



STAC Update for Fast Data

Peter Lankford
Founder and Director, STAC

peter.lankford@STACresearch.com

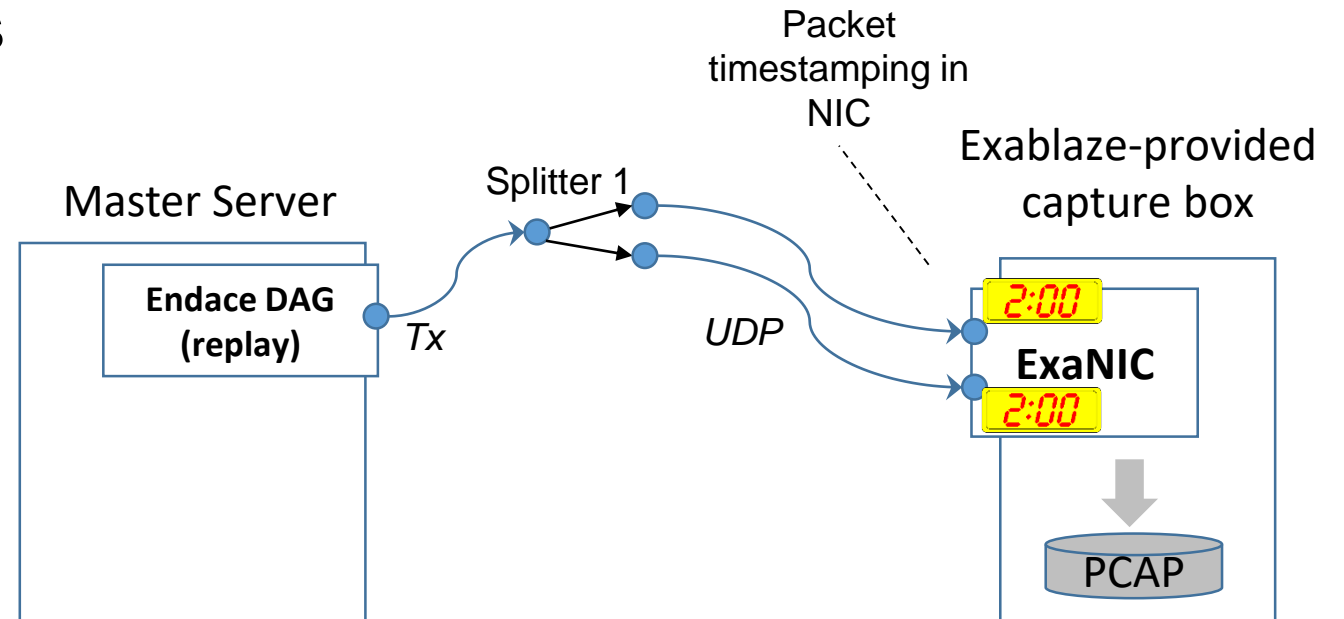
STAC-TS.PSE1: Port-sync error within a device

Methodology:

- Packets arrive at two ports with known skew
- Calculate difference in timestamps

Challenges in this case:

- Exablaze wanted to report in picoseconds



Port synchronization within a single device (picoseconds)

SUT ID: EXA180625

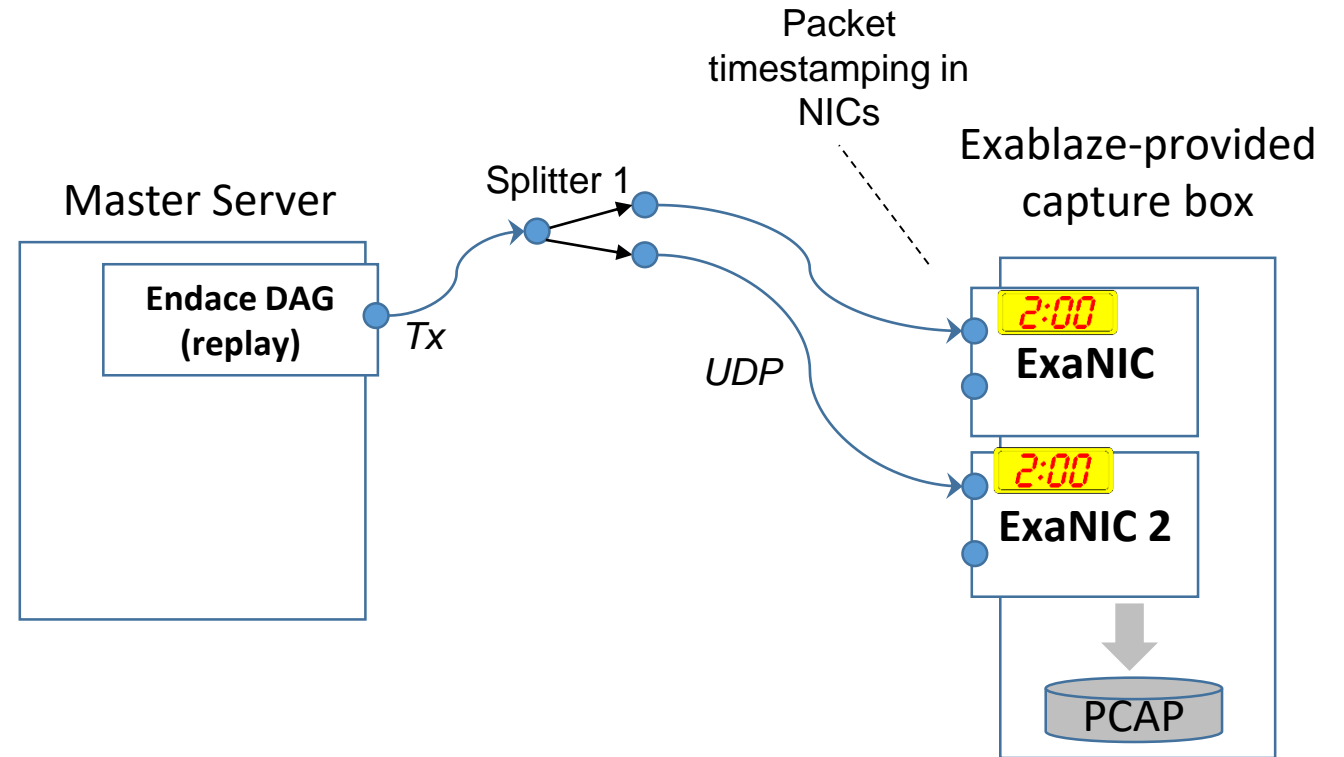
All benchmarks reflect 100% of samples - that is, they are [benchmark].PRED.100

	Skew	Random error	Notes
STAC-TS.PSE1.TOTAL	0	+/- 375	Worst case port sync within a single device, based on port pair with the largest total error magnitude (skew + random error).
STAC-TS.PSE1.RAND.WORST	0	+/- 375	Worst case random port-sync error (i.e., error that cannot be calibrated out).
STAC-TS.PSE1.RAND.BEST	0	+/- 375	Best case random port-sync error (i.e., error that cannot be calibrated out).

STAC-TS.PSE2: Port-sync error between two devices

Methodology:

- Same as STAC-TS.PSE1, but
- Measure between “anchor ports” on two devices
- Use STAC-TS.PSE1 results to extrapolate between non-measured ports



Port synchronization across two devices (picoseconds)

SUT ID: EXA180625

All benchmarks reflect 100% of samples - that is, they are [benchmark].PRED.100

	Skew	Random error	Notes
STAC-TS.PSE2.TOTAL	-750	+/- 1875	Worst case port sync between a port on Device 1 and a port on Device 2, based on the port pair with the largest total error magnitude (skew + random error).
STAC-TS.PSE2.RAND.WORST	n/a	+/- 1875	Worst case random port-sync error between a port on Device 1 and a port on Device 2 (i.e., error that cannot be calibrated out).
STAC-TS.PSE2.RAND.BEST	n/a	+/- 1125	Best case random port-sync error between a port on Device 1 and a port on Device 2 (i.e., error that cannot be calibrated out).