

Why does Server Time Protocol (STP) have the wrong time?

Here is a description and solution to a problem that has been seen a few times with Server Time Protocol users.

Assume that all servers in the Server Time Protocol (STP) Coordinated Timing Network (CTN) are down due to either a planned or unplanned outage. For a planned outage, the CTN is brought down via the Deconfigure CTN button on the STP Network Configuration panel, from the PTS/CTS. At that time, all machines still have the CTN ID, but no STP roles are assigned to any machine.

The Problem

When it is time to bring the CTN back up, a different machine in the network is chosen to be the new PTS/CTS. However, the chosen machine unknowingly had an inaccurate Support Element Battery Operated Clock (SE BOC) which set the TOD to the inaccurate time during POR. The operator assumed that all that was needed was to assign the roles (PTS/CTS, BTS and Arbiter), and the network would be up and running. True, but since the new PTS/CTS had the wrong time set in its TOD, the CTN also had the wrong time. The CPC time differed from the ETS time by more than 60 seconds, so that External Time Source (ETS) steering could not be accomplished successfully.

Unfortunately, without knowing the solution, the user could spend hours trying to determine how to “fix” the erroneous time.

The Solution(s)

Option 1

Instead of assigning roles during bring up, the operator should have Initialized Time first via the STP panels, where the TOD can be initialized by an External Time Source (ETS). Then, assign Roles as documented in the STP Implementation Guide Redbook.

Option 2

The operator could have checked (and set) the time in the SE BOC to be as accurate as possible (within 60 seconds of the actual time), and then the External Time Source could have steered STP to the correct time. The SE BOC can only be set if STP is not running.