

Forensic Link Adapter Report

University of Tulsa

800 S Tucker Dr
Tulsa, OK 74104

Data Package obtained with FLA 1B2R90058 (None) on Thu Aug 27 2015 21:23:41 -00:00

The operators assigned to this FLA are: Amila Perera (amila-perera@utulsa.edu) , Jeremy Daily (jeremy-daily@utulsa.edu)

Status of the FLA's subscription: **expires in 11 months (July 19, 2016)**

The results on this page haven't been validated. The user is advised to check information against other sources.



Report Notes

no one has made any notes

Vehicle Information

Engine #1 from J1587

Make	CTRPL
Model	C-15
Serial Number	NZ188
Vehicle Odometer	641480.4 miles
Engine Hours	17850.00
VIN	1XP5dB9x61D532271

Vehicle OEM Data

Vehicle ID	1XP5dB9x61D532271
Engine serial number	6NZ18866
Quick Stop Rate	7.00

Time Records

FLA Time When User Indicates They Have Permission	Thu Aug 27 2015 21:23:41 -00:00
FLA Time When Download Complete	Thu Aug 27 2015 21:29:28 -00:00
Duration of Download	00:05:46 (346 seconds)
Time the FLA System Time was last set	Sun Jul 19 2015 17:24:30 -00:00
ECM Internal Clock Time	Thu Aug 27 2015 16:24:11 -00:00
FLA Time When ECM Clock Was Read	Thu Aug 27 2015 21:24:17 -00:00
Time Difference (FLA minus ECM)	05:00:06 (18006 seconds)
Server Time when Data Package was Uploaded	Thu Aug 27 2015 21:29:57 -00:00

GPS Sat Time at Last GPS Lock

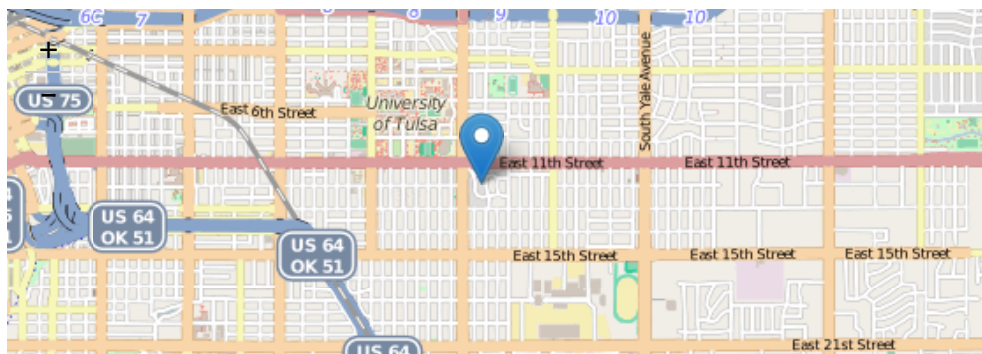
Wed Aug 26 2015 18:06:36 -00:00

FLA System Time at Last GPS Lock

Wed Aug 26 2015 18:06:07 -00:00

GPS Data - lat:36.146057, long:-95.938545

1220, South Jamestown Avenue, Tulsa, Tulsa County, Oklahoma, 74112, United States of America



Leaflet | © OpenStreetMap contributors

Historical Data

Historical data are things that can be counted during the use of the vehicle such as time, mileage, and fuel usage. This also includes logging features and trip information.

Data from Source Address 0 (Engine #1) on the J1939 Network

PGN	PGN Name	SPN	SPN Name	Value	Units	Raw Hex Data
65217	VDHR	917	High Resolution Total Vehicle Distance	1032362940	meters	8C 85 4E 0C FF FF FF FF
		918	High Resolution Trip Distance	not available	meters	
65266	LFE1	185	Engine Average Fuel Economy	0.115	miles/gallon	00 00 00 00 19 00 FF FF

Data from MID 128 (Engine #1) on the J1587 Network

PID	PID Name	Value	Units	Raw Data
185	Average Fuel Economy	0.117	mpg	1E 00
235	Total Idle Hours	4348.55	hours	BB 53 01 00
236	Total Idle Fuel Used	1769.500	gallons	4C 37 00 00
245	Total Vehicle Distance	641480.4	miles	D4 E1 61 00
247	Total Engine Hours	17850.00	hours	88 72 05 00
248	Total PTO Hours	0.00	hours	00 00 00 00
250	Total Fuel Used	104721.125	gallons	89 C8 0C 00

CAT Historical Data

[Download CSV Table](#)

Name	Value
Total fuel	104721.12
Last tool to change customer configuration	ETK07252
Total Max Fuel	244205.75
Trip MPG	0.00
Total idle time	4348:33
trip miles	0.00
trip time	17850:00
Total tattletale	126.00
Total miles	641480.40
Last tool to change system configuration	ET550975

Configuration Data

Configuration data has values that relate to the configuration of various modules on the vehicle.

Data from Source Address 0 (Engine #1) on the J1939 Network

PGN	PGN Name	SPN	SPN Name	Value	Units	Raw Hex Data
65214	EEC4	3671	Crank Attempt Count on Present Start Attempt	not available	count	C0 02 40 38 FF FF FF FF
		166	Engine Rated Power	472.040	hp	
		189	Engine Rated Speed	1800.000	rpm	
		5465	Engine Intake Manifold Pressure Control Mode	not available	binary bit-mapped	
		3669	Engine Rotation Direction	not available	binary bit-mapped	
65251	EC1	1712	Engine Extended Range Requested Speed Control Range Upper Limit (Engine configuration)	not available	rpm	C0 12 AE 40 38 D5 40 1F DD 80 25 E0 00 32 DF 40 42 FF FF 64 09 C0 4E FA FF FF FF FF FF FF 90 01
		3348	Support TSC1 Control Purpose Group 4	not defined	binary bit-mapped	
		3346	Support TSC1 Control Purpose Group 2	not defined	binary bit-mapped	
		3347	Support TSC1 Control Purpose Group 3	not defined	binary bit-mapped	
		3344	Support Variable Rate TSC1 Message	not defined	binary bit-mapped	

3345	Support TSC1 Control Purpose Group 1	not defined	binary bit-mapped
542	Engine Percent Torque At Point 4 (Engine Configuration)	99	%
543	Engine Percent Torque At Point 5 (Engine Configuration)	98	%
540	Engine Percent Torque At Point 2 (Engine Configuration)	88	%
541	Engine Percent Torque At Point 3 (Engine Configuration)	96	%
544	Engine Reference Torque (Engine Configuration)	1773.099	ft lb
545	Engine Gain (Kp) Of The Endspped Governor (Engine Configuration)	not available	%/rpm
188	Engine Speed At Idle, Point 1 (Engine Configuration)	600.000	rpm
528	Engine Speed At Point 2 (Engine Configuration)	1800.000	rpm
529	Engine Speed At Point 3 (Engine Configuration)	1000.000	rpm
1794	Engine Moment of Inertia	37.969	lb ft^2
1846	Engine Default Torque Limit	0.000	ft lbs
537	Engine Requested Torque Control Range Lower Limit (Engine Configuration)	not available	%
536	Engine Requested Speed Control Range Upper Limit (Engine Configuration)	not available	rpm
535	Engine Requested Speed Control Range Lower Limit (Engine Configuration)	not available	rpm
534	Engine Maximum Momentary Override Time Limit (Engine Configuration)	25.0	Seconds
533	Engine Maximum Momentary Override Speed, Point 7 (Engine Configuration)	2520.000	rpm
532	Engine Speed At High Idle, Point 6 (Engine Configuration)	2120.000	rpm
531	Engine Speed At Point 5 (Engine Configuration)	1600.000	rpm
530	Engine Speed At Point 4 (Engine Configuration)	1200.000	rpm
539	Engine Percent Torque At Idle, Point 1 (Engine Configuration)	49	%
538	Engine Requested Torque Control	not	%

			Range Upper Limit (Engine Configuration)	available		
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Data from Source Address 15 (Retarder - Engine) on the J1939 Network

PGN	PGN Name	SPN	SPN Name	Value	Units	Raw Hex Data
65249	RC	902	Retarder Location	(primary) engine compression release brake (engine rpm)	binary bit-mapped	03 03 00 19 72 C0 5D 44 A0 28 64 E0 47 44 C0 5D D0 07 44
		901	Retarder Type	compression release (engine retarder)	binary bit-mapped	
		555	Percent Torque At Peak Torque, Point 5 (Retarder Configuration)	-57	%	
		554	Percent Torque At Point 4 (Retarder Configuration)	-57	%	
		557	Retarder Control Method (Retarder Configuration)	3	step	
		556	Reference Retarder Torque (Retarder Configuration)	2000	Nm	
		551	Percent Torque At Idle, Point 1 (Retarder Configuration)	-11	%	
		550	Retarder Speed At Point 4 (Retarder Configuration)	2300.000	rpm	
		553	Percent Torque At Point 3 (Retarder Configuration)	-25	%	
		552	Percent Torque At Maximum Speed, Point 2 (Retarder Configuration)	-57	%	
		546	Retarder Speed At Idle, Point 1 (Retarder Configuration)	800.000	rpm	
		547	Retarder Speed At Peak Torque, Point 5 (Retarder Configuration)	3000.000	rpm	
		548	Maximum Retarder Speed, Point 2 (Retarder Configuration)	3000.000	rpm	
		549	Retarder Speed At Point 3 (Retarder Configuration)	1300.000	rpm	

Data from MID 128 (Engine #1) on the J1587 Network

PID	PID Name	Value	Units	Raw Data
74	Maximum Road Speed Limit	65.0	mph	82
87	Cruise Control High-Set Limit Speed	65.0	mph	82
88	Cruise Control Low-Set Limit Speed	35.0	mph	46
166	Rated Engine Power	472.0	hp	D8 01
187	Power Takeoff Set Speed	0.00	rpm	00 00
188	Idle Engine Speed	600.00	rpm	60 09
189	Rated Engine Speed	2120.00	rpm	20 21
234	Software Identification	2707067-00*MAY05		32 37 30 37 30 36 37 2D 30 30 2A 4D 41 59 30 35
237	Vehicle Identification Number	1XP5dB9x61D532271		31 58 50 35 64 42 39 78 36 31 44 35 33 32 32 37 31
243	Component Identification	CTRPL*C-15 *NZ188		43 54 52 50 4C 2A 43 2D 31 35 20 2A 4E 5A 31 38 38

CAT Configuration Data

[Download CSV Table](#)

Name	Value
Soft Vehicle Speed Limit	0.00
A/C Pressure Switch Fan-On Time	180.00
Gear Down Protection RPM Limit	1900.00
Idle Shutdown Timer Max RPM	2120.00
Idle/PTO RPM Ramp Rate	50.00
Intermediate Gears Turn Off Speed	45.00
Top Gear Ratio	0.740
Vehicle ID	1XP5dB9x61D532271
Personality partnumber	2707067-00
Engine serial number	6NZ18866
Top Gear Minus One Ratio	1.000
Top Engine Limit with Droop	0.00
Lower Gears Turn Off Speed	10.00
FTS (Full torque setting)	-125.00
Idle/PTO Bump RPM	20.00
Lower Gears Engine RPM Limit	1900.00
Vehicle Speed Calibration	29541.00
Intermediate Gears Engine RPM Limit	1900.00
Vehicle Speed Limit	65.00
FLS (Full load setting)	93.00
High Cruise Control Speed Set Limit	65.00
Quick Stop Rate	7.00
Idle Shutdown Time	5.00
Software date code	MAY05
Gear Down Protection Turn On Speed	120.00
Driver Reward Enable	Enabled
Top Gear Minus Two Ratio	1.387
Idle/PTO Vehicle Speed Limit	2.00
Minimum Idle Time	5.00
Tachometer Calibration	113.00
Top Engine Limit	2120.00
Low Cruise Control Speed Set Limit	35.00
Vehicle Speed Limit Protection	1900.00
Two Speed Axle Switch Configuration	140.00
Ecm serial number	21736103IK
Low Idle Engine RPM	600.00
Idle RPM Limit	1400.00

SAE J1587 Fault Trouble Code Data

Fault data from the J1587 network consists of Parameter Identifications (PIDs) 194 (0xC2) and 196 (0xC4). PID 194 lists codes and their statuses, along with the Failure Mode Identification (FMI). PID 196 provides additional information, either an ASCII string or OEM data, for a code. A code is either the Subsystem Identification (SID) or PID related to the issue on the vehicle.

Diagnostic Codes (PID 194) from MID 128 (Engine #1)

Code	Code Name	Failure Mode	Occurance Count	Status
91	Percent Accelerator Pedal Position	Abnormal frequency, pulse width, or period	not available	active
102	Boost Pressure	Voltage above normal or shorted high	not available	active
231	SAE J1939 Data Link	Bad intelligent device or component	not available	active
252	Calibration Module	Failure mode not identifiable	not available	active
253	Calibration Memory	Data erratic, intermittent, or incorrect	not available	active
Raw Data	C2 0A 5B 28 66 23 E7 3C FC 3B FD 32			

SAE J1939 Fault Trouble Code Data

Fault data from the J1939 network consists of Diagnostic Messages (DMs) DM1, DM2, DM4, DM5, DM6, DM21, DM26. The Lamp Status table will always reflect the state of the lamps when the data was collected regardless of what category it is rendered under. i.e. The lamp status under Previously Active Faults (DM2) will reflect the lamp states when the data was collected, not when the faults were active.

Data from Source Address 0 (Engine #1)

Active DTCs: PGN 65226 (DM1)

Amber Warning Lamp	Red Stop Lamp	Malfunction Indication Lamp	Protect Lamp
On, do not flash	Off	Off	Off

SPN	SPN Name	FMI Name	FMI Severity
639	J1939 Network #1, Primary Vehicle Network (previously SAE J1939 Data Link)	Bad Intelligent Device Or Component	N/A
91	Accelerator Pedal Position 1	Abnormal Frequency, Pulse Width or Period	N/A
102	Engine Intake Manifold #1 Pressure	Voltage Above Normal, or Shorted To High Source	N/A
630	Calibration Memory	Data Erratic, Intermittent or Incorrect	N/A
631	Calibration Module	Root Cause Not Known	N/A
Raw Data	04 FF 7F 02 0C 7F 5B 00 08 7F 66 00 03 43 76 02 02 00 77 02 0B 02		

Live Status Data

Live data is not a part of any other category. It includes things like engine RPM, vehicle speed, and brake status.

Data from Source Address 0 (Engine #1) on the J1939 Network

PGN	PGN Name	SPN	SPN Name	Value	Units	Raw Hex Data
61443	EEC2	1437	Road Speed Limit Status	not available	binary bit-mapped	FF 00 00 FF FF FF FF FF
		974	Remote Accelerator Pedal Position	not available	%	
		559	Accelerator Pedal Kickdown Switch	not available	binary bit-mapped	
		558	Accelerator Pedal 1 Low Idle Switch	not available	binary bit-mapped	
		5400	SCR Thermal Management Active	do not care	binary bit-mapped	
		5021	Momentary Engine Maximum Power Enable Feedback	do not care	binary bit-mapped	
		5399	DPF Thermal Management Active	do not care	binary bit-mapped	
		5398	Estimated Pumping - Percent Torque	not available	%	
		29	Accelerator Pedal Position 2	not available	%	
		3357	Actual Maximum Available Engine - Percent Torque	not available	%	
		2979	Vehicle Acceleration Rate Limit Status	not available	binary bit-mapped	
		91	Accelerator Pedal Position 1	0.0	%	
		2970	Accelerator Pedal 2 Low Idle Switch	not available	binary bit-mapped	
		92	Engine Percent Load At Current Speed	0	%	
61444	EEC1	4154	Actual Engine - Percent Torque High Resolution	out of range	%	F0 7D 7D 00 00 00 FF 9A
		2432	Engine Demand - Percent Torque	29	%	
		190	Engine Speed	0.000	rpm	
		1483	Source Address of Controlling Device for Engine Control	0	SA	
		899	Engine Torque Mode	low idle governor/no request (default mode)	binary bit-mapped	
		1675	Engine Starter Mode	not available	binary bit-mapped	
		513	Actual Engine - Percent Torque	0	%	
		512	Driver's Demand Engine - Percent Torque	0	%	
65262	ET1	52	Engine Intercooler Temperature	not available	deg F	82 46 FF FF FF FF FF FF
		1134	Engine Intercooler Thermostat Opening	not available	%	

		110	Engine Coolant Temperature	194.0	deg F	
		176	Engine Turbocharger Oil Temperature	not available	deg F	
		175	Engine Oil Temperature 1	not available	deg F	
		174	Engine Fuel Temperature 1	86.0	deg F	
65263	EFL/P1	22	Engine Extended Crankcase Blow-by Pressure	not available	psi	FF FF FF 84 FF FF FF FA
		98	Engine Oil Level	not available	%	
		109	Engine Coolant Pressure	not available	psi	
		111	Engine Coolant Level	100.0	%	
		100	Engine Oil Pressure	76.580	psi	
		101	Engine Crankcase Pressure	not available	psi	
		94	Engine Fuel Delivery Pressure	not available	psi	
65265	CCVS1	976	PTO Governor State	off/disabled	binary bit-mapped	CC 00 00 50 00 00 00 FF
		966	Engine Test Mode Switch	not available	binary bit-mapped	
		1633	Cruise Control Pause Switch	off	binary bit-mapped	
		595	Cruise Control Active	cruise control switched off	binary bit-mapped	
		527	Cruise Control States	off / disabled	binary bit-mapped	
		597	Brake Switch	brake pedal depressed	binary bit-mapped	
		596	Cruise Control Enable Switch	cruise control disabled	binary bit-mapped	
		599	Cruise Control Set Switch	cruise control activator not in the position -set-	binary bit-mapped	
		598	Clutch Switch	clutch pedal depressed	binary bit-mapped	
		3807	Park Brake Release Inhibit Request	unavailable	binary bit-mapped	
		602	Cruise Control Accelerate Switch	cruise control activator not in the position -accelerate-	binary bit-mapped	
		968	Engine Idle Increment Switch	not available	binary bit-mapped	
		967	Engine Idle Decrement Switch	not available	binary bit-mapped	
		1237	Engine Shutdown Override Switch	not available	binary bit-mapped	
		70	Parking Brake Switch	not available	binary bit-mapped	
		69	Two Speed Axle Switch	low speed range	binary bit-mapped	
		601	Cruise Control Resume Switch	cruise control activator not in	binary bit-	

				the position -resume-	mapped	
		86	Cruise Control Set Speed	0.000	mph	
		84	Wheel-Based Vehicle Speed	0.000	mph	
		600	Cruise Control Coast (Decelerate) Switch	cruise control activator not in the position -coast-	binary bit-mapped	
65266	LFE1	3673	Engine Throttle Valve 2 Position	not available	%	00 00 00 00
		51	Engine Throttle Valve 1 Position	not available	%	19 00 FF FF
		184	Engine Instantaneous Fuel Economy	0.000	miles/gallon	
		183	Engine Fuel Rate	0.000	gallons/hour	
65270	IC1	173	Engine Exhaust Gas Temperature	not available	deg F	FF 00 7D FF
		112	Engine Coolant Filter Differential Pressure	not available	psi	FF FF FF FF
		102	Engine Intake Manifold #1 Pressure	0.000	psi	
		81	Engine Diesel Particulate Filter Intake Pressure	not available	psi	
		106	Engine Air Intake Pressure	not available	psi	
		107	Engine Air Filter 1 Differential Pressure	not available	psi	
		105	Engine Intake Manifold 1 Temperature	185.0	deg F	
65271	VEP1	115	Alternator Current	not available	amps	FF FF FF FF
		114	Net Battery Current	not available	amps	F6 00 FF FF
		167	Charging System Potential (Voltage)	not available	volts	
		168	Battery Potential / Power Input 1	12.30	volts	
		158	Keyswitch Battery Potential	not available	volts	

Data from MID 128 (Engine #1) on the J1587 Network

PID	PID Name	Value	Units	Raw Data
84	Road Speed	0.0	mph	00
86	Cruise Control Set Speed	0.0	mph	00
91	Percent Accelerator Pedal Position	0.0	%	00
92	Percent Engine Load	0.0	%	00
100	Engine Oil Pressure	76.5	psi	99
102	Boost Pressure	0.000	psi	00
105	Intake Manifold Temperature	185	deg F	B9
108	Barometric Pressure	9.000	psi	90
110	Engine Coolant Temperature	194	deg F	C2
168	Battery Potential (Voltage)	12.30	volts	F6 00
171	Ambient Air Temperature	32.00	deg F	80 00
174	Fuel Temperature	86.00	deg F	58 01
175	Engine Oil Temperature	-36.00	deg F	70 FF
184	Instantaneous Fuel Economy	0.000	mpg	00 00
190	Engine Speed	0.00	rpm	00 00
251	Clock	16:24:11	HH:MM:SS (UTC)	2C 18 10
252	Date	2015-08-27	YYYY-MM-DD	6C 08 1E

CAT Live Data

[Download CSV Table](#)

Name	Value
Instantaneous MPG	1769.50
Real Time Clock	2015-08-27T16:27:09+00:00
Diagnostic clock	20188.00

Data Extraction Details

Raw Hex Data from CTRPL Data Pages

[View Raw Data](#)

Nomenclature

RSL

Red Stop Lamp used for trouble code information severe enough to stop the vehicle.

DTC

Diagnostic Trouble Code

AES

Advanced Encrypton Standard

MIL

Malfunction Indicator Lamp

SM

Send Message (FLA sends message to ECM)

PGN

Parameter Group Number from SAE J1939

gallons

US Gallons

SID

Subsystem ID

PID

Parameter ID

MID

Message ID

DA

Destination Address

SHA

Secure Hashing Algorithm

AWL

Amber Warning Lamp user for information for problems where the vehicle does not need to be immediately stopped.

?

An ASCII character of '?' represents data that is not an ASCII character, i.e. above 127.

SPN

Suspect Parameter Number from SAE J1939

FMI

Failure Mode Indication

RM

Receive message (FLA receives message from ECM)

SA

Source Address from SAE J1939

DIR

Direction of network message, see SM/RM

GPS

Global Positioning Satellite

Network Logs

Network logs are the raw data that existed on the vehicle network during the time of the inspection. The Timestamp refers to the first occurrence of the message. Any duplicate message is recorded by incrementing the count column. Network data is in hex.

J1939 Network Log

[View Network Log](#)
[Download Network Log as CSV](#)

Thu Aug 27 2015 21:23:41 -00:00 **duration: 00:01:24 (84 seconds)**

J1587 Network Log

[View Network Log](#)
[Download Network Log as CSV](#)

Thu Aug 27 2015 21:23:41 -00:00 **duration: 00:02:05 (125 seconds)**

Passthrough Tue Aug 25 2015 20:57:52 -00:00

[View Network Log](#)
[Download Network Log as CSV](#)

Passthrough Thu Aug 27 2015 16:42:39 -00:00

[View Network Log](#)
[Download Network Log as CSV](#)

SHA 256 Sums

Secure Hash Algorithms (SHAs) are calculated at the time of the extraction by the FLA and by the Portal when the report is uploaded.

If the two SHA-256 values agree, this shows, with near mathematical certainty, that the files are identical and no bits have been altered.

FaultData.json	4e3953c8cb612add755f7cb2a0e23c6709efd6844e27d40b4462ba35154715c7	Verified
versions.json	379e886c2dbd78db86a46d5c6053bb7fa2557447900ad8ecd26e7829aaec523d	Verified
standards_snapshot.txt	972c220bb420c5c57e1f45c4df119ae2039b840c25730032ce8aa02b45c54fcc	Verified
cat_snapshots.syn	1f5a16177553f25eae4fb4fac0d12fe39c066e11c0458465cd309ab18a402c497	Verified
GPSData.json	d4a235187836eb3c4507c919105a791e48391ddf7a93962f9fe9a781713db3fd	Verified
J1939Data.json	4f8b2a052dee3416f5b1bda578e27e46404c936895ff866e16cdd8b22e4e943e	Verified
metaData.json	7e6d11c85254e6835fe1fcc022d1d8b7cb3c83e3950e3db9e5ecf51297706639	Verified
J1587Data.json	420f9c4a1a132f0ca8bcd248648054ac12d2b94b39b94bdd34f496ffa5b5d544	Verified
standards_data.json	ebc796c089aa556e76827bfaff8e1cda280561c630326e1a9bc9d84a5d6f16a5	Verified
cat_traffic_snapshot.txt	ce43c9a1a0d9483514c4a0f2cf0fdaa8ad2fef43a38b49c6540e51db2969e841	Verified
detection_snapshot.txt	8e3e0ec9cd1a288669768f12df35dea384ae9682cd6e592a1a12e25ef91e985d	Verified
Quick_Stop_1.csv	Server a3e03f655b52ede27e9215652e2ae048bdb9624a6d741c06e46bcc2ed4e6b74	SHA 256
	FLA None	MISMATCH

Access Details

The user logged in as **Amila Perera (amila-perera@utulsa.edu)** requested this report on **Thu Aug 27 2015 21:32:28 -00:00** from a device with an IP address of **129.244.245.5**

Version Information

FLA System

3.58cross

FLA Upstart

0.92-1

FLA Network Driver

0.91-1

FLA Software

5be5f02

FLA Passthrough

0.8-1

FLA Local Website

3b58c4d

FLA Portal Revision

1.1

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