and unifies the writing of programs to carry out pipeline tasks.
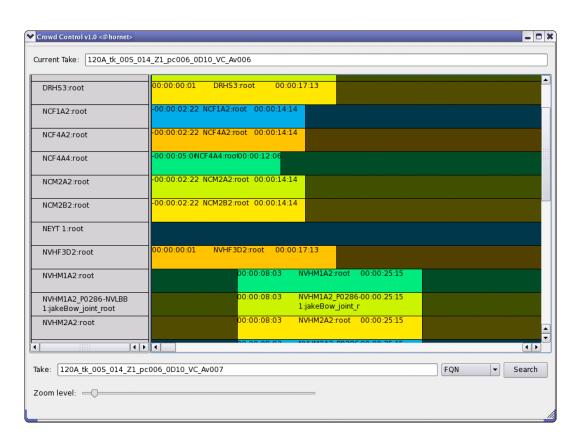
In addition to providing applications for take management and asset management, Synthesis provides a set of programs and programming libraries for sequencing work and parceling work out among different computers. At its core, Synthesis is not specific to media pipelines, though it was designed in that context. In any data pipeline, Synthesis helps automate tasks and keep users informed about the progress of tasks.

The web-based shared "Job-viewer", showing scheduled tasks and their sub-parts
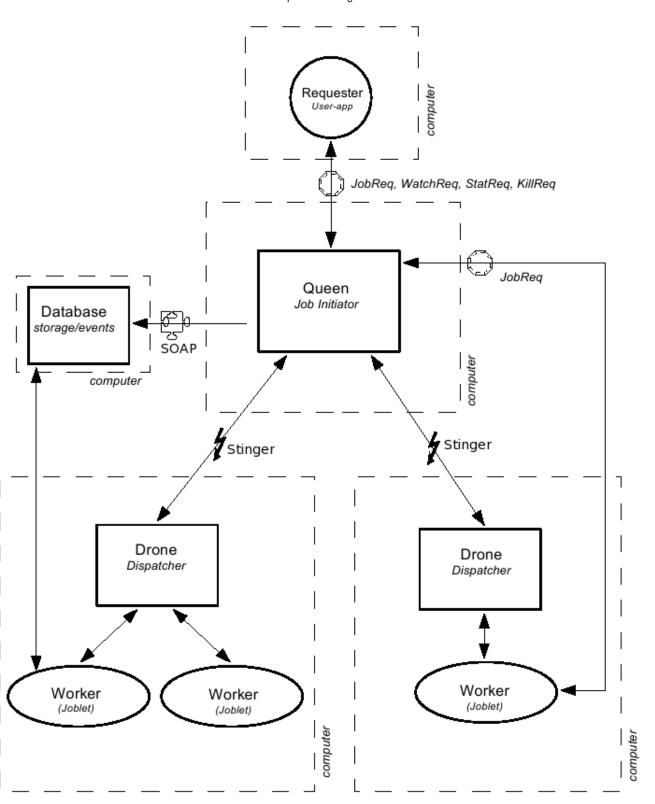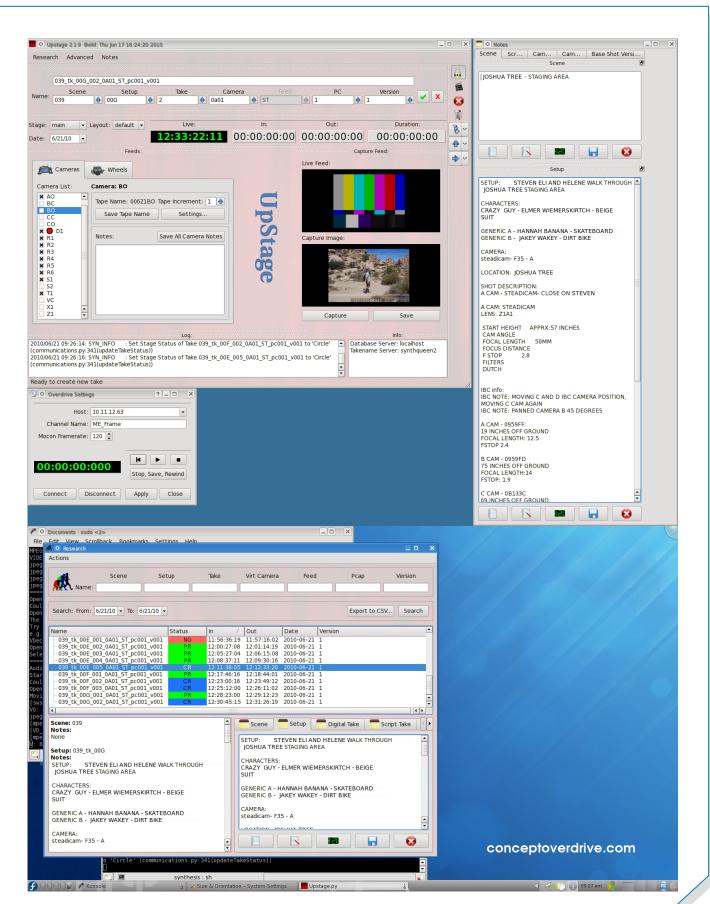
Synthesis provides:

- Applications for Take Management, Asset management & Job tracking

- Task scheduling and a prioritization Server

- Databasing & database interfaces (mySQL/postgresql/Django/SOAP)

- Task monitoring with Web User interface

- Error logging and review facilities

- Multimedia Libraries

- Versioning for data & asset files

- XML, CSV, time-code, and other data libraries

- Cross-platform OS support: Windows, Linux, Mac OSX

- Straightforward programming API for Python & C++

- Dynamic job creation mechanisms

- Tasks for Maya, Motion Builder, Aftereffects, Avid, Final Cut & more

Graphical tool for tracking video clips on a time-line

Synthesis

Pipeline Management

Requester
User-app

computer

JobReq, WatchReq, StatReq, KillReq

JobReq

Queen
Job Initiator

computer

Database
storage/events

SOAP

computer

Stinger

Stinger

Drone
Dispatcher

Drone
Dispatcher

Worker
(Joblet)

Worker
(Joblet)

Worker
(Joblet)

computer

computer

"Upstage" take management and database tool for motion pictures

Synthesis applications:

Synthesis can be used in any environment where there is data generation, manipulation or automation to be done. This includes multimedia, accounting, databasing, medical, and manufacturing realms. Synthesis has been used in the production of major motion pictures such as "Avatar" and "Real Steel", and is also used in the production of Video Gaming content.

Synthesis history:

Concept Overdrive originally developed the Synthesis system for "Avatar", which was the editorial pipeline of the main camera stage. The harvesting of metadata from this mocap stage was largely automated by Synthesis, which assembled assets from multiple departments after each take. The system gathered the data, modified it and rendered it into computer-game resolution video files which were "digital dailies" for the editorial department. A flexible task-sequencing architecture was designed which utilized networked resources to automate the render process. Nearly every CG shot in "Avatar" passed through Synthesis; the renders were the final editorial cut of the film before the high-resolution rendering.

Testimony:

*"I didn't realize until I sat down and detailed what we had planned
for our production - how badly we needed Synthesis automation.
We'd never finish without it!"* — a recent customer

► *Companies which automate can save tens of thousands of dollars per year*

► *Contact us for a custom quotation which suits your pipeline needs*