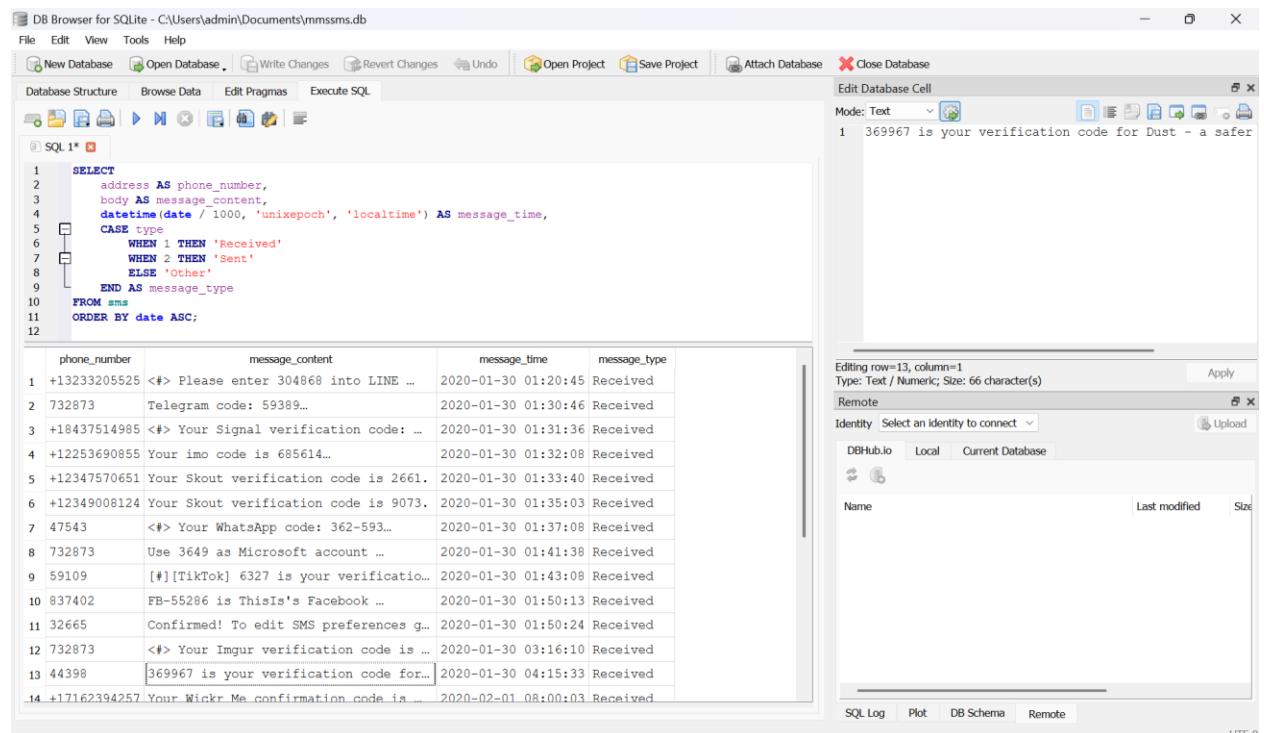


Báo cáo Lab14

1.



DB Browser for SQLite - C:\Users\admin\Documents\mmssms.db

File Edit View Tools Help

New Database Open Database Write Changes Revert Changes Undo Open Project Save Project Attach Database Close Database

Database Structure Browse Data Edit Pragmas Execute SQL

SQL 1* `SELECT address AS phone_number, body AS message_content, datetime(date / 1000, 'unixepoch', 'localtime') AS message_time, CASE type WHEN 1 THEN 'Received' WHEN 2 THEN 'Sent' ELSE 'Other' END AS message_type FROM sms ORDER BY date ASC;`

phone_number	message_content	message_time	message_type
+13233205525	<#> Please enter 304868 into LINE ...	2020-01-30 01:20:45	Received
732873	Telegram code: 59389...	2020-01-30 01:30:46	Received
+18437514985	<#> Your Signal verification code: ...	2020-01-30 01:31:36	Received
+12253690855	Your imo code is 685614...	2020-01-30 01:32:08	Received
+12347570651	Your Skout verification code is 2661.	2020-01-30 01:33:40	Received
+12349008124	Your Skout verification code is 9073.	2020-01-30 01:35:03	Received
47543	<#> Your WhatsApp code: 362-593...	2020-01-30 01:37:08	Received
732873	Use 3649 as Microsoft account ...	2020-01-30 01:41:38	Received
59109	[#][TikTok] 6327 is your verification ...	2020-01-30 01:43:08	Received
10 837402	FB-55286 is ThisIs's Facebook ...	2020-01-30 01:50:13	Received
11 32665	Confirmed! To edit SMS preferences g...	2020-01-30 01:50:24	Received
12 732873	<#> Your Ingrur verification code is ...	2020-01-30 03:16:10	Received
13 44398	369967 is your verification code for ...	2020-01-30 04:15:33	Received
14 +17162394257	Your Wickr Me confirmation code is ...	2020-02-01 08:00:03	Received

Edit Database Cell Mode: Text
1 369967 is your verification code for Dust - a safer

Editing row=13, column=1
Type: Text / Numeric; Size: 66 character(s)
Apply

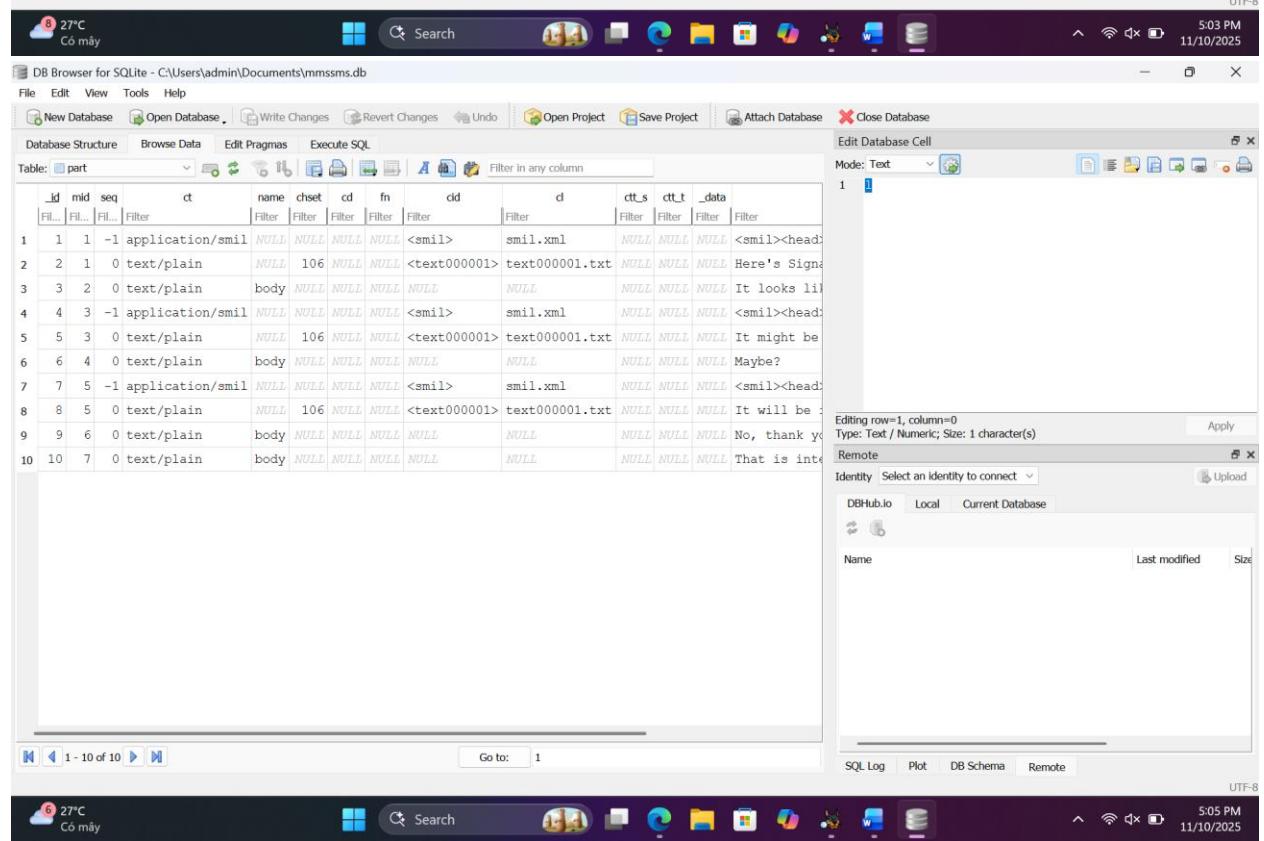
Remote Identity: Select an identity to connect
DBHub.io Local Current Database

Name Last modified Size

SQL Log Plot DB Schema Remote

UTF-8

5:03 PM 11/10/2025



DB Browser for SQLite - C:\Users\admin\Documents\mmssms.db

File Edit View Tools Help

New Database Open Database Write Changes Revert Changes Undo Open Project Save Project Attach Database Close Database

Database Structure Browse Data Edit Pragmas Execute SQL

Table: part

_id	mid	seq	ct	name	cset	cd	fn	cid	d	ctt_s	ctt_t	_data
1	1	-1	application/smil	NULL	NULL	NULL	NULL	<smil>	smil.xml	NULL	NULL	<smil><head>
2	2	1	0	text/plain	NULL	106	NULL	<text000001>	text000001.txt	NULL	NULL	NULL
3	3	2	0	text/plain	body	NULL	NULL	NULL	NULL	NULL	NULL	It looks like
4	4	3	-1	application/smil	NULL	NULL	NULL	<smil>	smil.xml	NULL	NULL	<smil><head>
5	5	3	0	text/plain	NULL	106	NULL	<text000001>	text000001.txt	NULL	NULL	NULL
6	6	4	0	text/plain	body	NULL	NULL	NULL	NULL	NULL	NULL	Maybe?
7	7	5	-1	application/smil	NULL	NULL	NULL	<smil>	smil.xml	NULL	NULL	<smil><head>
8	8	5	0	text/plain	NULL	106	NULL	<text000001>	text000001.txt	NULL	NULL	NULL
9	9	6	0	text/plain	body	NULL	NULL	NULL	NULL	NULL	NULL	No, thank you
10	10	7	0	text/plain	body	NULL	NULL	NULL	NULL	NULL	NULL	That is inter

Edit Database Cell Mode: Text
1 1

Editing row=1, column=0
Type: Text / Numeric; Size: 1 character(s)
Apply

Remote Identity: Select an identity to connect
DBHub.io Local Current Database

Name Last modified Size

SQL Log Plot DB Schema Remote

UTF-8

5:03 PM 11/10/2025

DB Browser for SQLite - C:\Users\admin\Documents\mssms.db

File Edit View Tools Help

New Database Open Database Write Changes Revert Changes Undo Open Project Save Project Attach Database Close Database

Database Structure Browse Data Edit Pragmas Execute SQL

SQL 1*

```

1  SELECT
2      P.mid AS MMS_ID,
3      datetime(H.date / 1000, 'unixepoch', 'localtime') AS Message_Timestamp,
4      P.ct AS Content_Type,
5      P.data AS Media_File_Path,
6      P.text AS Text_Content
7  FROM
8      part P
9  JOIN
10     pdu H ON P.mid = H.id
11 ORDER BY
12     Message_Timestamp DESC;

```

MMS_ID	Message_Timestamp	Content_Type	Media_File_Path	Text_Content
1 7	1970-01-19 14:21:25	text/plain	NULL	That is interesting.
2 6	1970-01-19 14:14:33	text/plain	NULL	No, thank you
3 1	1970-01-19 14:03:07	application/smil	NULL	<smil><head><layout><root-layout/>
4 1	1970-01-19 14:03:07	text/plain	NULL	Here's Signal.
5 2	1970-01-19 14:03:07	text/plain	NULL	It looks like the messaging is run ...
6 3	1970-01-19 14:03:07	application/smil	NULL	<smil><head><layout><root-layout/>
7 3	1970-01-19 14:03:07	text/plain	NULL	It might be an attempt at unified ...
8 4	1970-01-19 14:03:07	text/plain	NULL	Maybe?
9 5	1970-01-19 14:03:07	application/smil	NULL	<smil><head><layout><root-layout/>
10 5	1970-01-19 14:03:07	text/plain	NULL	It will be interesting to see where ...

Edit Database Cell

Mode: Text

NULL

No cell active. Type: NULL; Size: 0 bytes Apply

Remote Select an identity to connect

DBHub.io Local Current Database

Name Last modified Size

SQL Log Plot DB Schema Remote

27°C Có mây 5:14 PM 11/10/2025 UTF-8

2.

lab14-LamHDHE190825 - Autopsy 4.22.1

Case View Tools Window Help

Add Data Source Images/Videos Communications Geolocation Timeline Discovery Generate Report Close Case Keyword Lists Keyword Search

Listing /LogicalFileSet1/Pixel 3/data/data/com.android.providers.contacts/databases

Table Thumbnail Summary 3 Results

Save Table as CSV

Time	Created Time	Size	Flags
-00 00:00:00	0000-00-00 00:00:00	40960	Alloc
-00 00:00:00	0000-00-00 00:00:00	376832	Alloc
-00 00:00:00	0000-00-00 00:00:00	376832	Alloc

Save in: Documents

Recent Items

- C++
- Custom Office Templates
- IELTS
- Virtual Machines
- mssms
- TỔNG HỢP KIẾN THỨC TRANG BỊ CHO THỰC TẬP

File name: contacts2.db

File of type: All Files

Save Cancel

Annotations Other Occurrences

iOS Analyzer (ILEAPP) for LogicalFileSet1 (3 more...) 5:15 PM 11/10/2025

27°C Có mây 5:14 PM 11/10/2025

DB Browser for SQLite - C:\Users\admin\Documents\contacts2.db

File Edit View Tools Help

New Database Open Database Write Changes Revert Changes Undo Open Project Save Project Attach Database Close Database

Database Structure Browse Data Edit Pragmas Execute SQL

Create Table Create Index Modify Table Delete Table Print Refresh

Name Type Schema

Tables (39)

- _sync_state
- _sync_state_metadata
- accounts
- agg_exceptions
- agg_presence
- android_metadata
- contacts
- data
- data_usage_stat
- default_directory
- deleted_contacts
- directories
- groups
- metadata_sync
- metadata_sync_state
- mimetypes
- name_lookup
- nickname_lookup
- packages
- phone_lookup
- photo_files
- pre_authorized_uris
- presence
- properties
- raw_contacts
- search_index
- android_index_contacts

```

CREATE TABLE _sync_state (_id INTEGER PRIMARY KEY, account_nar
CREATE TABLE _sync_state_metadata (version INTEGER)
CREATE TABLE accounts (_id INTEGER PRIMARY KEY AUTOINCREMENT
CREATE TABLE agg_exceptions (_id INTEGER PRIMARY KEY AUTOINCREMENT
CREATE TABLE agg_presence (presence_contact_id INTEGER PRIMAR
CREATE TABLE android_metadata (locale TEXT)
CREATE TABLE contacts (_id INTEGER PRIMARY KEY AUTOINCREMENT
CREATE TABLE data (_id INTEGER PRIMARY KEY AUTOINCREMENT, p
CREATE TABLE data_usage_stat(stat_id INTEGER PRIMARY KEY AUTO
CREATE TABLE default_directory (_id INTEGER PRIMARY KEY)
CREATE TABLE deleted_contacts (contact_id INTEGER PRIMARY KEY,
CREATE TABLE directories(_id INTEGER PRIMARY KEY AUTOINCREMENT
CREATE TABLE groups (_id INTEGER PRIMARY KEY AUTOINCREMENT)
CREATE TABLE metadata_sync (_id INTEGER PRIMARY KEY AUTOINCREMENT
CREATE TABLE metadata_sync_state (_id INTEGER PRIMARY KEY AUTO
CREATE TABLE mimetypes (_id INTEGER PRIMARY KEY AUTOINCREMENT
CREATE TABLE name_lookup (data_id INTEGER REFERENCES data(_i
CREATE TABLE nickname_lookup (name TEXT, cluster TEXT)
CREATE TABLE packages (_id INTEGER PRIMARY KEY AUTOINCREMENT
CREATE TABLE phone_lookup (data_id INTEGER REFERENCES data(_i
CREATE TABLE photo_files (_id INTEGER PRIMARY KEY AUTOINCREMENT
CREATE TABLE pre_authorized_uris (_id INTEGER PRIMARY KEY AUTO
CREATE TABLE presence (presence_data_id INTEGER PRIMARY KEY !
CREATE TABLE properties (property_key TEXT PRIMARY KEY, propert
CREATE TABLE raw_contacts (_id INTEGER PRIMARY KEY AUTOINCREMENT
CREATE VIRTUAL TABLE search_index USING FTS4 (contact_id INTEG
CREATE TABLE _search_index_contacts(contact_id INTEGER PRIMARY KEY)

```

No cell active.

Type: NULL; Size: 0 bytes

Remote

Identity Select an identity to connect

DBHub.io Local Current Database

Name Last modified Size

SQL Log Plot DB Schema Remote

UTF-8

27°C Có mây

Search

5:16 PM 11/10/2025

DB Browser for SQLite - C:\Users\admin\Documents\contacts2.db

File Edit View Tools Help

New Database Open Database Write Changes Revert Changes Undo Open Project Save Project Attach Database Close Database

Database Structure Browse Data Edit Pragmas Execute SQL

SQL 1*

```

10   FROM raw_contacts rc
11   LEFT JOIN data AS name_data
12     ON rc._id = name_data.raw_contact_id
13     AND name_data.mimetype_id = (
14       SELECT _id FROM mimetypes WHERE mimetype = 'vnd.android.cursor.item/name'
15     )
16   LEFT JOIN data AS phone_data
17     ON rc._id = phone_data.raw_contact_id
18     AND phone_data.mimetype_id = (
19       SELECT _id FROM mimetypes WHERE mimetype = 'vnd.android.cursor.item/phone_v2'
20     )
21 ORDER BY contact_name ASC;

```

contact_name	phone_number	phone_type
1 Josh Hickman	+990841016803084	Other
2 Josh Hickman	+990841016803084	Other
3 Josh Hickman	(919) 579-0479	Mobile
4 Josh Hickman	NULL	Other
5 Josh Hickman	NULL	Other
6 Josh Hickman	(919) 579-0479	Other
7 Josh Hickman	NULL	Other
8 Josh Hickman	NULL	Other
9 Josh Hickman	9195790479	Mobile
10 Josh Hickman	(919) 579-0479	Mobile

No cell active.

Type: NULL; Size: 0 bytes

Remote

Identity Select an identity to connect

DBHub.io Local Current Database

Name Last modified Size

SQL Log Plot DB Schema Remote

UTF-8

27°C Có mây

Search

5:25 PM 11/10/2025

DB Browser for SQLite - C:\Users\admin\Documents\contacts2.db

File Edit View Tools Help

New Database Open Database Write Changes Revert Changes Undo Open Project Save Project Attach Database Close Database

Database Structure Browse Data Edit Pragmas Execute SQL

SQL 1*

```

1  SELECT
2      -- NAMES: Thủ hồi tên
3      (SELECT data FROM data WHERE raw_contact_id = R._id AND mimetype_id = (SELECT _id FROM mimetypes WHERE
4
5      -- NUMBERS: Thủ hồi số
6      D2.data AS Phone_Number,
7
8      -- ASSOCIATIONS: Mối liên kết (Tài khoản và Nguồn)
9      A.account_name AS Associated_Account,
10     A.account_type AS Association_Source
11
12     FROM
13     raw_contacts R
14     JOIN
15     accounts A ON R.account_id = A._id
16     JOIN
17     data D2 ON D2.raw_contact_id = R._id
18     WHERE
19     -- Chỉ lọc những bản ghi là số điện thoại
20     D2.mimetype_id = (SELECT _id FROM mimetypes WHERE mimetype = 'vnd.android.cursor.item/phone_v2');

```

Contact_Name	Phone_Number	Associated_Account	Association_Source
1 Josh Hickman (919) 579-0479		thisiedfir@gmail.com	com.google
2 Josh Hickman (919) 579-0479		Signal	org.thoughtcrime.securesms
3 Josh Hickman (919) 579-0479		Duo	com.google.android.apps.tachyon
4 Josh Hickman +990841016803084	858233690		org.telegram.messenger
5 Josh Hickman +990841016803084	858233690		org.telegram.messenger
6 Josh Hickman 9195790479	WhatsApp		com.whatsapp

No cell active.

Type: NULL; Size: 0 bytes

Identity Select an identity to connect

DBHub.io Local Current Database

Apply

Upload

UTF-8

5:26 PM 11/10/2025

3.

lab14-LamHDHE190825 - Autopsy 4.22.1

Case View Tools Window Help

Add Data Source Images/Videos Communications Geolocation Timeline Discovery Generate Report Close Case Keyword Lists Keyword Search

Listing /LogicalFileSet1/Pixel 3/data/data/com.android.providers.contacts/databases

Table Thumbnail Summary

Save Table as CSV

Time	Created Time	Size	Flags
-00 00:00:00	0000-00-00 00:00:00	40960	Alloc
-00 00:00:00	0000-00-00 00:00:00	376832	Alloc
-00 00:00:00	0000-00-00 00:00:00	376832	Alloc

Annotations Other Occurrences

Save in: Documents

Recent Items

Desktop

Documents

This PC

Network

File name: calllog.db

Files of type: All Files

Cancel

locale

en_US

Annotations Other Occurrences

211 PM 11/13/2025

DB Browser for SQLite - C:\Users\admin\Desktop\calllog.db

File Edit View Tools Help

New Database Open Database Write Changes Revert Changes Undo Open Project Save Project Attach Database Close Database

Database Structure Browse Data Edit Pragmas Execute SQL

Create Table Create Index Modify Table Delete Table Print Refresh

Name Type Schema

Tables (5)

- android_metadata
- calls
- properties
- sqlite_sequence
- voicemail_status

Indices (0)

Views (0)

Triggers (0)

```

CREATE TABLE android_metadata (locale TEXT)
CREATE TABLE calls (_id INTEGER PRIMARY KEY AUTOINCREMENT, num
CREATE TABLE properties (property_key TEXT PRIMARY KEY, property_
CREATE TABLE sqlite_sequence(name,seq)
CREATE TABLE voicemail_status (_id INTEGER PRIMARY KEY AUTOINCREMENT, num

```

No cell active. Type: NULL; Size: 0 bytes Apply

Remote Identity Select an identity to connect Upload

DBHub.io Local Current Database

Name Last modified Size

SQL Log Plot DB Schema Remote

UTF-8

27°C Có nắng

Search

2:17 PM 11/13/2025

DB Browser for SQLite - C:\Users\admin\Desktop\calllog.db

File Edit View Tools Help

New Database Open Database Write Changes Revert Changes Undo Open Project Save Project Attach Database Close Database

Database Structure Browse Data Edit Pragmas Execute SQL

SQL 1* NULL

```

1 SELECT
2   COALESCE(name, 'Unknown') AS contact_name,
3   number AS phone_number,
4   CASE type
5     WHEN 1 THEN 'Incoming'
6     WHEN 2 THEN 'Outgoing'
7     WHEN 3 THEN 'Missed'
8     WHEN 4 THEN 'Voicemail'
9     WHEN 5 THEN 'Rejected'
10    ELSE 'Other'
11  END AS call_type,
12  datetime(date / 1000, 'unixepoch', 'localtime') AS call_time,
13  duration AS duration_seconds
14 FROM calls
15 ORDER BY date ASC;

```

	contact_name	phone_number	call_type	call_time	duration_seconds
8	Unknown	+19195121037	Voicemail	2020-02-12 22:38:21	3
9		+15755863247	Missed	2020-02-13 07:52:44	0
10	Unknown	+15755863247	Voicemail	2020-02-13 07:53:33	3
11	Josh Hickman	9195790479	Outgoing	2020-02-14 08:29:01	11
12	Josh Hickman	+19195790479	Incoming	2020-02-14 08:30:24	65
13	Josh Hickman	9195790479	Outgoing	2020-02-14 20:05:57	86
14	Josh Hickman	9195790479	Incoming	2020-02-14 21:41:18	91

No cell active. Type: NULL; Size: 0 bytes Apply

Remote Identity Select an identity to connect Upload

DBHub.io Local Current Database

Name Last modified Size

SQL Log Plot DB Schema Remote

UTF-8

4.

The screenshot shows the Autopsy 4.22.1 interface. A 'Save' dialog box is open, prompting the user to save a file named 'History' to the 'Desktop'. The 'Save in:' dropdown is set to 'Desktop'. The 'File name:' field contains 'History'. The 'Files of type:' dropdown is set to 'All Files'. In the background, a table view displays a list of files from the '/LogicalFileSet1/Pixel 3/data/data/com.android.chrome/app_chrome/Default' folder. The table has columns for 'Name', 'Access Time', and 'Created Time'. The first few rows show files like 'app_chrome (11)', 'Default (54)', and 'FileTypePolicies (1)'. The bottom right corner of the table view shows a 'Save Table as CSV' button.

The screenshot shows the DB Browser for SQLite application. The main window title is 'DB Browser for SQLite - C:\Users\admin\Desktop\History'. The toolbar includes 'File', 'Edit', 'View', 'Tools', and 'Help'. The menu bar has 'New Database', 'Open Database', 'Write Changes', 'Revert Changes', 'Undo', 'Open Project', 'Save Project', and 'Attach Database'. A 'Close Database' button is also present. The left sidebar has tabs for 'Database Structure', 'Browse Data', 'Edit Pragmas', and 'Execute SQL'. The 'Execute SQL' tab is active, showing the following SQL query:

```
1 SELECT
2     url,
3     title,
4     visit_count,
5     datetime((last_visit_time/1000000)-11644473600, 'unixepoch', 'localtime') AS last_visit_time
6 FROM urls
7 ORDER BY last_visit_time DESC;
```

The results of the query are displayed in a table below:

url	title	visit_count	last_visit_time
https://magiskmanager.com/...	Downloading Magisk Manager... ...	1	2020-02-15 0
https://www.google.com/shopping/...	famicom - Google Shopping	2	2020-02-01 0
https://m.facebook.com/a/nux/wizard/...	Add a Picture	1	2020-01-30 0
https://m.facebook.com/...	Add a Picture	1	2020-01-30 0
https://m.facebook.com/...	Add Friends	1	2020-01-30 0
https://m.facebook.com/home.php?...	Add Friends	1	2020-01-30 0

The bottom right corner of the application window shows the status bar with '2:21 PM' and '11/13/2025'.

5.

WhatsApp

-Lấy tin nhắn và nội dung

The screenshot shows the DB Browser for SQLite interface with the WhatsApp database open. The SQL tab contains the following query:

```
1  SELECT
2      chat_list.key_remote_jid AS contact_id,
3      messages.data AS message_content,
4      datetime(messages.timestamp/1000, 'unixepoch', 'localtime') AS message_time,
5      CASE messages.key_from_me
6          WHEN 1 THEN 'Sent'
7          ELSE 'Received'
8      END AS direction
9  FROM messages
10 JOIN chat_list
11     ON messages.key_remote_jid = chat_list.key_remote_jid
12 ORDER BY messages.timestamp ASC;
```

The results of the query are displayed in a table:

contact_id	message_content	message_time	direction
11 19195790479@s.whatsapp.net	Hi there! I switched over.	2020-02-09 03:55:14	Sent
12 19195790479@s.whatsapp.net	NULL	2020-02-09 03:55:14	Sent
13 19195790479@s.whatsapp.net	Awesome!	2020-02-09 03:56:05	Received
14 19195790479@s.whatsapp.net	NULL	2020-02-09 03:57:05	Received
15 19195790479@s.whatsapp.net	The Osbourne!	2020-02-09 03:57:49	Sent
16 19195790479@s.whatsapp.net	NULL	2020-02-09 03:58:12	Sent
17 19195790479@s.whatsapp.net	NULL	2020-02-10 01:00:14	Sent

Telegram

The screenshot shows the DB Browser for SQLite interface with the Telegram database open. The Database Structure tab displays a list of tables:

- Tables (46):
 - bot_info
 - bot_keyboard
 - botcache
 - channel_admins_v2
 - channel_users_v2
 - chat_hints
 - chat_pinned
 - chat_settings_v2
 - chats
 - contacts
 - dialog_settings
 - dialogs
 - download_queue
 - emoji_keywords_info_v2
 - emoji_keywords_v2
 - enc_chats
 - enc_tasks_v2
 - hashtag_recent_v2
 - keyvalue
 - media_counts_v2
 - media_holes_v2
 - media_v2
 - messages
 - messages_holes
 - messages_seq
 - params

The Schema tab shows the CREATE TABLE statements for each of these tables.

DB Browser for SQLite - C:\Users\admin\Desktop\cache4.db

File Edit View Tools Help

New Database Open Database Write Changes Revert Changes Undo Open Project Save Project Attach Database Close Database

Database Structure Browse Data Edit Pragmas Execute SQL

SQL 1*

```

1 SELECT
2   users.name,
3   datetime(messages.date, 'unixepoch', 'localtime') AS date_readable
4   FROM messages
5   JOIN users ON messages.uid = users.uid
6   ORDER BY messages.date DESC;
7

```

name	date_readable
1 josh hickman;::	2020-02-04 09:07:16
2 josh hickman;::	2020-02-04 09:05:29
3 josh hickman;::	2020-02-04 09:03:07
4 josh hickman;::	2020-02-04 09:01:55
5 josh hickman;::	2020-02-04 09:01:16
6 josh hickman;::	2020-02-04 09:00:28
7 josh hickman;::	2020-02-04 08:59:39

No cell active.
Type: NULL; Size: 0 bytes

Edit Database Cell Mode: Text

Remote Identity Public

DBHub.io Local Current Database

Name Last modified Size

SQL Log Plot DB Schema Remote

UTF-8

27°C Có nắng Search 2:43 PM 11/13/2025

6.

bảng external

DB Browser for SQLite - C:\Users\admin\Desktop\external.db

File Edit View Tools Help

New Database Open Database Write Changes Revert Changes Undo Open Project Save Project Attach Database Close Database

Database Structure Browse Data Edit Pragmas Execute SQL

Create Table Create Index Modify Table Delete Table Print Refresh

Name	Type	Schema
Tables (12)		
> album_art		CREATE TABLE album_art (album_id INTEGER PRIMARY KEY,_data T
> albums		CREATE TABLE albums (album_id INTEGER PRIMARY KEY,album_key
> android_metadata		CREATE TABLE android_metadata (locale TEXT)
> artists		CREATE TABLE artists (artist_id INTEGER PRIMARY KEY,artist_key TE
> audio_genres		CREATE TABLE audio_genres (_id INTEGER PRIMARY KEY,name TEX
> audio_genres_map		CREATE TABLE audio_genres_map (_id INTEGER PRIMARY KEY,audi
> audio_playlists_map		CREATE TABLE audio_playlists_map (_id INTEGER PRIMARY KEY,aud
> files		CREATE TABLE files (_id INTEGER PRIMARY KEY AUTOINCREMENT,_,
> log		CREATE TABLE log (time DATETIME,message TEXT)
> sqlite_sequence		CREATE TABLE sqlite_sequence(name,seq)
> thumbnails		CREATE TABLE thumbnails (_id INTEGER PRIMARY KEY,_data TEXT,i
> videotumbnails		CREATE TABLE videotumbnails (_id INTEGER PRIMARY KEY,_data T
Indices (17)		
> <album_id_idx		CREATE INDEX album_id_idx ON files(album_id)
> <album_idx		CREATE INDEX album_idx ON albums(album)
> <albumkey_index		CREATE INDEX albumkey_index ON albums(album_key)
> <artist_id_idx		CREATE INDEX artist_id_idx ON files(artist_id)
> <artist_idx		CREATE INDEX artist_idx ON artists(artist)
> <artistkey_index		CREATE INDEX artistkey_index ON artists(artist_key)
> <bucket_index		CREATE INDEX bucket_index ON files(bucket_id,media_type,datetaker
> <bucket_name		CREATE INDEX bucket_name ON files(bucket_id,media_type,bucket_d
> <format_index		CREATE INDEX format_index ON files(format)
> <image_id_index		CREATE INDEX image_id_index ON thumbnails(image_id)
> <media_type_index		CREATE INDEX media_type_index ON files(media_type)
> <parent_index		CREATE INDEX parent_index ON files(parent)
> <path_index		CREATE INDEX path_index ON files(_data)

No cell active.
Type: NULL; Size: 0 bytes

Edit Database Cell Mode: Text

Remote Identity Select an identity to connect

DBHub.io Local Current Database

Name Last modified Size

SQL Log Plot DB Schema Remote

UTF-8

27°C Có nắng Search 2:52 PM 11/13/2025

-Lấy ảnh và video

DB Browser for SQLite - C:\Users\admin\Desktop\external.db

File Edit View Tools Help

New Database Open Database Write Changes Revert Changes Undo Open Project Save Project Attach Database Close Database

Database Structure Browse Data Edit Pragmas Execute SQL

SQL 1* `SELECT _id, _data AS file_path, title, media_type, datetime(datetaken/1000, 'unixepoch', 'localtime') AS date_taken, date_modified, date_added FROM files WHERE media_type IN (1, 3) -- 1=image, 3=video, có thể tùy DB ORDER BY datetaken ASC;`

_id	file_path	title	media_type	da
1	/storage/emulated/0/Download/...	image0	1	NULL
2	/storage/emulated/0/Download/...	Nintendo-Famicom-Disk-System	1	NULL
3	/storage/emulated/0/DCIM/Restored/...	2ECE61BB-39FB-454D-8B63-E336F88A0E18	1	NULL
4	/storage/emulated/0/Pictures/...	received_517951378846562	1	NULL
5	/storage/emulated/0/Download/Imgur/...	T5MbUp9	1	NULL
6	/storage/emulated/0/Download/Imgur/...	aHIO2nX	1	NULL

No cell active.
Type: NULL; Size: 0 bytes

Identity Select an identity to connect

DBHub.io Local Current Database

SQL Log Plot DB Schema Remote

UTF-8

27°C Có nắng

Search

2:53 PM 11/13/2025

Bảng internal

lab14-LamHDHE190825 - Autopsy 4.22.1

Case View Tools Window Help

Add Data Source Images/Videos Communications Geolocation Timeline Discovery Generate Report Close Case

Listing /LogicalFileSet1/Pixel 3/data/data/com.android.providers.media/databases

Table Thumbnail Summary

Save Table as CSV

Annotations Other Occurrences

Save in: Desktop

Recent Items

Desktop Documents This PC Network

File name: internal.db

File of type: All Files

locale en_US

Save Cancel

Save

External FTK Imager Visual Studio Code cache4 callig Dev-C++ external external.db-shm external.db-wal History internal Lenovo Now Discovery Microsoft Edge mmsms msgstore Pixel 3

Safe Exam Browser threads_db threads_db2 UltraViewer UniKeyNT VMware Workstation Pro wa Zalo

2 Results

Name	Created Time	Size	Flags
internal	00:00:00	0000-00-00 00:00:00	212992 Allocat
internal	00:00:00	0000-00-00 00:00:00	163840 Allocat

Annotations Other Occurrences

2:54 PM 11/13/2025

27°C Có nắng

Search

DB Browser for SQLite - C:\Users\admin\Desktop\internal.db

File Edit View Tools Help

New Database Open Database Write Changes Revert Changes Undo Open Project Save Project Attach Database Close Database

Database Structure Browse Data Edit Pragmas Execute SQL

Create Table Create Index Modify Table Delete Table Print Refresh

Name Type Schema

Tables (9)

- > album_art
- > albums
- > android_metadata
- > artists
- > files
- > log
- > sqlite_sequence
- > thumbnails
- > videotumbnails

Indices (17)

- > album_id_idx
- > album_idx
- > albumkey_index
- > artist_id_idx
- > artist_idx
- > artistkey_index
- > bucket_index
- > bucket_name
- > format_index
- > image_id_index
- > media_type_index
- > parent_index
- > path_index
- > sort_index
- > title_idx
- > titlekey_index
- > video_id_index

```

CREATE TABLE album_art (_id INTEGER PRIMARY KEY, _data TEXT)
CREATE TABLE albums (_id INTEGER PRIMARY KEY, album_key TEXT)
CREATE TABLE android_metadata (locale TEXT)
CREATE TABLE artists (artist_id INTEGER PRIMARY KEY, artist_key TEXT)
CREATE TABLE files (_id INTEGER PRIMARY KEY AUTOINCREMENT, _data BLOB)
CREATE TABLE log (time DATETIME, message TEXT)
CREATE TABLE sqlite_sequence(name,seq)
CREATE TABLE thumbnails (_id INTEGER PRIMARY KEY, _data TEXT, _id2 INTEGER PRIMARY KEY, _data2 TEXT)
CREATE TABLE videotumbnails (_id INTEGER PRIMARY KEY, _data TEXT)

```

No cell active. Type: NULL; Size: 0 bytes Apply

Remote Select an identity to connect Upload

DBHub.io Local Current Database

Name Last modified Size

SQL Log Plot DB Schema Remote

UTF-8

-Xem file

DB Browser for SQLite - C:\Users\admin\Desktop\internal.db

File Edit View Tools Help

New Database Open Database Write Changes Revert Changes Undo Open Project Save Project Attach Database Close Database

Database Structure Browse Data Edit Pragmas Execute SQL

SQL 1* SQL 2*

```
1 SELECT * FROM files;
```

_id	_data	_size	format	parent	date_added	date_modified	mime_type
1	/storage	NULL	12289	-1	NULL	1580312294	NULL
2	/storage/emulated	NULL	12289	1	NULL	1580312295	NULL
3	/storage/emulated/0	NULL	12289	2	NULL	1580312300	NULL
4	/storage/emulated/0/Music	NULL	12289	3	NULL	1580312300	NULL
5	/storage/emulated/0/Podcasts	NULL	12289	3	NULL	1580312300	NULL
6	/storage/emulated/0/Ringtones	NULL	12289	3	NULL	1580312300	NULL

No cell active. Type: NULL; Size: 0 bytes Apply

Remote Select an identity to connect Upload

DBHub.io Local Current Database

Name Last modified Size

SQL Log Plot DB Schema Remote

UTF-8

-Xem log

DB Browser for SQLite - C:\Users\admin\Desktop\internal.db

File Edit View Tools Help

New Database Open Database Write Changes Revert Changes Undo Open Project Save Project Attach Database Close Database

Database Structure Browse Data Edit Pragmas Execute SQL

SQL 1* SQL 2* SQL 3* SQL 4* SQL 5*

```
1 SELECT * FROM log ORDER BY time DESC;
```

	time	message
1	2020-02-14 15:52:04.811	internal.db: version 1023, 86 rows, ...
2	2020-02-14 15:00:29.330	internal.db: version 1023, 86 rows, ...
3	2020-02-01 04:05:02.082	internal.db: version 1023, 86 rows, ...
4	2020-02-01 04:04:56.578	internal.db: version 1023, 86 rows, ...
5	2020-01-29 16:42:30.052	internal.db: version 1023, 86 rows, ...
6	2020-01-29 16:36:10.858	internal.db: version 1023, 86 rows, ...
7	2020-01-29 15:38:28.890	internal.db: version 1023, 86 rows, ...

No cell active.
Type: NULL; Size: 0 bytes

Edit Database Cell Mode: Text

Remote Identity Select an identity to connect

DBHub.io Local Current Database

Name Last modified Size

SQL Log Plot DB Schema Remote

UTF-8

-Lấy data

DB Browser for SQLite - C:\Users\admin\Desktop\internal.db

File Edit View Tools Help

New Database Open Database Write Changes Revert Changes Undo Open Project Save Project Attach Database Close Database

Database Structure Browse Data Edit Pragmas Execute SQL

SQL 1*

```
1 SELECT
2     _data AS File_Path,
3     mime_type AS File_MIME_Type,
4     datetime(date_added, 'unixepoch', 'localtime') AS Date_Added_Timestamp,
5     datetime(date_modified, 'unixepoch', 'localtime') AS Last_Modified_Timestamp,
6     _size AS File_Size_Bytes
7
8 FROM
9     files;
```

	File_Path	File_MIME_Type	Date_Added_Timestamp	Last_Modified_Timestamp	File_Size_Bytes
81	/product/media/audio/ringtones/...	audio/ogg	2020-01-29 22:38:28	2019-12-18 02:34:12	6973
82	/product/media/audio/ringtones/...	audio/ogg	2020-01-29 22:38:28	2019-12-18 02:34:12	2353
83	/product/media/audio/ringtones/...	audio/ogg	2020-01-29 22:38:28	2019-12-18 02:34:12	9660
84	/product/media/audio/ringtones/...	audio/ogg	2020-01-29 22:38:28	2019-12-18 02:34:12	1281
85	/product/media/bootanimation-dark.zip	application/zip	2020-01-29 22:38:28	2019-12-18 02:34:12	2415
86	/product/media/bootanimation.zip	application/zip	2020-01-29 22:38:28	2019-12-18 02:34:12	2431

No cell active.
Type: NULL; Size: 0 bytes

Edit Database Cell Mode: Text

Remote Identity Select an identity to connect

DBHub.io Local Current Database

Name Last modified Size

SQL Log Plot DB Schema Remote

UTF-8

7.

lab14-LamHDHE190825 - Autopsy 4.22.1

Case View Tools Window Help

Add Data Source Images/Videos Communications Geolocation Timeline Discovery Generate Report Close Case

Listing /LogicalFileSet1/Pixel 3/data/misc/wifi
Table Thumbnail Summary

Save Table as CSV

Name S C O Modified Time Change Time Access Time Created Time Size

Hex Text Application File Metadata OS Account Data Artifacts Analysis Results Context Annotations Other Occurrences

Strings Extracted Text Translation

Page: 1 of 1 Page Go to Page: Script: Latin - Basic

```
<?xml version='1.0' encoding='utf-8' standalone='yes' ?>
<WifiConfigStoreData>
<int name="Version" value="2" />
<Integrity>
<byte-array name="EncryptedData"
num="48">e71394aa95f2d767a1c46e787ca99c0478e12467241553a8551005969fd38294e8a4082529d69a15d5bc49f28ca21a54</byte-array>
<byte-array name="IV" num="12">18234dad790da5cb3ba8eceb</byte-array>
</Integrity>
<NetworkList />
<MacAddressMap>
<map name="MacMapEntry">
<string name="&quot;CookiesDcastleR5&quot;WPA_PSK">ae:f6:c7:a8:a5:c2</string>
</map>
</MacAddressMap>
<PasspointConfigData>
<long name="ProviderIndex" value="0" />
</PasspointConfigData>
</WifiConfigStoreData>
```

AUD/VND +0.63% 3:00 PM 11/13/2025