clocksync

Overview

The clocksync bead is a filter bead that uses the information gathered by the timesync bead to propogate a master clock and render clock pair across a network boundary.

DEBUG_ZONE = "/beads/clocksync"

Context Variables

The encode edge requires the following

Path Context Variable	Status	Type	Description
MasterClock	required	sampleclock	Stream master clock
RenderClock	required	sampleclock	Stream sample clock

The decode edge provides the following

Path Context Variable	Status	Type	Description
MasterClock	added	sampleclock	Stream master clock which will return a locally-corrected epoch.
RenderClock	added	sampleclock	Stream render clock with the sample rate copied from the source host.

Implementation

The following prefix is added to each message on encode, and removed on decode:

Field	Type	Description
hostid	SOS_UINT32	Pseudo-random host identifier
epoch	SOS_UINT32	Epoch from Master Clock
frequency	SOS_UINT32	Frequency from Render Clock
divisor	SOS_UINT32	Frequency divisor from Render Clock

This protocol copies only the minimum information necessary to reconstruct the essential clock details on the remote side. Specifically it does not copy the sample rate of the master clock; it propagates only the epoch. Conversely it does not propagate the epoch of the render clock; it propagates only the sample rate.

If the timesync bead cannot provide a time offset for the specified host, clocksync used the session creation time as the epoch.

Beta 2.0

Future implementations may propagate more details of the clocks.

Currently this implementation is only suitable for remote streaming of a non-master channel, because changes made to the master clock by the receiving host are not propagated back across the network boundary. A loopback data path is likely to be added in the future to permit reverse master clock propagation.

HostID's are pseudo-random and may not be globally unique.