Chronopolis System Design

The Chronopolis system employs two software suites that interact with each other in order to provide bit-level preservation. The first, **ChronCore**, is a set of services which distribute data throughout the Chronopolis network. These services are named **Intake**, **Ingest**, and **Replication**. The second software suite employed by the Chronopolis network is the **Audit Control Environment (ACE)** which continually audits data in Chronopolis to ensure the integrity of both the checksums and files. **ACE** consists of both an **Audit Manager (ACE-AM)** which runs locally at each network node and an **Integrity Management Service (ACE-IMS)** which is a web service currently hosted by Texas Digital Library (TDL).

In addition to the software used for distributing data through the network, there are additional services for tertiary tasks:

- **Repair** - automates the workflow for correcting file errors within the Chronopolis Network
- **Restore** - automates the workflow for returning data back to a Depositor

ChronCore Services

- Intake
- Ingest
- Replication
- Audit Manager (ACE-AM)
- Repair

Packaging

Data in Chronopolis is packaged using the BagIt specification.

Glossary

Depositor
An institution, person, or conglomerate which is a part of Chronopolis and has data to be stored for bit-level preservation

Ingest
The second distribution service layer which acts as a registry of content and manages where data is distributed in Chronopolis. The process of registering the contents of a bag with the Ingest database, and creating ACE tokens for each file in the bag.

Intake
The first distribution service layer which brings external data into Chronopolis. The process of transferring a bag to a filesystem directory where an Ingest service can process it.

Node
An organization which is part of the Chronopolis Network and stores data for Depositors

Preservation Storage
A filesystem which is used for holding data long term; is continually checked for bit rot

Repair
A service which takes actions to correct any data which has become corrupt at a Chronopolis Node

Replication
The final distribution service layer which transfers data from a staging area into a Preservation storage filesystem

Restore
The action of returning data to a Depositor

Staging Storage
A filesystem which can be used for transient data; not guaranteed to have bit-level preservation