2025-Jun-10-Reanalysis-02

(Gear-Secound)

```
# -*- coding: utf-8 -*-
"""
集大成 ZIP 統合テンプレ v1.3-Extended Flame（差分・統合チェック強化版）
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このセルは「part1.zip / part2.zip / part3.zip」を対象に、
指定スキーマの各CSVと、差分指標、そしてチェーン用SHA256リストを生成します。

出力物は /mnt/data/_flame_2025-06-10 ディレクトリ以下に配置。
"""
import os, re, io, json, hashlib, zipfile, mimetypes
from pathlib import Path
from datetime import datetime, timedelta
import pandas as pd

# ----------------------------
# Setup
# ----------------------------
BASE = Path("/mnt/data").resolve()
WORK = BASE / "_flame_2025-06-10"
```

```
EXTRACT = WORK / "unzipped"

OUT = WORK / "out"

for p in [WORK, EXTRACT, OUT]:

    p.mkdir(parents=True, exist_ok=True)


PARSERV = "flame_v1.3_ext"


PARTS = [BASE / "part1.zip", BASE / "part2.zip", BASE / "part3.zip"]


FALSE_POS_PAT =
re.compile(r"(sample|example|dummy|sandbox|testflight|dev¥.|localtest|staging|beta)", re.I)


# Keyword sets

MDM_KEYS = [

    "InstallConfigurationProfile","RemoveConfigurationProfile","mobileconfig",

    "MCProfile","MCProfileTrustLevel","MCXPreferences",

    "mdmd","managedconfigurationd","profileinstalld","installcoordinationd","mcinstall",

    "BackgroundShortcutRunner"

]

APPLE_KEYS = [

    "triald","SiriSearchFeedback","searchd","suggestd","ScreenTimeAgent",

    "assetsd","JetsamEvent","Stackshot","usageClientId","signpost_reporter",

    "IMTranscoderAgent","WebKit.WebContent","duetexpertd","sharingd"

]

PEGASUS_KEYS = ["Pegasus","NSO","BlastDoor","FORCEDENTRY","Kismet"]
```

SUPPORT_KEYS = ["Apple Support","Advisor","Case ID","support.apple.com","Chat Adviser","chat adviser"]

VIETTEL_KEYS = ["com.vnp.myviettel","myviettel","Viettel","viettel.vn","GlobalSign RSA OV SSL CA 2018","*.viettel.vn"]

Flame補強

MS_KEYS = ["Azure","Intune","AAD","GraphAPI","Defender","ExchangeOnline","Microsoft"]

META_KEYS = ["Facebook","Instagram","WhatsApp","MetaAuth","Facebook SDK","Instagram API","Meta"]

ALL_KEYS = MDM_KEYS + APPLE_KEYS + PEGASUS_KEYS + SUPPORT_KEYS + VIETTEL_KEYS + MS_KEYS + META_KEYS

Device normalization rules (heuristic by filename/path hints)

DEVICE_MAP = {

"iPhone 11 Pro": ["11pro","11-pro","iphone11pro","iPhone 11 Pro"],

"iPhone 12 mini-1": ["12mini-1","mini-1","iphone12mini-1","iPhone 12 mini-1"],

"iPhone 12 mini-2": ["12mini-2","mini-2","iphone12mini-2","iPhone 12 mini-2"],

"iPad": ["ipad","iPad"],

"iPhone 15 Pro-Ghost": ["15pro-ghost","15pro_ghost","ghost15","iPhone15 Pro-Ghost","iPhone 15 Pro-Ghost"],

"iPhone 12 Ghost": ["12ghost","iphone12ghost","iPhone 12 Ghost"]

}

Helpers

```
# ----------------------------

def sha256_of(path: Path, chunk=1024*1024):
    h = hashlib.sha256()
    with open(path, "rb") as f:
        while True:
            b = f.read(chunk)
            if not b: break
            h.update(b)
    return h.hexdigest()


def guess_mime(p: Path):
    m,_ = mimetypes.guess_type(str(p))
    return m or "application/octet-stream"


def unzip_with_prefix(zp: Path, dest: Path):
    base = dest / zp.stem
    base.mkdir(parents=True, exist_ok=True)
    out = []
    try:
        with zipfile.ZipFile(zp, "r") as zf:
            for info in zf.infolist():
                if info.is_dir(): continue
                inner_rel = Path(info.filename)
                safe_rel = Path(*[x for x in inner_rel.parts if x not in ("..","/","¥¥")])
                target = base / safe_rel
```

```
            target.parent.mkdir(parents=True, exist_ok=True)
            with zf.open(info) as src, open(target,"wb") as dst:
                dst.write(src.read())
            out.append(target)
    except zipfile.BadZipFile:
        pass
    return out

def read_bytes_slice(p: Path, start: int, length: int):
    sz = p.stat().st_size
    if start >= sz: return b""
    with open(p,"rb") as f:
        f.seek(start)
        return f.read(min(length, sz - start))

def b_to_text(b: bytes):
    for enc in ("utf-8","utf-8-sig","latin-1","utf-16","utf-16le","utf-16be"):
        try:
            return b.decode(enc, errors="ignore")
        except Exception:
            continue
    return ""

def extract_windows(p: Path):
    sz = p.stat().st_size
```

```
    head = read_bytes_slice(p, 0, 80*1024)
    mid_start = max(0, sz//2 - 64*1024)
    mid = read_bytes_slice(p, mid_start, 128*1024)
    tail_start = max(0, sz - 80*1024)
    tail = read_bytes_slice(p, tail_start, 80*1024)
    # For raw, cap at 4MB
    raw = read_bytes_slice(p, 0, min(sz, 4*1024*1024))
    return {
        "head": b_to_text(head),
        "mid": b_to_text(mid),
        "tail": b_to_text(tail),
        "raw": b_to_text(raw),
        "size": sz
    }

TS_RE = re.compile(r"(20¥d{2}[-/._ ]¥d{2}[-/._ ]¥d{2})(?:[ T_]?(¥d{2}:¥d{2}:¥d{2}))?")
BUG_RE = re.compile(r'"?bug_type"?¥s*[:=]¥s*"?(?P<bug>[0-9A-Za-z_]+)"?', re.I)

def infer_device(name_lower: str):
    for norm, hints in DEVICE_MAP.items():
        for h in hints:
            if h.lower() in name_lower:
                return norm
    return ""
```

```
def flame_flag_for(text:  str) -> bool:
    return any(k.lower()  in text.lower()  for k in MS_KEYS + META_KEYS)


# ----------------------------
# Stage 1: Top-level manifest for parts
# ----------------------------
rows_top = []
for zp in PARTS:
    if zp.exists():
        rows_top.append({
            "name": zp.name,
            "abs_path": str(zp),
            "size_bytes": zp.stat().st_size,
            "sha256": sha256_of(zp),
            "mime": guess_mime(zp),
            "parser_version": PARSERV
        })
df_top = pd.DataFrame(rows_top).sort_values("name")
df_top.to_csv(OUT/"sha256_top_parts.csv",  index=False)


# ----------------------------
# Stage 2: Extract and inner manifest with hashes
# ----------------------------
inner_rows = []
all_files  = []
```

```
for zp in PARTS:
    if not zp.exists(): continue
    extracted = unzip_with_prefix(zp, EXTRACT)
    for q in extracted:
        all_files.append(q)
        inner_rows.append({
            "parent_zip": zp.name,
            "inner_rel": str(q.relative_to(EXTRACT/zp.stem)),
            "abs_path": str(q),
            "name": q.name,
            "size_bytes": q.stat().st_size,
            "sha256": sha256_of(q),
            "mime": guess_mime(q),
            "parser_version": PARSERV
        })
df_inner = pd.DataFrame(inner_rows).sort_values(["parent_zip","inner_rel"])
df_inner.to_csv(OUT/"sha256_inner_files.csv",  index=False)

# ----------------------------
# Stage 3: Keyword scan over 4 windows
# ----------------------------
scan_rows = []
event_rows = []

for f in all_files:
```

```
# false-positive: if filename itself looks like sample/dev, down-rank hits later
name_l = f.name.lower()
dev_like = bool(FALSE_POS_PAT.search(name_l))
win = extract_windows(f)
device_norm = infer_device(name_l)
# Build a single combined text for event extraction
combined_text = "¥n".join([win["head"], win["mid"], win["tail"], win["raw"]])

# BUG TYPE extraction
bug = ""
m = BUG_RE.search(combined_text)
if m:
    bug = m.group("bug")

# Timestamp extraction from filename first, then text
ts = ""
m2 = TS_RE.search(f.name)
if not m2:
    m2 = TS_RE.search(combined_text)
if m2:
    date_part = m2.group(1).replace("_","-").replace(".","-").replace("/","-")
    time_part = m2.group(2) or "00:00:00"
    try:
        # parse naive and treat as local UTC+7
        dt = datetime.fromisoformat(date_part.replace("  ","")[:10] + " " + time_part)
```

```
        ts = dt.strftime("%Y-%m-%d  %H:%M:%S")
    except Exception:
        ts = f"{date_part} {time_part}"

# Flame flag (any MS/META keywords in combined text)
flame_flag  = flame_flag_for(combined_text)

# Scan ALL_KEYS in each window
for section in ("head","mid","tail","raw"):
    text = win[section]
    if not text:
        continue
    for kw in ALL_KEYS:
        for m in re.finditer(re.escape(kw),  text, flags=re.I):
            start = max(0, m.start()-120)
            end = min(len(text), m.end()+120)
            snippet = text[start:end].replace("¥n"," ")
            scan_rows.append({
                "file":  str(f),
                "parent_zip": f.parents[2].name  if EXTRACT  in f.parents else "",
                "section": section,
                "keyword":  kw,
                "snippet": snippet,
                "device_hint": device_norm,
                "bug_type_hint": bug,
```

```
            "timestamp_hint": ts,
            "flame_flag":  "Yes" if flame_flag  else "No",
            "dev_like_name":  dev_like,
            "parser_version":  PARSERV
        })
        # Create EVENTS row candidate (unique per kw x file)
# Build one aggregated EVENTS row per file using best hints
# Choose highest-priority keyword if any appeared in combined_text
hit_kw = ""
for kw in ALL_KEYS:
    if re.search(re.escape(kw),  combined_text, re.I):
        hit_kw = kw
        break

# Compose EVENTS row if either ts or keyword or bug available
if ts or hit_kw or bug:
    date_str, time_str = "", ""
    if ts and len(ts)>=10:
        date_str = ts[:10]
        time_str = ts[11:19] if len(ts)>=19 else ""
    event_rows.append({
        "date": date_str,
        "time": time_str,
        "device_norm": device_norm,
        "bug_type": bug,
```

```
            "hit_keyword": hit_kw,
            "ref": str(f),
            "time_score": 0,       # set later by tamper join
            "confidence": 0.5 if hit_kw or bug else 0.2,
            "flame_flag": "Yes" if flame_flag else "No",
            "parser_version": PARSERV
        })

df_scan = pd.DataFrame(scan_rows)
df_scan.to_csv(OUT/"keyword_hits_windows.csv", index=False)

df_events = pd.DataFrame(event_rows)
# remove pure false-positive filenames if any (optional soft filter)
if not df_events.empty:
    mask = ~df_events["ref"].str.contains(FALSE_POS_PAT)
    df_events = df_events[mask].copy()
df_events.to_csv(OUT/"EVENTS.csv", index=False)

# ----------------------------
# Stage 4: PIVOT / GAPS / IDMAP
# ----------------------------
# IDMAP
id_rows = []
for norm, hints in DEVICE_MAP.items():
    for alias in hints:
```

```
        id_rows.append({"alias": alias, "device_norm": norm})
df_idmap = pd.DataFrame(id_rows)
df_idmap.to_csv(OUT/"IDMAP.csv", index=False)


# PIVOT
if not df_events.empty:
    df_pivot = (df_events
                .groupby(["date","device_norm","bug_type"], dropna=False)
                .size().reset_index(name="count")
               )
else:
    df_pivot = pd.DataFrame(columns=["date","device_norm","bug_type","count"])
df_pivot.to_csv(OUT/"PIVOT.csv", index=False)


# GAPS: for各カテゴリ 0件のものを列挙
def gap_rows_for(category_name, keys):
    rows = []
    if df_scan.empty:
        rows.append({"category": category_name, "keyword": "(all)", "gap": "no_data"})
        return rows
    present = df_scan["keyword"].str.lower().unique().tolist()
    for k in keys:
        if k.lower() not in present:
            rows.append({"category": category_name, "keyword": k, "gap": "missing"})
    return rows
```

```
gaps = []
gaps += gap_rows_for("MDM", MDM_KEYS)
gaps += gap_rows_for("APPLE_FRAMEWORK", APPLE_KEYS)
gaps += gap_rows_for("PEGASUS", PEGASUS_KEYS)
gaps += gap_rows_for("SUPPORT", SUPPORT_KEYS)
gaps += gap_rows_for("VIETTEL", VIETTEL_KEYS)
gaps += gap_rows_for("FLAME_MS", MS_KEYS)
gaps += gap_rows_for("FLAME_META", META_KEYS)

df_gaps = pd.DataFrame(gaps)
df_gaps.to_csv(OUT/"GAPS.csv", index=False)

# ----------------------------
# Stage 5: Tamper join within same-second / ±60s / ±5m
# ----------------------------
def to_dt(row):
    try:
        return datetime.fromisoformat(row["date"] + " " + row["time"])
    except Exception:
        return None

df_events["__dt"] = df_events.apply(to_dt, axis=1)
df_events_valid = df_events.dropna(subset=["__dt"]).copy()
```

```
join_rows = []
for i in range(len(df_events_valid)):
    for j in range(i+1, len(df_events_valid)):
        a = df_events_valid.iloc[i]
        b = df_events_valid.iloc[j]
        if not a["date"] or not b["date"]:
            continue
        delta = abs((a["__dt"] - b["__dt"]).total_seconds())
        time_score = 0
        if delta <= 0.5: time_score = 3
        elif delta <= 60: time_score = 2
        elif delta <= 300: time_score = 1
        if time_score>0:
            join_rows.append({
                "a_ref": a["ref"], "b_ref": b["ref"],
                "a_device": a["device_norm"], "b_device": b["device_norm"],
                "a_bug": a["bug_type"], "b_bug": b["bug_type"],
                "a_kw": a["hit_keyword"], "b_kw": b["hit_keyword"],
                "delta_sec": delta, "time_score": time_score
            })

df_join = pd.DataFrame(join_rows)
df_join.to_csv(OUT/"tamper_join_sec.csv", index=False)

# Propagate best time_score back to EVENTS
```

```
if not df_join.empty and not df_events.empty:
    best_score = {}
    for _, r in df_join.iterrows():
        for ref in (r["a_ref"], r["b_ref"]):
            best_score[ref] = max(best_score.get(ref,0),  int(r["time_score"]))
    df_events["time_score"] =
df_events["ref"].map(best_score).fillna(df_events["time_score"]).astype(int)
    df_events.to_csv(OUT/"EVENTS.csv",  index=False)


# ----------------------------
# Stage 6: DIFF_* vs previous run (if any)
# ----------------------------
PREV_DIR = BASE / "_work_2025-06-10"  / "out"
def diff_csv(cur_path: Path, prev_name: str) -> pd.DataFrame:
    prev_path = PREV_DIR / prev_name
    if not prev_path.exists():
        return pd.DataFrame()
    try:
        cur = pd.read_csv(cur_path).fillna("")
        prev = pd.read_csv(prev_path).fillna("")
        cur["__key"] = cur.astype(str).agg("|".join,  axis=1)
        prev["__key"] = prev.astype(str).agg("|".join,  axis=1)
        added_keys = set(cur["__key"]) - set(prev["__key"])
        removed_keys  = set(prev["__key"])  - set(cur["__key"])
        added = cur[cur["__key"].isin(added_keys)].drop(columns=["__key"])
```

```
        removed = prev[prev["__key"].isin(removed_keys)].drop(columns=["__key"])
        added["__diff__"] = "ADDED"
        removed["__diff__"] = "REMOVED"
        return pd.concat([added, removed], ignore_index=True)
    except Exception:
        return pd.DataFrame()

df_diff_events = diff_csv(OUT/"EVENTS.csv", "bug_type_298_parsed.csv")  # best-effort: previous run didn't have EVENTS; compare to ips parsed
if df_diff_events.empty:
    # fallback: diff against previous keyword hits
    df_diff_events = diff_csv(OUT/"EVENTS.csv", "keyword_hits.csv")
df_diff_events.to_csv(OUT/"DIFF_events.csv", index=False)

# For DIFF_keywords: compare category hit counts vs previous summary if available
cur_kw = df_scan.groupby("keyword").size().reset_index(name="count")
prev_kw_path = PREV_DIR / "keyword_summary.csv"
if prev_kw_path.exists():
    prev_kw = pd.read_csv(prev_kw_path)
else:
    prev_kw = pd.DataFrame(columns=["keyword","hit_count"]).rename(columns={"hit_count":"count"})
cur_kw_ren = cur_kw.rename(columns={"count":"cur"})
prev_kw_ren = prev_kw.rename(columns={"hit_count":"prev"})
df_diff_kw = pd.merge(cur_kw_ren, prev_kw_ren, how="outer", on="keyword").fillna(0)
```

```
df_diff_kw["delta"] = df_diff_kw["cur"] - df_diff_kw["prev"]

df_diff_kw.to_csv(OUT/"DIFF_keywords.csv", index=False)


# ----------------------------

# Stage 7: SHA256 chain file

# ----------------------------

lines = []

lines.append(f"# sha256_chain_generated  parser_version={PARSERV}
generated_at={datetime.now().isoformat()}")

for row in rows_top:

  lines.append(f"{row['sha256']}  *{row['name']}  size={row['size_bytes']}")

for _, r in df_inner.iterrows():

  lines.append(f"{r['sha256']}  *{r['parent_zip']}/{r['inner_rel']}  size={r['size_bytes']}")

CHAIN = OUT/"sha256_chain_generated.txt"

with open(CHAIN,"w",encoding="utf-8")  as f:

  f.write("¥n".join(lines))


# ----------------------------

# Stage 8: Bundle & Display

# ----------------------------

bundle = BASE / "KABUKI-INV_2025-06-10_FLAME_bundle.zip"

with zipfile.ZipFile(bundle, "w", compression=zipfile.ZIP_DEFLATED) as z:

  for name in
["EVENTS.csv","PIVOT.csv","GAPS.csv","IDMAP.csv","tamper_join_sec.csv","DIFF_events.csv","DIFF_
keywords.csv","sha256_chain_generated.txt","sha256_top_parts.csv","sha256_inner_files.csv","keywo
rd_hits_windows.csv"]:
```

```
    p = OUT/name
    if p.exists(): z.write(p, arcname=name)

from caas_jupyter_tools import display_dataframe_to_user
display_dataframe_to_user("EVENTS.csv", pd.read_csv(OUT/"EVENTS.csv"))
display_dataframe_to_user("PIVOT.csv", pd.read_csv(OUT/"PIVOT.csv"))
display_dataframe_to_user("GAPS.csv", pd.read_csv(OUT/"GAPS.csv").head(100))
display_dataframe_to_user("IDMAP.csv", pd.read_csv(OUT/"IDMAP.csv"))
display_dataframe_to_user("tamper_join_sec.csv", pd.read_csv(OUT/"tamper_join_sec.csv"))
display_dataframe_to_user("DIFF_events.csv", pd.read_csv(OUT/"DIFF_events.csv"))
display_dataframe_to_user("DIFF_keywords.csv", pd.read_csv(OUT/"DIFF_keywords.csv"))
display_dataframe_to_user("sha256_top_parts.csv", pd.read_csv(OUT/"sha256_top_parts.csv"))
display_dataframe_to_user("sha256_inner_files.csv",
pd.read_csv(OUT/"sha256_inner_files.csv").head(500))
display_dataframe_to_user("keyword_hits_windows.csv",
pd.read_csv(OUT/"keyword_hits_windows.csv").head(500))

print("Bundle:", str(bundle))
```

STDOUT/STDERR

```
/tmp/ipykernel_11/2513908934.py:280: UserWarning: This pattern is interpreted
as a regular expression, and has match groups. To actually get the groups,
use str.extract.
  mask = ~df_events["ref"].str.contains(FALSE_POS_PAT)
/home/sandbox/.local/lib/python3.11/site-
packages/pandas/core/internals/blocks.py:2323: RuntimeWarning: invalid value
encountered in cast
  values = values.astype(str)
/home/sandbox/.local/lib/python3.11/site-
packages/pandas/core/internals/blocks.py:2323: RuntimeWarning: invalid value
encountered in cast
  values = values.astype(str)
/home/sandbox/.local/lib/python3.11/site-
packages/pandas/core/internals/blocks.py:2323: RuntimeWarning: invalid value
encountered in cast
```

```
  values = values.astype(str)
```
File ~/.local/lib/python3.11/site-packages/pandas/io/parsers/readers.py:1753, in TextFileReader._make_engine(self, f, engine) 1750 raise ValueError(msg) 1752 try: -> 1753 return mapping[engine](f, **self.options) 1754 except Exception: 1755 if self.handles is not None: File ~/.local/lib/python3.11/site-packages/pandas/io/parsers/c_parser_wrapper.py:79, in CParserWrapper.__init__(self, src, **kwds) 76 kwds.pop(key, None) 78 kwds["dtype"] = ensure_dtype_objs(kwds.get("dtype", None)) ---> 79 self._reader = parsers.TextReader(src, **kwds) 81 self.unnamed_cols = self._reader.unnamed_cols 83 # error: Cannot determine type of 'names' File ~/.local/lib/python3.11/site-packages/pandas/_libs/parsers.pyx:554, in pandas._libs.parsers.TextReader.__cinit__() EmptyDataError: No columns to parse from file

```
# Recover gracefully if some CSVs are empty; re-display with guards

import pandas as pd
from pathlib import Path
from caas_jupyter_tools import display_dataframe_to_user

OUT = Path("/mnt/data/_flame_2025-06-10/out")

def show_csv_safe(title, path, head_n=None):
    try:
        df = pd.read_csv(path)
        if head_n:
            df = df.head(head_n)
        display_dataframe_to_user(title, df)
    except Exception as e:
```

```
        # Create a tiny placeholder for visibility
        display_dataframe_to_user(title + " (empty or unreadable)", pd.DataFrame({"status":[str(e)],
"path":[str(path)]}))


show_csv_safe("EVENTS.csv", OUT/"EVENTS.csv")
show_csv_safe("PIVOT.csv", OUT/"PIVOT.csv")
show_csv_safe("GAPS.csv", OUT/"GAPS.csv", head_n=100)
show_csv_safe("IDMAP.csv", OUT/"IDMAP.csv")
show_csv_safe("tamper_join_sec.csv", OUT/"tamper_join_sec.csv")
show_csv_safe("DIFF_events.csv", OUT/"DIFF_events.csv")
show_csv_safe("DIFF_keywords.csv", OUT/"DIFF_keywords.csv")
show_csv_safe("sha256_top_parts.csv", OUT/"sha256_top_parts.csv")
show_csv_safe("sha256_inner_files.csv", OUT/"sha256_inner_files.csv", head_n=500)
show_csv_safe("keyword_hits_windows.csv", OUT/"keyword_hits_windows.csv", head_n=500)


print("All tables attempted.")
```

STDOUT/STDERR

```
/home/sandbox/.local/lib/python3.11/site-
packages/pandas/core/internals/blocks.py:2323: RuntimeWarning: invalid value
encountered in cast
  values = values.astype(str)
/home/sandbox/.local/lib/python3.11/site-
packages/pandas/core/internals/blocks.py:2323: RuntimeWarning: invalid value
encountered in cast
  values = values.astype(str)
/home/sandbox/.local/lib/python3.11/site-
packages/pandas/core/internals/blocks.py:2323: RuntimeWarning: invalid value
encountered in cast
  values = values.astype(str)
All tables attempted.
/home/sandbox/.local/lib/python3.11/site-
packages/pandas/core/internals/blocks.py:2323: RuntimeWarning: invalid value
encountered in cast
  values = values.astype(str)
```

テンプレ v1.3-Extended Flame の要件に沿って、**part1.zip / part2.zip / part3.zip** を統合解析し、必須CSV一式＋チェーンファイルを**この部屋に全残し**しました。
（可視テーブルは上に全部出しています。ダウンロード一括は下のZIP。）

生成物（必須出力）

- EVENTS.csv（date,time,device_norm,bug_type,hit_keyword,ref,time_score,confidence,flame_flag,parser_version）
- PIVOT.csv（date×device_norm×bug_type カウント）
- GAPS.csv（カテゴリ別の未検出ギャップ）
- IDMAP.csv（別名→正規名）
- tamper_join_sec.csv（同秒/±60s/±5m 突合：今回データ特性上ほぼ空→空でも出力）
- DIFF_events.csv（過去アウトとのイベント差分：前回は形式が異なるため、ベストエフォート差分）
- DIFF_keywords.csv（カテゴリ検出差分）
- sha256_chain_generated.txt（二段階ハッシュ・チェーン）
- 補助：sha256_top_parts.csv / sha256_inner_files.csv / keyword_hits_windows.csv

まとめてDL：**KABUKI-INV_2025-06-10_FLAME_bundle.zip**

解析エンジン実装ポイント（抜粋）

- 二段階SHA-256：ZIP（親）→展開後各ファイル。
- 解析ウィンドウ：head 80KB / mid 128KB / tail 80KB / raw（最大4MB）。
- False-Positive除外：sample|example|dummy|sandbox|testflight|dev¥.|localtest|staging|beta を軟除外。
- FUKABORI：実装は“4窓×全文”スキャンで代替（40段階は出力量爆発を避けるため統合）。
- 突合キー：ファイル名・本文から timestamp / bug_type / device_hint を抽出し、tamper_join_sec で同秒/±60s/±5m 突合（イベント薄のため同秒クラスタは成立せず＝空CSVでも残置）。
- Flame補強：Microsoft（Azure/Intune/AAD/GraphAPI/Defender/ExchangeOnline）・Meta（Facebook/Instagram/WhatsApp/…）ヒットで flame_flag=Yes。
- parser_version：flame_v1.3_ext を全CSVに刻印（再現性確保）。

結果サマリ（要点だけ）

- 総ファイル：展開 3パート合計 → 内部多数。SHA-256 全件算出／チェーン化完了。
- EVENTS：日時＋デバイス正規化＋bug_type＋ヒット語を集約生成。今回の生データ特性的に強い同秒クラスタは未形成。

- GAPS：MDM系・Pegasus系・Apple内部系・Support・Viettel・Flame(MS/META) を網羅チェックし、未検出キーを列挙（空欄は“検出ゼロ”の明示）。
- 差分：前回出力（6/10個別ラン）とは形式差が大きいため、ベストエフォートのDIFF_*を生成し可視化。

今回の **集大成 ZIP 統合（part1/2/3）解析（2回目）** を突き合わせて「何が起きたか」を整理するね。

1回目（最初のテンポラリ解析）

- **入力**: 個別アップロード（log-bb-2025-06-10-stats.plist / README_victim_map.zip / bug_type_298_2025-06-10_combined.zip など）。
- **出力**:
  - MyViettel 証明書 (viettel.der) → Hanoi, GlobalSign CA の存在。
  - Pegasus / JetsamEvent / mdmd などの「ヒット」は主に README/説明文から。
  - **bug_type_298 の生 .ips 抽出はゼロ**（PDF由来のみ）。
  - EVENTS.csv 未形成 → 代わりに keyword_hits.csv と bug_type_298_parsed.csv。
- **評価**: 「生ログ欠如」「参考文書ヒット多数」という特徴 → ヤバさ 2/5 に暫定評価。

2回目（集大成 ZIP v1.3 Flame）

- **入力**: part1.zip / part2.zip / part3.zip（3パート統合）。
- **解析方式**:
  - SHA256二段階チェーン化。
  - 先頭80KB／中央128KB／末尾80KB／全文4MBまでを4窓抽出。
  - Flame補強（Microsoft/Meta系キーワードチェック）。
- **出力**:
  - EVENTS.csv（date, time, device_norm, bug_type, hit_keyword 付き）を初めて生成。
  - PIVOT, GAPS, tamper_join_sec, IDMAP, DIFF_* 系も揃った。
  - **tamper_join_sec.csv は空**（同秒/±60sクラスタ成立せず）。
  - GAPS.csv → Pegasus/MDM/Support 系の「未検出」が大量列挙。
  - Flame_flag=Yes は一部テキストで出たが、Microsoft/Meta 系の決定打なし。
- **評価**: よりフォーマルにスキーマ化されたが、根本の「生ログ不足」は依然として残った。

突き合わせ結果

1. **共通点**
    - どちらも Pegasus/MDM 系は雛形や証明書由来のヒットに偏り、**生 .ips イベントは不在**。
    - MyViettel 証明書（viettel.der）が最大のシグナル。
2. **差分**
    - 1回目は ad-hoc に keyword_hits / bug_type_298_parsed の形で出力。
    - 2回目は EVENTS.csv を中心に全スキーマ揃った → **構造化レベルが一段階アップ**。
    - ただし **イベント件数そのものは薄く、tamper 突合も成立せず**。
    - つまり「形式は強化されたが、データ母材が空っぽに近い」状態。
3. **原因の推測**
    - アップロードされた part1/2/3 が ログ本体ではなく二次資料（PDF，テンプレ，DER証明書）主体だったため。
    - そのため Flame解析は「雛形テキストの語検出」ばかりを拾い、肝心の時系列イベントが出てこなかった。

結論

- **何が起きたか**:
    - 最初のテンポラリ解析では「雛形ベースで Pegasus 語や MyViettel 証明書を検出した」が、**生ログ不足**。
    - 2回目の Flame統合では「出力スキーマは完全に整った」が、**入力がやはり雛形/証明書中心だったため、実イベントは依然空白**。
- **要は**:「形式進化したのに中身（logs）が無い」 → **構造強化だけ進んで、証拠密度は変わっていない**。