

MAGNET
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IoT 4n6: The Growing Impact of the
Internet of Things on Digital Forensics
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- Director Forensics, Magnet Forensics
 - Previous:
 - Basis Technology - Contractor
 - Ernst and Young - Consultant
 - American Systems - Contractor
 - United States Marine Corps
 - Adjunct Professor, George Mason University
 - M.S. in Computer Forensics Program
 - Mobile Forensics
 - M.S. in Computer Forensics, George Mason University

Agenda

- Where is the data?
- Data that can be recovered
 - Fitbit
 - Alexa “Echo-system”
- Summary



Finding the Data



FORENSICS[®]

Sources of Data



Fitbit



Fitbit



- Fitbit as evidence in investigations:
 - “Big Brother was definitely watching as George Burch killed Nicole VanderHyden”
 - <https://www.greenbaypressgazette.com/story/news/2018/03/04/big-brother-phone-george-burch-nicole-vanderheyden-murder-trial-gps-fitbit-snapshot-google/390236002/>

Fitbit – Profiles



fitbit®

INTERNET OF THINGS	3,512
Amazon Alexa Cached Audio	1
Amazon Alexa Tasks	17
Amazon Alexa User	3
Amazon Alexa Web Resource	2,209
Fitbit Floors	3
Fitbit Heart Rate	757
Fitbit Profiles	2
Fitbit Sleep	45
Fitbit Steps	96
Nest Location Configuration	1
Nest Temperature Adjustment	15
Nest User	1
Pebble Activity Information	69
Pebble Applications	27
Pebble Calendar Events	7
Pebble Contacts	7
Pebble Detected Android Applications	110
Pebble Device Information	1
Pebble Notifications	138

User ID Full Name Birthday Profile Image URL

a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	Noah Bodyばで	1980-01-01	https://d6y8zfzc2qfsl.cloudfront.net/525F2ABC-6446-22F8-96D6-09A51C91D58E_profile_150_square.jpg
3e05442f-1932-4991-a2ef-181a5f2a04a0	V [REDACTED] va	1986-04-01	https://static0.fitbit.com

a7c16cf3-3afd-4488-922e-ed0f5c7c32d5

DETAILS

ARTIFACT INFORMATION

User ID	a7c16cf3-3afd-4488-922e-ed0f5c7c32d5
Full Name	Noah Bodyばで
Birthday	1980-01-01
Profile Image URL	https://d6y8zfzc2qfsl.cloudfront.net/525F2ABC-6446-22F8-96D6-09A51C91D58E_profile_150_square.jpg
Height (cm)	180.3
Gender	MALE

Profiles

ARTIFACT INFORMATION

User ID	a7c16cf3-3afd-4488-922e-ed0f5c7c32d5
Full Name	Noah Bodyぼで
Birthday	1980-01-01
Profile Image URL	https://d6y8zfzc2qfs1.cloudfront.net/525F2ABC-6446-22F8-96D6-09A51C91D58E_profile_150_square.jpg
Height (cm)	180.3
Gender	MALE
Walking Stride Length (cm)	74.8
Running Stride Length (cm)	93.8
Current Timezone Offset (Minutes)	-240
Country	en_CA

EVIDENCE INFORMATION

Source	Entire Disk (Microsoft NTFS, 952.67 GB) Windows [C:\] - [ROOT]\C:\Users\jad\Desktop\IoT Data\Fitbit\Users\jad\Desktop\IoT Data\Fitbit\2.27\com.fitbit.FitbitMobile\databases\fitbit-db
Location	Table: PROFILE(_id: 1)

Fitbit – Profiles



INTERNET OF THINGS 3,512

	User ID	Full Name	Birthday	Profile Image URL
Amazon Alexa Cached Audio	a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	Noah Bodyばで	1980-01-01	https://d6y8zfzc2qfsl.cloudfront.net/525F2ABC-6446-22F8-96D6-09A51C91D58E_profile_150_square.jpg
Amazon Alexa Tasks	3e05442f-1932-4991-a2ef-181a5f2a04a0	V [REDACTED] va	1986-04-01	https://static0.fitbit.com/ios/icon/user/150_square.jpg

a7c16cf3-3afd-4488-922e-ed0f5c7c32d5

DETAILS

ARTIFACT INFORMATION

User ID	a7c16cf3-3afd-4488-922e-ed0f5c7c32d5
Full Name	Noah Bodyばで
Birthday	1980-01-01
Profile Image URL	https://d6y8zfzc2qfsl.cloudfront.net/525F2ABC-6446-22F8-96D6-09A51C91D58E_profile_150_square.jpg
Height (cm)	180.3
Gender	MALE

Caveats

- Stride length calculated by using your gender and height (user entered)
- Can be adjusted
- https://help.fitbit.com/articles/en_US/Help_article/1135

Fitbit – Steps

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📍 Amazon Alexa User	3
📍 Amazon Alexa Web Resource	2,209
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⌚ Pebble Calendar Events	7
⌚ Pebble Contacts	7
⌚ Pebble Detected Android Applications	110
⌚ Pebble Device Information	1
⌚ Pebble Notifications	138

User ID	Start Date/Time	End Date/Time
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-20 12:30:00 AM	2016-06-20 12:45:00 AM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-19 3:15:00 PM	2016-06-19 3:30:00 PM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-21 12:00:00 AM	2016-06-21 12:15:00 AM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-19 3:00:00 PM	2016-06-19 3:15:00 PM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-20 8:15:00 PM	2016-06-20 8:30:00 PM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-20 2:15:00 AM	2016-06-20 2:30:00 AM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-20 11:30:00 AM	2016-06-20 11:45:00 AM

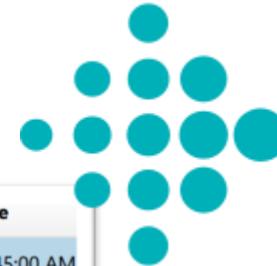
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5

ARTIFACT INFORMATION

User ID a7c16cf3-3afd-4488-922e-ed0f5c7c32d5
Start Date/Time 2016-06-20 12:30:00 AM
End Date/Time 2016-06-20 12:45:00 AM
Steps Taken 212

EVIDENCE INFORMATION

Source Entire Disk (Microsoft NTFS, 952.67 GB) Windows [C:] - [ROOT]\C:\Users\jad\Desktop\IoT Data\Fitbit\Users\jad\Desktop\IoT Data\Fitbit\2.27\com.fitbit.FitbitMobile\databases\fitbit-db
Location Table: TIME_SERIES_OBJECT(_id: 1311)
Table: PROFILE(_id: 1)



Steps

ARTIFACT INFORMATION

User ID a7c16cf3-3afd-4488-922e-ed0f5c7c32d5
Start Date/Time 2016-06-20 12:30:00 AM
End Date/Time 2016-06-20 12:45:00 AM
Steps Taken 212

EVIDENCE INFORMATION

Source [Entire Disk \(Microsoft NTFS, 952.67 GB\) Windows \[C:\\] - \[ROOT\]\C:\Users\jad\Desktop\IoT Data\Fitbit\Users\jad\Desktop\IoT Data\Fitbit\2.27\com.fitbit.FitbitMobile\databases\fitbit-db](#)
Location [Table: TIME_SERIES_OBJECT\(_id: 1311\)](#)
[Table: PROFILE\(_id: 1\)](#)

Fitbit – Steps

INTERNET OF THINGS	3,512
📍 Amazon Alexa Cached Audio	1
📍 Amazon Alexa Tasks	17
📍 Amazon Alexa User	3
📍 Amazon Alexa Web Resource	2,209
🌐 Fitbit Floors	3
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User ID	Start Date/Time	End Date/Time
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-20 12:30:00 AM	2016-06-20 12:45:00 AM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-19 3:15:00 PM	2016-06-19 3:30:00 PM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-21 12:00:00 AM	2016-06-21 12:15:00 AM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-19 3:00:00 PM	2016-06-19 3:15:00 PM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-20 8:15:00 PM	2016-06-20 8:30:00 PM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-20 2:15:00 AM	2016-06-20 2:30:00 AM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-20 11:30:00 AM	2016-06-20 11:45:00 AM

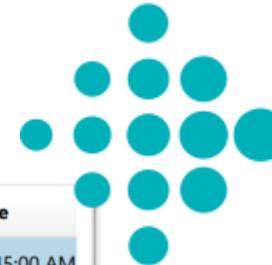
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5

ARTIFACT INFORMATION

User ID: a7c16cf3-3afd-4488-922e-ed0f5c7c32d5
Start Date/Time: 2016-06-20 12:30:00 AM
End Date/Time: 2016-06-20 12:45:00 AM
Steps Taken: 212

EVIDENCE INFORMATION

Source: Entire Disk (Microsoft NTFS, 952.67 GB) Windows [C:] - [ROOT]\C:\Users\jad\Desktop\IoT Data\Fitbit\Users\jad\Desktop\IoT Data\Fitbit\2.27\com.fitbit.FitbitMobile\databases\fitbit-db
Location: Table: TIME_SERIES_OBJECT(_id: 1311)
Table: PROFILE(_id: 1)



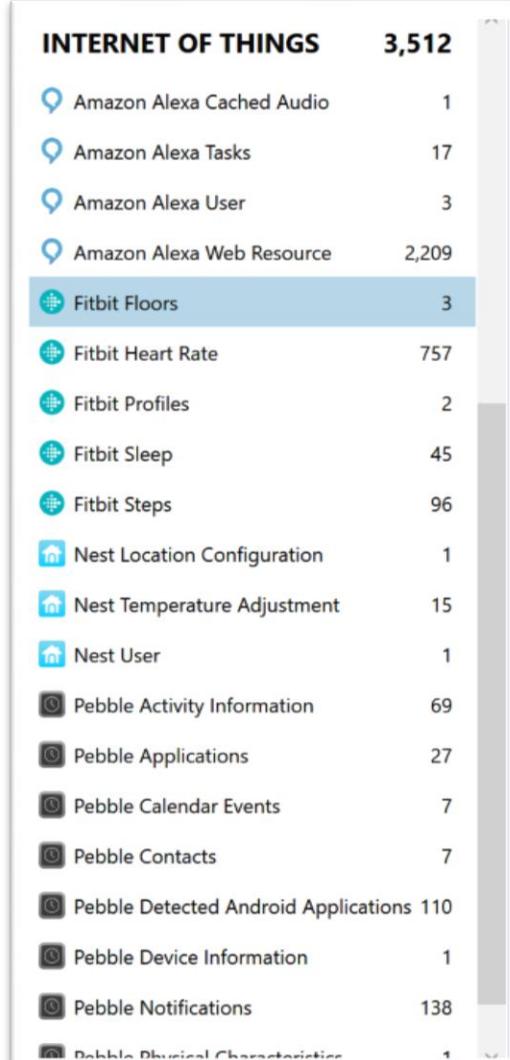
How this could help

- Great evidence to show a person's level of activity, time of activity, and amount at a particular time
- Presence/lack of movement during a crime

Fitbit – Floors Climbed



fitbit®



	User ID	Date	Floors	Source
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-18	6	Entire Disk (Microsoft NTFS, 952.67 GB) Windows [C:] - [ROOT]\C:\Users\jad\	
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-20	16	\Desktop\IoT Data\Fitbit\Users\jad\Desktop\IoT Data\Fitbit\2.27\com.fitbit.FitbitMobile\databases\fitbit-db	
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-19	8		

a7c16cf3-3afd-4488-922e-ed0f5c7c32d5

DETAILS

User ID a7c16cf3-3afd-4488-922e-ed0f5c7c32d5

Date 2016-06-18

Floors 6

EVIDENCE INFORMATION

Source Entire Disk (Microsoft NTFS, 952.67 GB) Windows [C:] - [ROOT]\C:\Users\jad\

Location Table: TIME SERIES OBJECT(id: 2138)

Floors Climbed

DETAILS

ARTIFACT INFORMATION

User ID a7c16cf3-3af3-4488-922e-ed0f5c7c32d5

Date 2016-06-18

Floors 6

EVIDENCE INFORMATION

Source [**Entire Disk \(Microsoft NTFS, 952.67 GB\) Windows \[C:\\] - \[ROOT\]\C:\Users\jad\Desktop\IoT Data\Fitbit\Users\jad\Desktop\IoT Data\Fitbit\2.27\com.fitbit.FitbitMobile\databases\fitbit-db**](#)

Location **Table: TIME_SERIES_OBJECT(_id: 2138)**

Fitbit – Floors Climbed



INTERNET OF THINGS **3,512**

Amazon Alexa Cached Audio	1
Amazon Alexa Tasks	17
Amazon Alexa User	3
Amazon Alexa Web Resource	2,209
Fitbit Floors	3
Fitbit Heart Rate	757
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Nest Location Configuration	1
Nest Temperature Adjustment	15
Nest User	1
Pebble Activity Information	69
Pebble Applications	27
Pebble Calendar Events	7
Pebble Contacts	7
Pebble Detected Android Applications	110
Pebble Device Information	1
Pebble Notifications	138
Pebble Physical Characteristics	1

User ID | Date | Floors | Source

a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-18	6	Entire Disk (Microsoft NTFS, 952.67 GB) Windows [C:] - [ROOT]\C:\Users\jad\
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-20	16	\Desktop\IoT Data\Fitbit\Users\jad\Desktop\IoT Data\Fitbit\2.27\com.fitbit.FitbitMobile\databases\fitbit-db
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-19	8	

a7c16cf3-3afd-4488-922e-ed0f5c7c32d5

DETAILS

User ID: a7c16cf3-3afd-4488-922e-ed0f5c7c32d5
Date: 2016-06-18
Floors: 6

ARTIFACT INFORMATION

User ID: a7c16cf3-3afd-4488-922e-ed0f5c7c32d5
Date: 2016-06-18
Floors: 6

EVIDENCE INFORMATION

Source: Entire Disk (Microsoft NTFS, 952.67 GB) Windows [C:] - [ROOT]\C:\Users\jad\

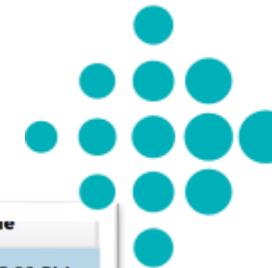
\Desktop\IoT Data\Fitbit\Users\jad\Desktop\IoT Data\Fitbit\2.27\com.fitbit.FitbitMobile\databases\fitbit-db

Location: Table: TIME SERIES OBJECT(id: 2138)

How this could help

- Indicates overall activity for the day
- Can show a trend of activity over a number of days

Fitbit – Heart Rate



fitbit®

INTERNET OF THINGS 3,512

📍 Amazon Alexa Cached Audio	1
📍 Amazon Alexa Tasks	17
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📍 Fitbit Floors	3
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⌚ Pebble Calendar Events	7
⌚ Pebble Contacts	7
⌚ Pebble Detected Android Applications	110
⌚ Pebble Device Information	1
⌚ Pebble Notifications	138

User ID	Start Date/Time	End Date/Time
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-20 1:00:00 PM	2016-06-20 1:05:00 PM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-19 11:55:00 AM	2016-06-19 12:00:00 PM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-18 3:35:00 PM	2016-06-18 3:40:00 PM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-19 9:05:00 AM	2016-06-19 9:10:00 AM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-19 7:40:00 PM	2016-06-19 7:45:00 PM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-20 12:35:00 AM	2016-06-20 12:40:00 AM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-19 7:55:00 PM	2016-06-19 8:00:00 PM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-18 10:10:00 PM	2016-06-18 10:15:00 PM

a7c16cf3-3afd-4488-922e-ed0f5c7c32d5

User ID	a7c16cf3-3afd-4488-922e-ed0f5c7c32d5
Start Date/Time	2016-06-20 1:00:00 PM
End Date/Time	2016-06-20 1:05:00 PM
Average Heart Rate (BPM)	73
Type	Periodic Heart Rate

EVIDENCE INFORMATION

Source	Entire Disk (Microsoft NTFS, 952.67 GB) Windows [C:\] - [ROOT]\C:\User\jad\Desktop\IoT Data\Fitbit\Users\jad\Desktop\IoT Data\Fitbit\2.27\com.fitbit.FitbitMobile\databases\fitbit-db
Location	Table: TIME_SERIES_OBJECT(_id: 1965) Table: PROFILE(id: 1)

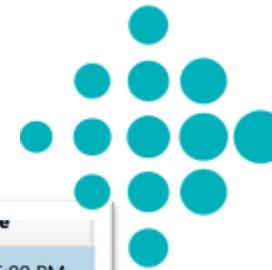
Heart Rate

User ID a7c16cf3-3afd-4488-922e-ed0f5c7c32d5
Start Date/Time 2016-06-20 1:00:00 PM
End Date/Time 2016-06-20 1:05:00 PM
Average Heart Rate (BPM) 73
Type Periodic Heart Rate

EVIDENCE INFORMATION

Source [**Entire Disk \(Microsoft NTFS, 952.67 GB\) Windows \[C:\\] - \[ROOT\]\C:\Users\jad\Desktop\IoT Data\Fitbit\Users\jad\Desktop\IoT Data\Fitbit\2.27\com.fitbit.FitbitMobile\databases\fitbit-db**](#)
Location **Table: TIME_SERIES_OBJECT(_id: 1965)**
Table: PROFILE(_id: 1)

Fitbit – Heart Rate



fitbit®

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📍 Amazon Alexa Cached Audio	1
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⌚ Pebble Device Information	1
⌚ Pebble Notifications	138

User ID	Start Date/Time	End Date/Time
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-20 1:00:00 PM	2016-06-20 1:05:00 PM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-19 11:55:00 AM	2016-06-19 12:00:00 PM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-18 3:35:00 PM	2016-06-18 3:40:00 PM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-19 9:05:00 AM	2016-06-19 9:10:00 AM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-19 7:40:00 PM	2016-06-19 7:45:00 PM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-20 12:35:00 AM	2016-06-20 12:40:00 AM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-19 7:55:00 PM	2016-06-19 8:00:00 PM
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-18 10:10:00 PM	2016-06-18 10:15:00 PM

a7c16cf3-3afd-4488-922e-ed0f5c7c32d5

User ID	a7c16cf3-3afd-4488-922e-ed0f5c7c32d5
Start Date/Time	2016-06-20 1:00:00 PM
End Date/Time	2016-06-20 1:05:00 PM
Average Heart Rate (BPM)	73
Type	Periodic Heart Rate

EVIDENCE INFORMATION

Source	Entire Disk (Microsoft NTFS, 952.67 GB) Windows [C:] - [ROOT]\C:\User\jad\Desktop\IoT Data\Fitbit\Users\jad\Desktop\IoT Data\Fitbit\2.27\com.fitbit.FitbitMobile\databases\fitbit-db
Location	Table: TIME_SERIES_OBJECT(_id: 1965) Table: PROFILE(id: 1)

How this could help

- Great indicator of the user's physical exertion at points in time (5 min segments)
- Can especially help if graphed over time
- Why was there a spike at specific time? (e.g. time crime committed)

Fitbit - Sleep



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User ID	Start Date/Time	End Date/Time	
3e05442f-1932-4991-a2ef-181a5f2a04a0	2016-06-22 8:05:00 AM	2016-06-22 11:30:00 AM	2
3e05442f-1932-4991-a2ef-181a5f2a04a0	2016-07-19 6:51:30 AM	2016-07-19 12:54:30 PM	3
3e05442f-1932-4991-a2ef-181a5f2a04a0	2016-07-20 10:35:30 PM	2016-07-21 1:47:30 AM	1
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-20 5:32:00 AM	2016-06-20 10:49:00 AM	3
3e05442f-1932-4991-a2ef-181a5f2a04a0	2016-07-17 3:32:30 AM	2016-07-17 11:01:30 AM	4
3e05442f-1932-4991-a2ef-181a5f2a04a0	2016-06-27 4:50:30 AM	2016-06-27 12:06:30 PM	4
3e05442f-1932-4991-a2ef-181a5f2a04a0	2016-07-26 5:45:00 AM	2016-07-26 12:40:00 PM	4

3e05442f-1932-4991-a2ef-181a5f2a04a0

ARTIFACT INFORMATION

User ID 3e05442f-1932-4991-a2ef-181a5f2a04a0
Start Date/Time 2016-06-22 8:05:00 AM
End Date/Time 2016-06-22 11:30:00 AM
Time In Bed (Minutes) 205
Time Awake (Minutes) 5
Time Asleep (Minutes) 198

EVIDENCE INFORMATION

Source Entire Disk (Microsoft NTFS, 952.67 GB) Windows [C:\] - [ROOT]\C:\Users\jad\Desktop\IoT Data\Fitbit\Users\jad\Desktop\IoT Data\Fitbit\2.27\Real Data\com.fitbit.FitbitMobile\databases\logging_db

Location Table: SLEEP_LOG_ENTRY(id: 40)

Sleep

ARTIFACT INFORMATION

User ID 3e05442f-1932-4991-a2ef-181a5f2a04a0
Start Date/Time 2016-06-22 8:05:00 AM
End Date/Time 2016-06-22 11:30:00 AM
Time In Bed (Minutes) 205
Time Awake (Minutes) 5
Time Asleep (Minutes) 198

EVIDENCE INFORMATION

Source [Entire Disk \(Microsoft NTFS, 952.67 GB\) Windows \[C:\\] - \[ROOT\]\C:\Users\jad\Desktop\IoT Data\Fitbit\Users\jad\Desktop\IoT Data\Fitbit\2.27\Real Data\com.fitbit.FitbitMobile\databases\logging_db](#)
Location **Table: SLEEP_LOG_ENTRY(_id: 40)**

Fitbit - Sleep



fitbit®

INTERNET OF THINGS 3,512

Amazon Alexa Cached Audio	1
Amazon Alexa Tasks	17
Amazon Alexa User	3
Amazon Alexa Web Resource	2,209
Fitbit Floors	3
Fitbit Heart Rate	757
Fitbit Profiles	2
Fitbit Sleep	45
Fitbit Steps	96
Nest Location Configuration	1
Nest Temperature Adjustment	15
Nest User	1
Pebble Activity Information	69
Pebble Applications	27
Pebble Calendar Events	7
Pebble Contacts	7
Pebble Detected Android Applications	110
Pebble Device Information	1
Pebble Notifications	138
Pebble Physical Characteristics	1

User ID	Start Date/Time	End Date/Time	
3e05442f-1932-4991-a2ef-181a5f2a04a0	2016-06-22 8:05:00 AM	2016-06-22 11:30:00 AM	2
3e05442f-1932-4991-a2ef-181a5f2a04a0	2016-07-19 6:51:30 AM	2016-07-19 12:54:30 PM	3
3e05442f-1932-4991-a2ef-181a5f2a04a0	2016-07-20 10:35:30 PM	2016-07-21 1:47:30 AM	1
a7c16cf3-3afd-4488-922e-ed0f5c7c32d5	2016-06-20 5:32:00 AM	2016-06-20 10:49:00 AM	3
3e05442f-1932-4991-a2ef-181a5f2a04a0	2016-07-17 3:32:30 AM	2016-07-17 11:01:30 AM	4
3e05442f-1932-4991-a2ef-181a5f2a04a0	2016-06-27 4:50:30 AM	2016-06-27 12:06:30 PM	4
3e05442f-1932-4991-a2ef-181a5f2a04a0	2016-07-26 5:45:00 AM	2016-07-26 12:40:00 PM	4

3e05442f-1932-4991-a2ef-181a5f2a04a0

ARTIFACT INFORMATION

User ID	3e05442f-1932-4991-a2ef-181a5f2a04a0
Start Date/Time	2016-06-22 8:05:00 AM
End Date/Time	2016-06-22 11:30:00 AM
Time In Bed (Minutes)	205
Time Awake (Minutes)	5
Time Asleep (Minutes)	198

EVIDENCE INFORMATION

Source: [Entire Disk \(Microsoft NTFS, 952.67 GB\) Windows \[C:\] - \[ROOT\]\C:\Users\jad\Desktop\IoT Data\Fitbit\Users\jad\Desktop\IoT Data\Fitbit\2.27\Real Data\com.fitbit.FitbitMobile\databases\logging_db](#)

Location: [Table: SLEEP_LOG_ENTRY\(_id: 40\)](#)

How this could help

- Another very helpful indicator
- Place someone at specific times
- Some questions around time awake/time asleep numbers

Amazon Echo-system* - Alexa



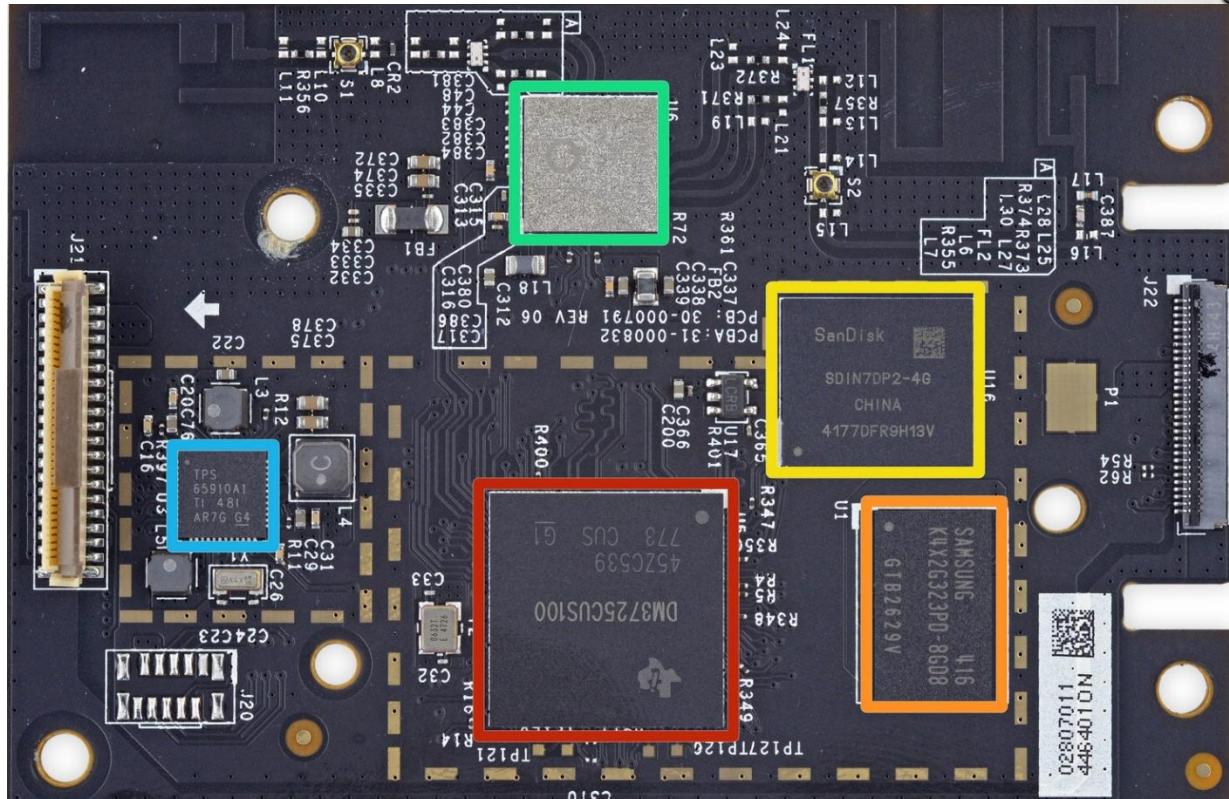
Other Variations



Amazon Echo

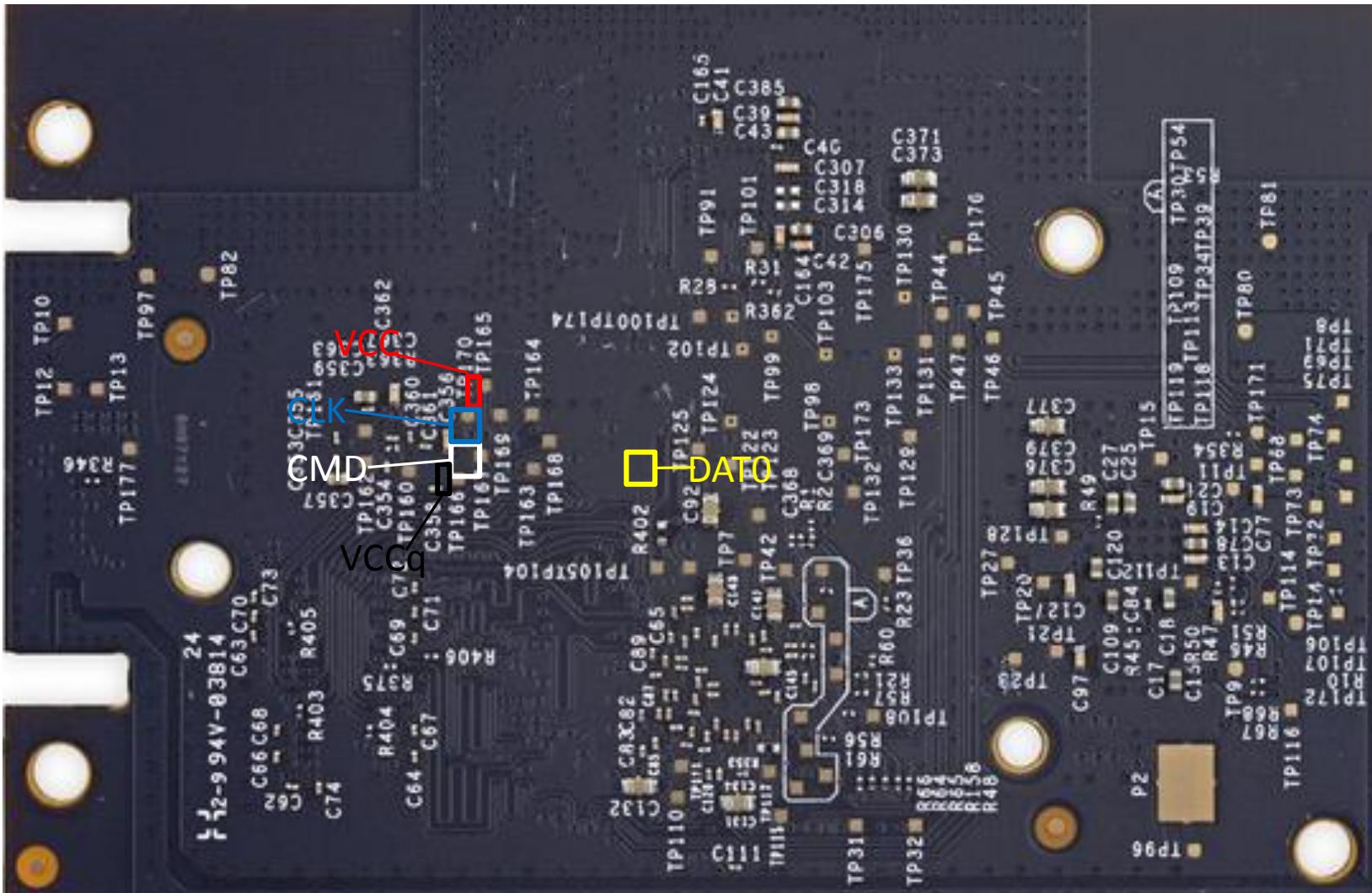


- Components
 - SanDisk SDIN7DP2-4G
 - 4GB iNAND Ultra Flash Memory
 - Documented



<https://www.ifixit.com/Teardown/Amazon+Echo+Teardown/33953>

Echo ISP Pinout

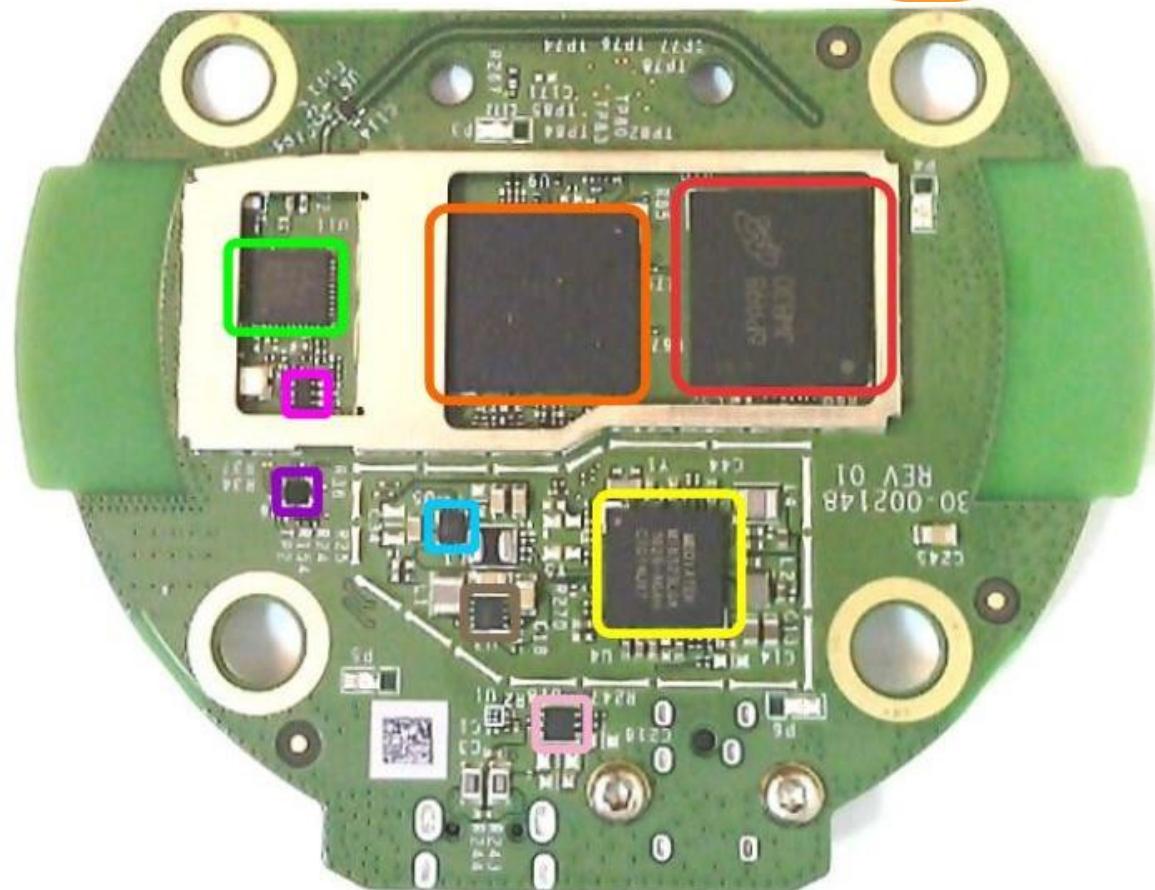


UNCOVER THE TRUTH

Amazon Echo Dot

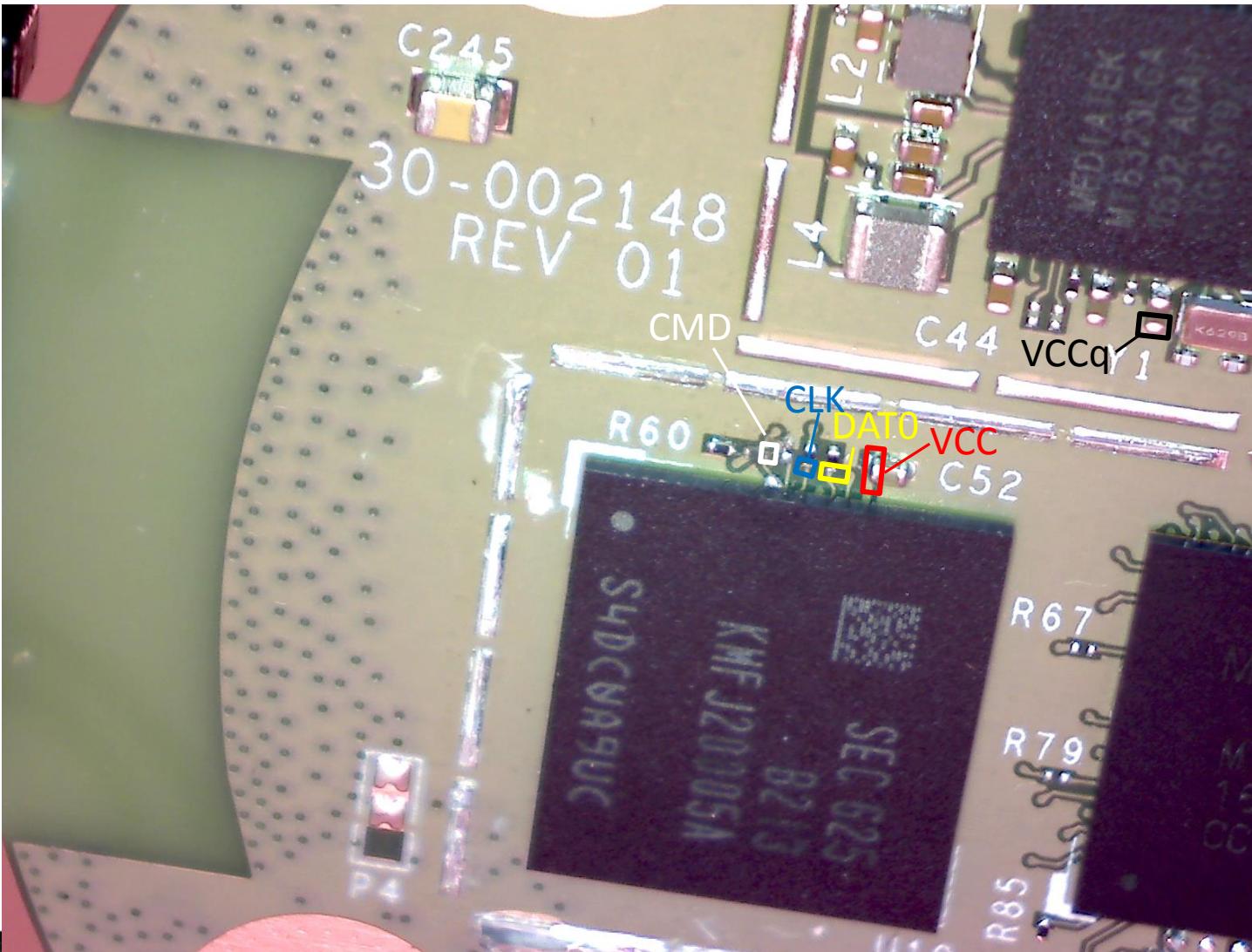


- Components
 - Different eMMC on each board
 - Micron 6PA98 JWB30
 - SEC 625 B213 KMF J2005A S4DCVA9VC
- Challenge
 - No Data Sheet
 - Assume eMMC



<https://www.allaboutcircuits.com/news/teardown-tuesday-amazon-echo-dot-v2/>

Echo Dot ISP Pinout



Amazon Echo Flash Memory



- What data can we find?
 - WiFi Connections
 - device_information_logs
 - Registration Information
 - data\local\token\registrationinfo.txt

```
device_information_logs DSN:B0F00712521402AK
PCB ID:02807011520501F2
WIFI SECRET:CP3V9HV8APQ3CBCI6FCB
WIFI MAC Address: [REDACTED]5AF
BT MAC Address: [REDACTED]6E3
APMAC Address:
```

```
{
  "registrationCredentials": {
    "userID": "amzn1.account.AG [REDACTED]7GYV [REDACTED]MA",
    "firstName": "[REDACTED]",
    "fullName": "[REDACTED]",
    "deviceName": "[REDACTED]'s Echo",
    "accountPool": "Amazon",
    "countryOfResidence": "",
    "preferredMarketplace": ""
  }
}
```

Amazon Echo (Alexa app)



INTERNET OF THINGS

3,512

Amazon Alexa Cached Audio 1

Amazon Alexa Tasks 17

Amazon Alexa User 3

Amazon Alexa Web Resource 2,209

Fitbit Floors 3

Fitbit Heart Rate 757

Fitbit Profiles 2

Fitbit Sleep 45

Fitbit Steps 96

Nest Location Configuration 1

Nest Temperature Adjustment 15

Nest User 1

Pebble Activity Information 69

Pebble Applications 27

Pebble Calendar Events 7

Pebble Contacts 7

Pebble Detected Android Applications 110

Pebble Device Information 1

Pebble Notifications 138

Pebble Physical Characteristics 1

	User Name	Email	Device Name	Customer ID
				amzn1.account.AHBXFNO37RNIN:...
			noah's 2nd Android Device	amzn1.account.AHBXFNO37RNIN:...
	noah			amzn1.account.AHBXFNO37RNIN:...

noah's 2nd Android Device

DETAILS

ARTIFACT INFORMATION

Device Name noah's 2nd Android Device

Customer ID amzn1.account.AHBXFNO37RNIN2GMKRYQSMGVXIQA

EVIDENCE INFORMATION

Source [Entire Disk \(Microsoft NTFS, 952.67 GB\) Windows \[C:\] - \[ROOT\]\C:\Users\jad\Desktop\IoT Data\Amazon Alexa\Users\jad\Desktop\IoT Data\Amazon Alexa\1.0.165.9\data\data\com.amazon.dee.app\databases\map_data_storage.db](#)

Location [Table: userdata\(_id: 5\)](#)

User Info

Amazon Echo (Alexa app)



ARTIFACT INFORMATION

Device Name noah's 2nd Android Device

Customer ID amzn1.account.AHBXFNO37RNIN2GMKRYQSMGVXIQA

EVIDENCE INFORMATION

Source [Entire Disk \(Microsoft NTFS, 952.67 GB\) Windows \[C:\\] - \[ROOT\]\C:\Users\jad\Desktop\IoT Data\Amazon Alexa\Users\jad\Desktop\IoT Data\Amazon Alexa\1.0.165.9\data\data\com.amazon.dee.app\databases\map_data_storage.db](#)

Location **Table: userdata(_id: 5)**

Amazon Echo (Alexa app)



INTERNET OF THINGS

3,512

Amazon Alexa Cached Audio 1

Amazon Alexa Tasks 17

Amazon Alexa User 3

Amazon Alexa Web Resource 2,209

Fitbit Floors 3

Fitbit Heart Rate 757

Fitbit Profiles 2

Fitbit Sleep 45

Fitbit Steps 96

Nest Location Configuration 1

Nest Temperature Adjustment 15

Nest User 1

Pebble Activity Information 69

Pebble Applications 27

Pebble Calendar Events 7

Pebble Contacts 7

Pebble Detected Android Applications 110

Pebble Device Information 1

Pebble Notifications 138

Pebble Physical Characteristics 1

	User Name	Email	Device Name	Customer ID
				amzn1.account.AHBXFNO37RNIN:
			noah's 2nd Android Device	amzn1.account.AHBXFNO37RNIN:
	noah			amzn1.account.AHBXFNO37RNIN:

noah's 2nd Android Device

DETAILS

ARTIFACT INFORMATION

Device Name noah's 2nd Android Device

Customer ID amzn1.account.AHBXFNO37RNIN2GMKRYQSMGVXIQA

EVIDENCE INFORMATION

Source [Entire Disk \(Microsoft NTFS, 952.67 GB\) Windows \[C:\] - \[ROOT\]\C:\Users\jad\Desktop\IoT Data\Amazon Alexa\Users\jad\Desktop\IoT Data\Amazon Alexa\1.0.165.9\data\data\com.amazon.dee.app\databases\map_data_storage.db](#)

Location [Table: userdata\(_id: 5\)](#)

How this could help

- Basic user info here
- Amazon customer ID – could be used for search warrant/subpoena

Amazon Echo (Alexa app)



INTERNET OF THINGS

3,512

Amazon Alexa Cached Audio 1

Amazon Alexa Tasks 17

Amazon Alexa User 3

Amazon Alexa Web Resource 2,209

Fitbit Floors 3

Fitbit Heart Rate 757

Fitbit Profiles 2

Fitbit Sleep 45

Fitbit Steps 96

Nest Location Configuration 1

Nest Temperature Adjustment 15

Nest User 1

Pebble Activity Information 69

Pebble Applications 27

Pebble Calendar Events 7

Pebble Contacts 7

Pebble Detected Android Applications 110

Pebble Device Information 1

Pebble Notifications 138

Pebble Physical Characteristics 1

	Text	Type	Last Updated Date...	Created Da
	milk	SHOPPING_ITEM	2016-05-26 9:10:22 PM	2016-05-26 9:10:22 PM
	wash my car five minutes	TASK	2015-09-11 7:27:19 PM	2015-09-11 7:27:19 PM
	pick up my car	TASK	2015-09-11 7:36:53 PM	2015-09-11 7:36:53 PM
	yellow	TASK	2015-09-11 11:09:52 PM	2015-09-11 11:09:52 PM
	toilet paper to my wish list	TASK	2015-09-11 7:27:02 PM	2015-09-11 7:27:02 PM
	toilet paper to my wish list	TASK	2015-09-11 7:27:02 PM	2015-09-11 7:27:02 PM
	cat food	SHOPPING_ITEM	2015-09-10 6:07:57 PM	2015-09-10 6:07:57 PM
	pick up my car	TASK	2015-09-11 7:36:53 PM	2015-09-11 7:36:53 PM

milk

ARTIFACT INFORMATION

Text milk

Type SHOPPING_ITEM

Last Updated Date/Time 2016-05-26 9:10:22 PM

Created Date/Time 2016-05-26 9:10:22 PM

Customer ID A38FE4B84G4J3V

Completed No

Deleted No

Similar Text "milk","add milk","milk"

Resource URL <https://pitangui.amazon.com/api/utterance/audio/data?id=AB72C64C86AW2:1.0/2016/05/26/21/>

Alexa Tasks

ARTIFACT INFORMATION

Text	milk
Type	SHOPPING_ITEM
Last Updated Date/Time	2016-05-26 9:10:22 PM
Created Date/Time	2016-05-26 9:10:22 PM
Customer ID	A38FE4B84G4J3V
Completed	No
Deleted	No
Similar Text	"milk","add milk","milk"
Resource URL	https://pitangui.amazon.com/api/utterance/audio/data?id=AB72C64C86AW2:1.0/2016/05/26/21/B0F00712528700JU/10:19::TNIH_2V.c9c5aeff-e683-4f44-8d3f-9701d4d9d6c6ZXV



EVIDENCE INFORMATION

Source	Entire Disk (Microsoft NTFS, 952.67 GB) Windows [C:] - [ROOT]\C:\Users\jad\Desktop\IoT Data\Amazon Alexa\Users\jad\Desktop\IoT Data\Amazon Alexa\1.0.165.9\data\data\com.amazon.dee.app\databases\DataStore.db
Location	Table: DataItem(rowid: 2)



Sign in with your Amazon.com account.

 email address password[Forgot password?](#) [Keep me signed in. Details](#)[Sign In](#)[New to Amazon? Create an account](#)

Amazon Echo (Alexa app)



INTERNET OF THINGS		3,512
 Amazon Alexa Cached Audio	1	
 Amazon Alexa Tasks	17	
 Amazon Alexa User	3	
 Amazon Alexa Web Resource	2,209	
 Fitbit Floors	3	
 Fitbit Heart Rate	757	
 Fitbit Profiles	2	
 Fitbit Sleep	45	
 Fitbit Steps	96	
 Nest Location Configuration	1	
 Nest Temperature Adjustment	15	
 Nest User	1	
 Pebble Activity Information	69	
 Pebble Applications	27	
 Pebble Calendar Events	7	
 Pebble Contacts	7	
 Pebble Detected Android Applications	110	
 Pebble Device Information	1	
 Pebble Notifications	138	
Pebble Physical Characteristics	1	

	Text	Type	Last Updated Date...	Created Date
	milk	SHOPPING_ITEM	2016-05-26 9:10:22 PM	2016-05-26 9:
	wash my car five minutes	TASK	2015-09-11 7:27:19 PM	2015-09-11 7:
	pick up my car	TASK	2015-09-11 7:36:53 PM	2015-09-11 7:
	yellow	TASK	2015-09-11 11:09:52 PM	2015-09-11 11:
	toilet paper to my wish list	TASK	2015-09-11 7:27:02 PM	2015-09-11 7:
	toilet paper to my wish list	TASK	2015-09-11 7:27:02 PM	2015-09-11 7:
	cat food	SHOPPING_ITEM	2015-09-10 6:07:57 PM	2015-09-10 6:
	pick up my car	TASK	2015-09-11 7:36:53 PM	2015-09-11 7:

milk

ARTIFACT INFORMATION

- # How this could help

 - Great info here – timestamps, tasks that have been user-dictated
 - Cloud data voice recording possibility

Amazon Echo (Alexa app)

INTERNET OF THINGS

3,512

Amazon Alexa Cached Audio 1

Amazon Alexa Tasks 17

Amazon Alexa User 3

Amazon Alexa Web Resource 2,209

Fitbit Floors 3

Fitbit Heart Rate 757

Fitbit Profiles 2

Fitbit Sleep 45

Fitbit Steps 96

Nest Location Configuration 1

Nest Temperature Adjustment 15

Nest User 1

Pebble Activity Information 69

Pebble Applications 27

Pebble Calendar Events 7

Pebble Contacts 7

Pebble Detected Android Applications 110

Pebble Device Information 1

Pebble Notifications 138

Pebble Physical Characteristics 1

Resource URL	Type
https://pitangui.amazon.com/api/partner-authorization/details?applicationDoma...	Application Link
https://pitangui.amazon.com/api/household?cached=true&_=1465822959442	Configuration
https://pitangui.amazon.com/api/devices/device?cached=true&_=1465840145873	Status
https://pitangui.amazon.com/api/cards?limit=50&beforeCreationTime=1464296...	Audio Activity
https://pitangui.amazon.com/api/partner-authorization/details?applicationDoma...	Application Link
https://pitangui.amazon.com/api/devices/device?cached=true&_=1465840145869	Status
https://pitangui.amazon.com/api/cards/A38FE4884G4J3V%231465840696062?...	Audio Activity
https://pitangui.amazon.com/api/todos?startTime=&endTime=&completed=&t...	Task

https://pitangui.amazon.com/api/cards?limit=50&beforeCreationTime=1464296678053&_=1465827405929

ARTIFACT INFORMATION

Resource URL https://pitangui.amazon.com/api/cards?
limit=50&beforeCreationTime=1464296678053&_=1465827405929

Type Audio Activity

Created Date/Time 2016-06-13 2:16:45 PM

EVIDENCE INFORMATION

Source Entire Disk (Microsoft NTFS, 952.67 GB) Windows [C:] - [ROOT]\C:\Users\jad\...
\Desktop\IoT Data\Amazon Alexa\Users\jad\Desktop\IoT Data\Amazon Alexa\1.0.165.9\data\data\com.amazon.dee.app\app_webview\Cache\623066303a8c446d_1

Location File Offset 32



Alexa Web Resource

Amazon Echo (Alexa app)



INTERNET OF THINGS	3,512	Resource URL	Type
--------------------	-------	--------------	------

Resource URL	Type	Created Date/Time	Source
https://pitangui.amazon.com/api/partner-authorization/details?applicationDoma...	Application Linking	2016-06-10 8:17:10 PM	Entire Disk
https://pitangui.amazon.com/api/household?cached=true&_=1465822959442	Configuration	2016-06-13 1:02:39 PM	Entire Disk
https://pitangui.amazon.com/api/devices/device?cached=true&_=1465840145873	Status	2016-06-13 5:49:05 PM	Entire Disk
https://pitangui.amazon.com/api/cards?limit=50&beforeCreationTime=1464296...	Audio Activity	2016-06-13 2:16:45 PM	Entire Disk
https://pitangui.amazon.com/api/partner-authorization/details?applicationDoma...	Application Linking	2016-06-10 8:17:10 PM	Entire Disk
https://pitangui.amazon.com/api/devices/device?cached=true&_=1465840145869	Status	2016-06-13 5:49:05 PM	Entire Disk

<input checked="" type="checkbox"/> Pebble Detected Android Applications	110	Source	Entire Disk (Microsoft NTFS, 952.67 GB) Windows [C:] - [ROOT]\C:\Users\jad\
<input checked="" type="checkbox"/> Pebble Device Information	1		\Desktop\IoT Data\Amazon Alexa\Users\jad\Desktop\IoT Data\Amazon Alexa
<input checked="" type="checkbox"/> Pebble Notifications	138		\1.0.165.9\data\data\com.amazon.dee.app\app_webview\Cache
<input checked="" type="checkbox"/> Pebble Physical Characteristics	1	Location	\623066303a8c446d_1



ARTIFACT INFORMATION

Resource URL [https://pitangui.amazon.com/api/cards?
limit=50&beforeCreationTime=1464296678053&_=1465827405929](https://pitangui.amazon.com/api/cards?limit=50&beforeCreationTime=1464296678053&_=1465827405929)

Type Audio Activity

Created Date/Time 2016-06-13 2:16:45 PM

EVIDENCE INFORMATION

Source [Entire Disk \(Microsoft NTFS, 952.67 GB\) Windows \[C:\\] - \[ROOT\]\C:\Users\jad\Desktop\IoT Data\Amazon Alexa\Users\jad\Desktop\IoT Data\Amazon Alexa\1.0.165.9\data\data\com.amazon.dee.app\app_webview\Cache\623066303a8c446d_1](#)

Location [File Offset 32](#)

Amazon Echo (Alexa app)



INTERNET OF THINGS	3,512
📍 Amazon Alexa Cached Audio	1
📍 Amazon Alexa Tasks	17
📍 Amazon Alexa User	3
📍 Amazon Alexa Web Resource	2,209
⌚ Fitbit Floors	3
⌚ Fitbit Heart Rate	757
⌚ Fitbit Profiles	2
⌚ Fitbit Sleep	45
⌚ Fitbit Steps	96
📍 Nest Location Configuration	1
📍 Nest Temperature Adjustment	15
📍 Nest User	1
⌚ Pebble Activity Information	69
⌚ Pebble Applications	27
⌚ Pebble Calendar Events	7
⌚ Pebble Contacts	7
⌚ Pebble Detected Android Applications	110
⌚ Pebble Device Information	1
⌚ Pebble Notifications	138
⌚ Pebble Physical Characteristics	1

Resource URL

Resource URL	Type
https://pitangui.amazon.com/api/partner-authorization/details?applicationDoma...	Application Link
https://pitangui.amazon.com/api/household?cached=true&_=1465822959442	Configuration
https://pitangui.amazon.com/api/devices/device?cached=true&_=1465840145873	Status
https://pitangui.amazon.com/api/cards?limit=50&beforeCreationTime=1464296...	Audio Activity
https://pitangui.amazon.com/api/partner-authorization/details?applicationDoma...	Application Link
https://pitangui.amazon.com/api/devices/device?cached=true&_=1465840145869	Status
https://pitangui.amazon.com/api/cards/A38FE4884G4J3V%231465840696062?...	Audio Activity
https://pitangui.amazon.com/api/todos?startTime=&endTime=&completed=&t...	Task

https://pitangui.amazon.com/api/cards?limit=50&beforeCreationTime=1464296678053&_=1465827405929

ARTIFACT INFORMATION

Resource URL: https://pitangui.amazon.com/api/cards?limit=50&beforeCreationTime=1464296678053&_=1465827405929
Type: Audio Activity
Created Date/Time: 2016-06-13 2:16:45 PM

EVIDENCE INFORMATION

Source: Entire Disk (Microsoft NTFS, 952.67 GB) Windows [C:] - [ROOT]\C:\Users\jad\Desktop\IoT Data\Amazon Alexa\Users\jad\Desktop\IoT Data\Amazon Alexa\1.0.165.9\data\data\com.amazon.dee.app\app_webview\Cache\623066303a8c446d_1
Location: File Offset 32

How this could help

- More great info here – timestamps, task types, links to the Cloud
- Possible to get the actual activity recording if you have access to the user's cloud account (legal issues here?)

Amazon Echo (Alexa app)



Cached Audio

INTERNET OF THINGS 3,512

Category	Count
Amazon Alexa Cached Audio	1
Amazon Alexa Tasks	17
Amazon Alexa User	3
Amazon Alexa Web Resource	2,209
Fitbit Floors	3
Fitbit Heart Rate	757
Fitbit Profiles	2
Fitbit Sleep	45
Fitbit Steps	96
Nest Location Configuration	1
Nest Temperature Adjustment	15
Nest User	1
Pebble Activity Information	69
Pebble Applications	27
Pebble Calendar Events	7
Pebble Contacts	7
Pebble Detected Android Applications	110
Pebble Device Information	1
Pebble Notifications	138
Pebble Physical Characteristics	1

SOURCE

Entire Disk (Microsoft NTFS, 952.67 GB) Windows [C:] - [ROOT]\C:\Users\jad\Desktop\IoT Data\Amazon Alexa\Users\jad\Desktop\IoT Data\Amazon Alexa\1.0.165.9\data\data\com.amazon.dee.app\cache\sound n/a

PREVIEW

DETAILS

ARTIFACT INFORMATION

EVIDENCE INFORMATION

Source: Entire Disk (Microsoft NTFS, 952.67 GB) Windows [C:] - [ROOT]\C:\Users\jad\Desktop\IoT Data\Amazon Alexa\Users\jad\Desktop\IoT Data\Amazon Alexa\1.0.165.9\data\data\com.amazon.dee.app\cache\sound

Location: n/a

Amazon Echo (Alexa app)



INTERNET OF THINGS	3,512
Amazon Alexa Cached Audio	1

EVIDENCE INFORMATION

Source **Entire Disk (Microsoft NTFS, 952.67 GB) Windows [C:] - [ROOT]\C:\Users\jad\Desktop\IoT Data\Amazon Alexa\Users\jad\Desktop\IoT Data\Amazon Alexa\1.0.165.9\data\data\com.amazon.dee.app\cache\sound**

Location **n/a**

Pebble Contacts	7
Pebble Detected Android Applications	110
Pebble Device Information	1
Pebble Notifications	138
Pebble Physical Characteristics	1

EVIDENCE INFORMATION

Source **Entire Disk (Microsoft NTFS, 952.67 GB) Windows [C:] - [ROOT]\C:\Users\jad\Desktop\IoT Data\Amazon Alexa\Users\jad\Desktop\IoT Data\Amazon Alexa\1.0.165.9\data\data\com.amazon.dee.app\cache\sound**

Location **n/a**

EVIDENCE (2)

Selected folder only

Column view

Name	Type	File exten...	Size (b...	...
com.android.opengl.shaders_cache	File	.shaders_cache	13,047	2016-11-22 4:47:22 PM
sound	File		198,444	2016-11-22 4:47:22 PM

```
00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F
52 49 46 46 24 07 03 00 57 41 56 45 66 6D 74 20 RIFF$...WAVEfmt
10 00 00 00 01 00 01 00 80 3E 00 00 00 7D 00 00 .....€>....}...
02 00 10 00 64 61 74 61 00 07 03 00 00 00 00 00 .....data.....
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
00 00 33 00 33 00 33 00 33 00 00 00 00 00 00 00 ..3.3.3.3. .....
00 00 00 00 00 00 00 00 00 00 33 00 33 00 33 00 .....3.3.3. .....
33 00 33 00 33 00 00 00 00 00 00 00 00 00 00 00 3.3.3. .....
00 00 00 00 CD FF 00 00 CD FF CD FF CD FF 00 00 .....íÿ..íÿíÿíÿ..
```

sound

DETAILS

File name **sound**

Logical size **198,444 bytes**

Created **2016-11-22 4:47:22 PM**

Accessed **2016-11-22 4:47:22 PM**

Modified **2016-06-13 6:35:31 PM**

File attributes **Archive**

EVIDENCE INFORMATION

Source **Entire Disk (Microsoft NTFS, 952.67 GB) Windows [C:\] - [ROOT]\C:\Users\jad\Desktop\IoT Data\Amazon Alexa\Users\jad\Desktop\IoT Data\Amazon Alexa\1.0.165.9\data\data\com.amazon.dee.app\cache\sound**

Evidence number **Amazon Alexa**

Pebble

Nest

Fitbit

OnStar Remotelink

TEXT AND HEX

EVIDENCE (2)

Selected folder only

Column view

Name	Type	File exten...	Size (b...	...
com.android.opengl.shaders_cache	File	.shaders_cache	13,047	2016-11-22 4:47:22 PM
sound	File		198,444	2016-06-13 6:35:31 PM



sound

DETAILS

File name **sound**

Logical size **198,444 bytes**

Created **2016-11-22 4:47:22 PM**

Accessed **2016-11-22 4:47:22 PM**

Modified **2016-06-13 6:35:31 PM**

File attributes **Archive**

EVIDENCE INFORMATION

Source **Entire Disk (Microsoft NTFS, 952.67 GB) Windows [C:\] - [ROOT]\C:\Users\jad\Desktop\IoT Data\Amazon Alexa\Users\jad\Desktop\IoT Data\Amazon Alexa\1.0.165.9\data\data\com.amazon.dee.app\cache\sound**

Evidence number **Amazon Alexa**

Pebble

Nest

Fitbit

OnStar Remotelink

TEXT AND HEX

Amazon Mobile Application



File Edit View Execute Options Help

Name Type
main C:\User

Tables (5)
account_data
accounts
android_metadata
device_data
sqlite_sequence

Collations (7)

account_data

_id	account_data_id	account_data_value
1	amzn1.account.AEAM5TQ27DKFM7VJXYY3SFBDCAIQ	com.amazon.dcp.sso.token.device.deviceSerialname
2	amzn1.account.AEAM5TQ27DKFM7VJXYY3SFBDCAIQ	com.amazon.dcp.sso.token.amazon.cookies.json.
3	amzn1.account.AEAM5TQ27DKFM7VJXYY3SFBDCAIQ	com.amazon.dcp.sso.property.firstname
4	amzn1.account.AEAM5TQ27DKFM7VJXYY3SFBDCAIQ	com.amazon.dcp.sso.token.oauth.amazon.access
5	amzn1.account.AEAM5TQ27DKFM7VJXYY3SFBDCAIQ	com.amazon.dcp.sso.property.devicename
6	amzn1.account.AEAM5TQ27DKFM7VJXYY3SFBDCAIQ	com.amazon.identity.cookies.xfsn
7	amzn1.account.AEAM5TQ27DKFM7VJXYY3SFBDCAIQ	com.amazon.dcp.sso.token.amazon.cookies.www
8	amzn1.account.AEAM5TQ27DKFM7VJXYY3SFBDCAIQ	com.amazon.dcp.sso.property.account.UUID
9	amzn1.account.AEAM5TQ27DKFM7VJXYY3SFBDCAIQ	com.amazon.dcp.sso.property.account.customer_
10	amzn1.account.AEAM5TQ27DKFM7VJXYY3SFBDCAIQ	com.amazon.dcp.sso.token.oauth.amazon.access
11	amzn1.account.AEAM5TQ27DKFM7VJXYY3SFBDCAIQ	authDomain
12	amzn1.account.AEAM5TQ27DKFM7VJXYY3SFBDCAIQ	com.amazon.dcp.sso.token.device.adptoken
13	amzn1.account.AEAM5TQ27DKFM7VJXYY3SFBDCAIQ	com.amazon.dcp.sso.token.devicedevicetype

Amazon Mobile Application



- Important to recover this string!
 - “amzn1.account.AEAM5TQ27DKFM7VJXYY3SFBDCAIQ”
- You can now pull this string directly by clicking on profile if you have the Amazon login credentials – NO DEVICE NEEDED!
 - <https://www.amazon.com/gp/profile/amzn1.account.AEAM5TQ27DKFM7VJXYY3SFBDCAIQ>

Cloud Data URLs

Calling and Messaging

https://alexa-mobile-service-na-preview.amazon.com/users/amzn1.comms.id.person.amzn1~amzn1.account.AEAM5TQ27DKFM7VJXYY3SFBDCAIQ/conversations/amzn1.comms.messaging.id.conversation~KEnAPYR-kjxtaYjvqetm_lhU8OQ/messages?count=100&sort=asc

Contacts

<https://alexa-mobile-service-na-preview.amazon.com/users/amzn1.comms.id.person.amzn1~amzn1.account.AEAM5TQ27DKFM7VJXYY3SFBDCAIQ/contacts>

Devices

<https://pitangui.amazon.com/api/devices/device?>

WiFi Configs

<https://pitangui.amazon.com/api/wifi/configs?>

Alexa Cloud Data



- Autopsy Plugins
 - Parses data from Alexa (and Kasa) Related Databases
 - Thanks to Mark McKinnon!
 - https://github.com/markmckinnon/Autopsy-Plugins/tree/master/Amazon_Echosystem_Parser

Alexa Cloud Data



Web Browser Listing

Kasa IOT Devices

Table Thumbnail

Source File createdOn deviceAlias deviceCategory deviceModel deviceName deviceType

Source File	createdOn	deviceAlias	deviceCategory	deviceModel	deviceName	deviceType
iot.1.db	2017-09-05 17:42:32	KasaCam	camera	KC120	Kasa Cam	IOT.IPCAMERA
iot.1.db	2017-10-02 14:09:34	Downstairs Black Lamp Light	lightBulb	LB100(US)	Smart Wi-Fi LED Bulb with Dimmable Light	IOT.SMARTBULB
iot.1.db	2017-10-02 14:09:34	Living Room Green Lamp Light	lightBulb	LB100(US)	Smart Wi-Fi LED Bulb with Dimmable Light	IOT.SMARTBULB
iot.1.db	2017-10-02 14:09:34	Kichen Sink Two	lightBulb	LB130(US)	Smart Wi-Fi LED Bulb with Color Changing	IOT.SMARTBULB
iot.1.db	2017-10-02 14:09:34	Bedroom Plant Bulb	lightBulb	LB120(US)	Smart Wi-Fi LED Bulb with Tunable White Light	IOT.SMARTBULB
iot.1.db	2017-10-02 14:09:34	Deck Lamp Light Bulb	lightBulb	LB100(US)	Smart Wi-Fi LED Bulb with Dimmable Light	IOT.SMARTBULB
iot.1.db	2017-10-02 14:09:34	Porch Outlet Light Switch	switch	HS200(US)	Wi-Fi Smart Light Switch	IOT.SMARTPLUGSWITCH
iot.1.db	2017-10-02 14:09:34	Jill's Panda Lamp Light	lightBulb	LB120(US)	Smart Wi-Fi LED Bulb with Tunable White Light	IOT.SMARTBULB
iot.1.db	2017-10-02 14:09:34	Downstairs Couch Light	switch	HS100(US)	Wi-Fi Smart Plug	IOT.SMARTPLUGSWITCH
iot.1.db	2017-10-02 14:09:34	Dino Light Bulb	lightBulb	LB100(US)	Smart Wi-Fi LED Bulb with Dimmable Light	IOT.SMARTBULB
iot.1.db	2017-10-02 14:09:34	Couch Lamp Light	lightBulb	LB100(US)	Smart Wi-Fi LED Bulb with Dimmable Light	IOT.SMARTBULB
iot.1.db	2017-10-02 14:09:34	Kitchen Sink One	lightBulb	LB130(US)	Smart Wi-Fi LED Bulb with Color Changing	IOT.SMARTBULB
iot.1.db	2017-10-02 14:09:35	Upstairs Plant Outlet	switch	HS100(US)	Wi-Fi Smart Plug	IOT.SMARTPLUGSWITCH
iot.1.db	2017-10-02 14:09:35	Downstairs Fireplace Plant Light	switch	HS100(US)	Wi-Fi Smart Plug	IOT.SMARTPLUGSWITCH
iot.1.db	2017-10-02 14:09:35	Malware Lair Smart Plug	rangeExtender	RE370K(US)	AC1200 Wi-Fi Range Extender with Smart Plug	IOT.RANGEEXTENDER.SM

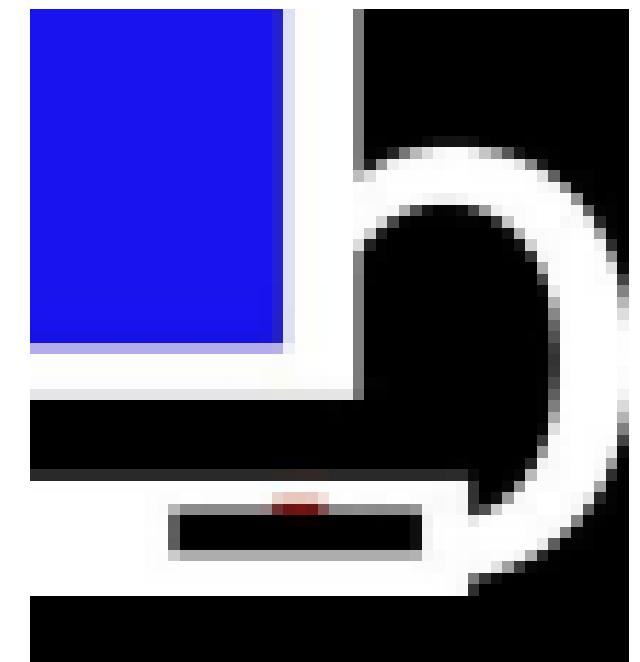
15 Results

Data Sources Views Results Extracted Content Alexa Index Caches (1) Alexa Index Entries (92) Alexa Index Groups (1) Alexa Map Data Storage Accounts (28) Alexa Map Data Storage Devices (8) Alexa Quota Manager Origin Info (1) Kasa IOT Accounts (1) Kasa IOT Devices (15) Keyword Hits Single Literal Keyword Search (0) Single Regular Expression Search (0) HashSet Hits E-Mail Messages Interesting Items Accounts Tags Reports

More Amazon Forensics Info



- Research w/ Brian Moran of BriMor Labs
- Presented at SANSDFIR Summit 2017
 - <https://www.youtube.com/watch?v=efkGuioel74>
 - <https://www.sans.org/summit-archives/file/summit-archive-1498230402.pdf>
- Presented at OSDFCon 2017
 - http://www.osdfcon.org/presentations/2017/Moran_Hyde-Alexa-are-you-skynet.pdf



Conclusion

- IoT is important – a wealth of evidence to be found
- This will start to be a big part of what we do in forensics
- IoT devices can be our suspect, witness, or victim

Thank you!

Questions?

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