

Front-end Group - Support #25041

Timestamps between front-ends for a given event are not the same

10/01/2020 11:14 AM - Beau Harrison

Status:	New	Start date:	10/01/2020
Priority:	Normal	Due date:	
Assignee:		% Done:	0%
Category:		Estimated time:	0.00 hour
Target version:			

Description

This is copied from a GitHub repo, <https://github.com/fermi-controls/timestamp-synchrony/blob/main/results/README.md>

The assumptions here are that when a request is made across multiple front-ends on the same event, in this case \$02, that the timestamps be the same. This includes being within the same ms.

Curated Results

These are a collection of observations from the [raw output](./rawOutput.txt).

Future Efforts

Dennis Nicklaus recommended running the test again and comparing the results for consistency.

Unresponsive Nodes

These nodes weren't marked as down but a request on event to it's guaranteed readable device didn't respond.

Node	Guaranteed Readable
----	-----
AILAB	Z:PDSINE
BBLOND	U:TSTADC
DBPM10	U:TSTD96
DBPM20	U:TSTD97
DBPM30	U:TSTD98
DBPM40	U:TSTD99
DBPM50	U:TSTD9A
DBPM60	U:TSTD9B
IDAMP	I:DMPGUA
IRM562	Z:S562SR
IRM571	G:S571SR
IRM586	E:S586SR
IRM588	E:S588SR
LIP628	L:S628SR
LIP728	L:S728SR
MIMISC	Z:MIMISC
MIWIRS	Z:MIWIRS
N60TOR	E:TOR101
NMLBBM	Z:NMLBBM
NMLTR2	U:TSTD9C

NUMIHN	U:VIDBB4
QXRTEV	S:NQXFSM
RCYSCH	Z:RCYSCH
RRXDMP	R:UPTBEB
SBPMF3	G:0C05V0
TBLMF1	U:VIDC7C
TBLMF2	U:VIDC7D
TBLMF3	U:VIDC7E
TBLMF4	U:VIDC7F
TESTZY	Z:TESTZY
UBLM10	U:VIDC67
UBLM30	U:VIDC69
UBLM3A	U:VIDC7A
UBLM3B	U:VIDC68
UBLM50	U:VIDC6B
UBLMM4	U:VIDC66

Duplicate Guaranteed Readable Device

There is evidence of duplicate guaranteed readable devices being use. This shouldn't be the case.

Node	Guaranteed Readable
----	-----
BOOSTR	B:SLD1
BOOST1	B:SLD1

`BOOST1` is the new name of `BOOSTR` so `BOOSTR` is an alias for `BOOST1`. This is a case where duplicate guaranteed readable devices is understood to be ok.

Timestamps

The modal timestamp was determined to be `1601496697594 UTC`.

Summary Count of Timestamps and Deltas

This is a list of deltas calculated from the modal delta and a count of how many instances of each delta were found. The idea is that common operating modes may influence how far from accurate a timestamp is. So, finding common modes amongst these deltas could point to a problem.

Timestamp	Delta	Count (⌈)		Timestamp (⌈)	Delta	Count
-----	----	-----	-	-----	----	-----
1601496697594	0	428		538037594	-160095866000 0	1
1601496697608	14	27		29490775594	-157200592200 0	1
1601496697595	1	17		1600514811608	-981885986	3
1601496696794	-800	11		1600859632774	-637064820	1
1601496697600	6	7		1600859632799	-637064795	1
1601496697699	105	3		1601496624594	-73000	1

1601496697607	13	3		1601496671595	-25999	1
1601496697593	-1	3		1601496682594	-15000	1
1601496696793	-801	3		1601496685594	-12000	1
1600514811608	-981885986	3		1601496692600	-4994	1
1601496696727	-867	2		1601496692973	-4621	1
1601498638862	1941268	1		1601496692977	-4617	1
1601496829594	132000	1		1601496692997	-4597	1
1601496697649	55	1		1601496692999	-4595	1
1601496697629	35	1		1601496693014	-4580	1
1601496697596	2	1		1601496693015	-4579	1
1601496697578	-16	1		1601496693246	-4348	1
1601496694462	-3132	1		1601496693269	-4325	1
1601496693324	-4270	1		1601496693281	-4313	1
1601496693309	-4285	1		1601496693282	-4312	1
1601496693289	-4305	1		1601496693283	-4311	1
1601496693288	-4306	1		1601496693288	-4306	1
1601496693283	-4311	1		1601496693289	-4305	1
1601496693282	-4312	1		1601496693309	-4285	1
1601496693281	-4313	1		1601496693324	-4270	1
1601496693269	-4325	1		1601496694462	-3132	1
1601496693246	-4348	1		1601496696727	-867	2
1601496693015	-4579	1		1601496696793	-801	3
1601496693014	-4580	1		1601496696794	-800	11
1601496692999	-4595	1		1601496697578	-16	1
1601496692997	-4597	1		1601496697593	-1	3
1601496692977	-4617	1		1601496697594	0	428
1601496692973	-4621	1		1601496697595	1	17
1601496692600	-4994	1		1601496697596	2	1
1601496685594	-12000	1		1601496697600	6	7
1601496682594	-15000	1		1601496697607	13	3
1601496671595	-25999	1		1601496697608	14	27
1601496624594	-73000	1		1601496697629	35	1
1600859632799	-637064795	1		1601496697649	55	1
1600859632774	-637064820	1		1601496697699	105	3
29490775594	-157200592200 0	1		1601496829594	132000	1
538037594	-160095866000 0	1		1601498638862	1941268	1

Nodes Grouped By Delta

The idea here is that nodes with a common implementation may have a similar timestamp offset.

Delta	Nodes
-----	-----
1	CMLLRF, E906MW, HTSK13, HTSK39, HWRRFI, NMGUNI, NMGWIL, NMLBP2, NMLBP3, NMLGP1, NMLHOM, NMLLD1,

	NMLRFI, P2ITB1, STCRFI, UCDHIN, XTBP1
2	HINSMC
6	BADMAB, MILLRF, MRF, NBPB65, NBPM6N, NBPM6S, NBPMOV
13	CMTIL1, CMTIL2, CMTIL3
14	AP0TOR, BOOST1, BOOST2, BOOSTR, MCRBCC, MESON, MI1, MI2, MI3, MI4, MUONFE, MWF2P3, MWIRE0, MWIRE1, MWIRE2, MWIRE3, MWMB10, MWMB12, MWMS1, MWMTA, NEUTR, NUMI, QXRMI, SWICT, SWYD, TCLK, TEVA
35	NMLWPM
55	IRM593
105	MT1, PXMC1, PXMC2
132000	AP5001
1941268	MES653
-637064820	BOODAM
-637064795	BPM399
-4325	BPM400
-4580	CLX38
-1	EVENTH, EVENTN, LRHVAC
-16	MRFD
-800	IRM58E, IRM64E, NML655, NML656, NML657, NML658, NML659, NML65A, NML65B, NML65C, NML65D
-801	NML654, PXE690, PXE691
-867	CMT60A, CMT60B
-3132	LVTEST
-4285	NMLA
-4270	UCDNML
-4305	??
-4306	OTISVW
-4311	SSRRFI
-4312	XMLRPC
-4313	NMLTOR
-4348	IOTASR
-4579	SSRRFJ
-4595	MWDIPM
-4597	MTACH
-4617	VMEJEF
-4621	RRLLD
-4994	TLGTST
-12000	PRBOPR
-15000	TLG
-25999	NMLTRG
-73000	RRLINV
-981885986	MWMI14, NMAAT, NUMI65
-1572005922000	SRFLPR
-1600958660000	BLLRFD

Keepers Grouped By Delta

The idea here is that particular delta may be associate with the node keeper.

Delta	Keepers
-----	-----
1941268	Mike Kucera
132000	Jerry Firebaugh
105	Rich Neswold, Rich Neswold, Rich Neswold
55	Mike Kucera
35	Nathan Eddy
14	John Diamond, Rich Neswold, Rich Neswold, Rich Neswold, Rich Neswold, Rich Neswold, Rich Neswold, Rich Neswold, Rich Neswold, Rich Neswold, Rich Neswold, Jianming You, Jianming You, Jianming You, Jianming You, Jianming You, Jianming You, Jianming You, Jianming You, Rich Neswold, Rich Neswold, Jerry Firebaugh, Jianming You, Rich Neswold, Rich Neswold, Rich Neswold
13	Dennis Nicklaus, Dennis Nicklaus, Dennis Nicklaus
6	Kevin Martin, Philip Varghese, Ed Cullerton, John Diamond, John Diamond, John Diamond, John Diamond
2	Rich Neswold
1	Philip Varghese, Jianming You, Dennis Nicklaus, Dennis Nicklaus, Dennis Nicklaus, Dennis Nicklaus, Dennis Nicklaus, David Slimmer, David Slimmer, Jerry Firebaugh, Dennis Nicklaus, Rich Neswold, Dennis Nicklaus, John Diamond, Dennis Nicklaus, Rich Neswold, John Diamond
-1	Charlie King, Charlie King, Jerry Firebaugh
-16	Ed Cullerton
-800	Mike Kucera, Mike Kucera, Mike Kucera, Mike Kucera, Mike Kucera, Mike Kucera, Mike Kucera, Mike Kucera, Mike Kucera, Mike Kucera, Mike Kucera, Mike Kucera
-801	Mike Kucera, Mike Kucera, Mike Kucera
-867	Mike Kucera, Mike Kucera
-3132	Jianming You
-4270	Rich Neswold
-4285	Rich Neswold
-4306	Randy Thurman-Keup
-4305	Jianming You
-4311	Dennis Nicklaus
-4312	Charlie King
-4313	John Diamond
-4325	Jianming You
-4348	Randy Thurman-Keup
-4579	Dennis Nicklaus
-4580	Denise Finstrom
-4595	Jianming You
-4597	Jianming You
-4617	Nathan Eddy

-4621	Brian Chase
-4994	Linden Carmichael
-12000	Ed Cullerton
-15000	Linden Carmichael
-25999	John Diamond
-73000	Ed Cullerton
-637064795	Jianming You
-637064820	Dennis Nicklaus
-981885986	Jianming You, Jianming You, Jianming You
-1572005922000	Rich Neswold
-1600958660000	William Pellico

Software Grouped By Delta

The idea here is that particular delta may be associate with the node software. Preferably we know the timing driver and version for these nodes so we get a better idea of if there is an implementation error.

Delta	Software
-----	-----
1	MOOC, MOOC, MOOC, MOOC, MOOC, MOOC, MOOC, MOOC, MOOC, MOOC, MOOC, MOOC, ACSys/FEF, MOOC, MOOC, MOOC
-1	Java, Java, Java
2	MOOC
6	MOOC, MOOC, MOOC, MOOC, MOOC, MOOC, MOOC
13	MOOC, MOOC, MOOC
14	MOOC, MOOC
-16	MOOC
35	MOOC
55	IRM
105	MOOC, MOOC, MOOC
-800	IRM, IRM, IRM, IRM, IRM, IRM, IRM, IRM, IRM, IRM, IRM
-801	IRM, IRM, IRM
-867	IRM, IRM
-3132	Java
-4285	MOOC
-4270	MOOC
-4305	Java
-4306	MOOC
-4311	MOOC
-4312	Java
-4313	MOOC
-4325	MOOC
-4348	MOOC

-4579	MOOC
-4580	Acnet-NG
-4595	MOOC
-4597	MOOC
-4617	MOOC
-4621	MOOC
-4994	MOOC
-12000	MOOC
-15000	MOOC
-25999	MOOC
-73000	MOOC
132000	MOOC
1941268	IRM
-637064795	MOOC
-637064820	MOOC
-981885986	MOOC, MOOC, MOOC
-1572005922000	MOOC
-1600958660000	MOOC

History

#1 - 10/01/2020 01:57 PM - Dennis Nicklaus

SRFLPR (Rich) and BLLRFD (Pellico) currently show system dates in 1970. I didn't see any obvious attempts at periodic time updating/syncing in their startup scripts.