Appendix. Table on restoring original multimedia file by reassembling fragmented cache files

OS	Application	Target services	Path	Features for restoration (Please refer to notes for the meaning of ✓, weak ✔, X)		Cache type
Windows	Chrome (v80.0.3987.162)	Youtube	C://%localappdata%/Google/Chrome/User Data/Default/Cache	ei={videoID} range={seq}-{seqEnd} → Video classification by 'ei' value, reassembling 'seq' and 'seqEnd' in order	✔	T3
		Dailymotion		sec({videoID}) frag({seq}) → Video classification by 'videoID' value, reassembling 'seq' in order	✔	T2
		TikTok		vr=:{timestamp}:{seq} → Video classification by 'videoID' value, reassembling 'seq' in order	✔	T1
		Instagram		oe={timestamps}:{videoID}:{seq} → Video classification by 'videoID' value, reassembling 'seq' in order	✔	T1
		Snapchat		sc-cdn.net/1d/{videoID}..(skip)..-{media ǀ embedded}.mp4 → Extract the file with the URL	✔	T4
		LINE-Google Chrome		line-apps,com/{videoID}?..(skip)..&brown={random-number}:{timestamp}:{seq} → Video classification by 'videoID' value, reassembling 'seq' in order	✔	T1
		web.telegram.org	C://%localappdata%/Google/Chrome/UserData/Default/IndexedDB/https_web.telegram.org_0	Video, Image O ※Check Signature Values	✔	T4
	Desktop for Telegram (v2.1.6)	Telegram	C://{Userprofile}/AppData/Roaming/Telegram Desktop/tdat/user_data/cache	(Encryption)	X	X
			C://{Userprofile}/AppData/Roaming/TelegramDesktop/tdat/user_data/media_cache			
	LINE (v6.0.0.2179)	LINE	C://{Userprofile}/AppData/Local/LINE/Cache/p	Image O ※Check Signature Values	X	X
			C://{Userprofile}/AppData/Local/LINE/Cache/m			
Android	Chrome (v80.0.3987.162)	Youtube	data/data/com.sec.android.app.sbrowser/cache/Cache	ei={videoID} range={seq}-{seqEnd} → Video classification by 'ei' value, reassembling 'seq' and 'seqEnd' in order	✔	T3
		Dailymotion		sec({videoID}) frag({seq}) → Video classification by 'videoID' value, reassembling 'seq' in order	✔	T2
		Snapchat		sc-cdn.net/1d/{videoID}..(skip)..-	✔	T4

OS	Application	Target services	Path	Features for restoration (Please refer to notes for the meaning of ✓, weak ✓, X)		Cache type
				{media ｜ embedded}.mp4 → Extract the file with the URL		
	Sbrowser (v7.0.10.56)	Youtube	data/data/com.android/chrome/cache/Cache	ei={videoID} range={seq}-{seqEnd} → Video classification by 'ei' value, reassembling 'seq' and 'seqEnd' in order	✓	T3
		Dailymotion		sec({videoID}) frag({seq}) → Video classification by 'videoID' value, reassembling 'seq' in order	✓	T2
		Snapchat		sc-cdn.net/1d/{videoID}..(skip)..-{media ｜ embedded}.mp4 → Extract the file with the URL	✓	T4
	App_Youtube (v15.14.33)	Youtube	data/media/0/Android/data/com.google.android.youtube.cache/exo/{0,1,2,3,4,5}/	(Encryption)	X	X
	App_ Dailymotion (v1.48.45)	Dailymotion	data/data/com.dailymotion.dailymotion/cache/Picasso-cache/{16HexBytes}	Image O ※Check Signature Values	weak ✓	X
			/data/com.dailymotion.dailymotion/databases/dm_shared_sqldelight.db	Reassemble URL to 'xid'		
	App_TikTok (v15.7.4)	TikTok	data/data/com.ss.android.ugc.trill/cache/cache/{16HexBytes}/	Video O ※Check Signature Values	✓	T4
	App_ Instagram (v135.0.0.28.119)	Instagram	data/data/com.Instagram.android/cache/ExoPlayerCacheDir/videocache/	FileName == '{videoID}_n.{mp4 ｜ webm}.{seq}.{timestamp}.v2.exo' → Video classification by 'videoID' value, reassembling 'seq' in order	✓	T1
			data/data/com.Instagram.android/files/videos	Video O ※Check Signature Values	✓	T4
			data/data/com.Instagram.android/cache/images	Image O ※Check Signature Values	X	X
	App_Snapchat (v10.80.0.0)	Snapchat	data/data/com.snapchat.android/files/file_manager/media_package_thumb/	Image O ※Check Signature Values	✓	T4
			data/data/com.snapchat.android/files/file_manager/snap/	Video O ※Check Signature Values		
			data/data/com.snapchat.android/files/file_manager/posted_story_snap/	Video O ※Check Signature Values		
			data/data/com.snapchat.android/files/file_manager/discover_story_snap/	Video, Image O ※Check Signature Values		
			data/data/com.snapchat.android/files/file_manager/story_thumb/	Image O ※Check Signature Values		

OS	Application	Target services	Path	Features for restoration (Please refer to notes for the meaning of ✓, weak ✓, X)		Cache type
			data/data/com.snapchat.android/files/streaming/	FileName == '{videoID}.{seq}.{timestamp}.v3.exo' → Video classification by 'videoID' value, reassembling 'seq' in order	✓	T1
	App_Telegram (v6.0.1)	Telegram	data/data/org.telegram.messenger/files/cache4.db	X (message content)	✓	T4
			data/media/0/Android/data/org.telegram.messenger/cache/	Video, Image O ※Check Signature Values		
			data/media/0/Telegram/Telegram Audio/	Voice O ※Check Signature Values		
			data/media/0/Telegram/Telegram Documents/	Video, Image O ※Check Signature Values		
			data/media/0/Telegram/Telegram Images/	Image O ※Check Signature Values		
			data/media/0/Telegram/Telegram Video/	Video O ※Check Signature Values		
	App_Line (v10.5.2)	LINE	data/data/jp.naver.line.android/databases/naver_line/	X (message content)	✓	T4
			data/data/jp.naver.line.android/cache/	Image O ※Check Signature Values		
			data/media/0/Pictures/LINE_MOVIE	Video O ※Check Signature Values		
			Line data/media/0/Pictures/LINE/.temp	Video O ※Check Signature Values		
iOS	Chrome (v81.0.4044.62)	Youtube	private/var/mobile/Containers/Data/Application/*{Chrome Application Identifier}*/tmp/WebKit/MediaCache	'M_data1'+'M_data2'	✓	T5
		TikTok				
		Snapchat		'M_data1' exists (Extract frame)	X	X
		Snapchat	private/var/mobile/Containers/Data/Application/*{Chrome Application Identifier}*/Library/Caches/WebKit/NetworkCache/Version 14/{Blobs | Records}/{16HexBytes}/	sc-cdn.net/1d/{videoID}..(skip)..-{media | embedded}.mp4 → Extract the file with the URL	✓	T4
	Safari (v13)	Youtube	private/var/mobile/Containers/Data/Application/*{Safari Application Identifier}*/tmp/WebKit/MediaCache	'M_data1'+'M_data2'	✓	T5
		TikTok				
		Snapchat		'M_data1' exists (Extract frame)	X	X
		Snapchat	private/var/mobile/Containers/Data/Application/*{Safari Application Identifier}*/Library/Caches/WebKit/NetworkCache/Version 14/{Blob | Records}/{16HexBytes}/	sc-cdn.net/1d/{videoID}..(skip)..-{media | embedded}.mp4 → Extract the file with the URL	✓	T4
	App_Youtube (v15.16)	Youtube	private/var/mobile/Containers/Data/Application/*{Youtube Application Identifier}*/Library/Preferences/com.google.ios.youtube.plist	Reassemble URL to {videoID}	✓	T4
			private/var/mobile/Containers/Data/Application/*{Youtube Application Identifier}*/Library/ApplicationSupport/Media/Offline/YTOffline_{number}/{youtubevideoUUID}/	FileName == '86_{hex}' and '8c_{hex}' → Combining video data from '8		

OS	Application	Target services	Path	Features for restoration (Please refer to notes for the meaning of ✓, weak ✓, X)		Cache type
				6_{hex}' with audio data from '8c_{hex}'		
			private/var/mobile/Containers/Data/Application/{Youtube Application Identifier}/Library/ApplicationSupport/OfflineImages/	Image O ※Check Signature Values		
	App_ Dailymotion (v6.4.3)	Dailymotion	private/var/mobile/Containers/Data/Application/{Dailymotion Application Identifier}/Library/Caches/com.onevcat.Kingfisher.ImageCache.default/{hex_value}/	Image O ※Check Signature Values	waek ✓	X
			private/var/mobile/Containers/Data/Application/{Dailymotion Application Identifier}/Library/Caches/com.dailymotion.dailymotion/fsCachedData/{hex_value}/	Reassemble URL to 'xid'		
	App_TikTok (v15.5.6)	TikTok	private/var/mobile/Containers/Data/Application/{TikTok Application Identifier}/Library/Caches/com.ibireme.yykit/images/data	Image O ※Check Signature Values	✓	T4
			private/var/mobile/Containers/Data/Application/{TikTok Application Identifier}/Library/Caches/TTPlayerCache	Video O ※Check Signature Values		
	App_ Instagram (v136.0)	Instagram	private/var/mobile/Containers/Data/Application/{InstagramApplication Identifier}/Library/Caches/com.burbn.instagram.IGImageCache	Image O ※Check Signature Values	✓	T4
			private/var/mobile/Containers/Data/Application/{Instagram Application Identifier}/Library/Caches/com.com.burbn.instagram.IGSparseVideoCache	Video O ※Check Signature Values		
			private/var/mobile/Containers/Data/Application/{Instagram Application Identifier}/Library/Caches/com.burbn.instagram.storiesmedia-31807881726	Image O ※Check Signature Values		
	App_Snapchat (v10.80.5.79)	Snapchat	private/var/mobile/Containers/Data/Application/{Snapchat Application Identifier}/Library/Cache/SCMedia/{UnixTimeStapm-snapID}	Video O ※Check Signature Values	✓	T4
			private/var/mobile/Containers/Data/Application/{Snapchat Application Identifier}/Library/Cache/SCMediaCache	Image O ※Check Signature Values		
			private/var/mobile/Containers/Data/Application/{Snapchat Application Identifier}/Library/Cache/com.snap.file_manager_1_SCContent_{UUID}	Video, Image O ※Check Signature Values		
	App_Telegram (v6.0.1)	Telegram	private/var/mobile/Containers/Shared/AppGroup/{Telegram Application Identifier}/telegram-data/account-{Account UUID}/postbox/db/db_sqlite	X (message content)	X	X
			private/var/mobile/Containers/Shared/AppGroup/{Telegram Application Identifier}/telegram-data/account-{AccountUUID}/postbox/media/{telegram-file}	FileName == 'telegram-cloud-document-{N}-{N}' → Video, Image O ※Check Signature Values	✓	T4
				FileName == 'telegram-cloud-document-size-{N}-{N}-m' → Video, Image O ※Check Signature Values		
				FileName == 'telegram-cloud-photo-size-{N}-{N}-{m,x,y}' → Image O ※Check Signature Values		
				FileName == 'telegram-peer-photo-size-{N}-{N}-{N}-{N}' → Image O ※Check Signature Values		
				FileName == 'local-file-{N}'		

OS	Application	Target services	Path	Features for restoration (Please refer to notes for the meaning of ✓, weak ✓, X)		Cache type
				→ Image O ※Check Signature Values		
				FileName == 'secret-file-{N}-{N}' → Video, Image O ※Check Signature Values		
				FileName == 'ph-{HN}-{HN}-{HN}-{HN}-{HN}_L0_001-{N}' → Video, Image O ※Check Signature Values		
			private/var/mobile/Containers/Shared/AppGroup/*{Telegram Application Identifier}*/telegram-data/account-5253367053102449367/postbox/media/cache/{telegram-file}	FileName == 'telegram-cloud-document-{N}-{N}_first-fram' → Image O ※Check Signature Values		
				FileName == 'telegram-cloud-document-{N}-{N}_scaled-image-{PS}-1' → Image O ※Check Signature Values		
				FileName == 'secret-file-{N}-{N}_first-fram' → Image O ※Check Signature Values		
				FileName == 'vi-{HN}-{HN}-{HN}-{HN}-{HN}_L0_001_first-fram' → Image O ※Check Signature Values		
			private/var/mobile/Containers/Shared/AppGroup/*{Telegram Application Identifier}*/telegram-data/accounts-metadata/spotlight	Image O ※Check Signature Values		
	App_Line (v 10.3.0)	LINE	private/var/mobile/Containers/Data/Application/*{Line Application Identifier}*/tmp	Video, Image O ※Check Signature Values	✓	T4
			private/var/mobile/Containers/Data/Application/*{Line Application Identifier}*/Library/Caches/CacheableVideo	Video O ※Check Signature Values		
			private/var/mobile/Containers/Data/Application/*{Line Application Identifier}*/Library/Caches/jp.naver.line/fsCachedData	Image O ※Check Signature Values		
			private/var/mobile/Containers/Data/Application/*{Line Application Idnetifier}*/Library/Application Support/PrivateStore/P_{hex}/Message Attachments/u_{hex}	Image O ※Check Signature Values		

〈 Notes 〉
- ✓ indicates that fragmented cache file can be reassembled to a single video file.
- weak ✓ indicates that fragmented cache file cannot be reassembled, but the video can be identified.
- X : indicates that fragmented cache file cannnot be reassembled and the video cannot be identified.
- Telegram – FileName Format : The meanings of N, HN and PS in the table are as follows. ('N' : Number, 'HN' : HexNumber, 'PS' : Photo_size)