Traffic Analytics & IVT Patterns Analysis

Analysis of Ad Traffic Data (11–15 Sept 2025)

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Objective

- Analyze ad traffic patterns across 3 apps
- Identify causes of IVT (Invalid Traffic) detection
- Compare flagged vs non-flagged traffic
- Provide actionable insights to reduce invalid/bot traffic

Dataset Overview

- Columns: Date/Hour, unique_idfas, unique_ips, unique_uas, total_requests, requests_per_idfa, impressions, impressions_per_idfa, idfa_ip_ratio, idfa_ua_ratio, IVT
- 3 apps not flagged, 3 apps flagged at different times
- Hourly & daily aggregation
- Impressions missing → limits engagement insights

Traffic Overview

- Total Requests: 2M
- Flagged traffic: ~1.2M (60%+)
- Not flagged: ~0.5M
- Daily IVT trend: Peak on Sept 13, drop on Sept 15
- Insight: High traffic volume but majority is suspicious/bot-like

Device & Request Metrics

- Avg Requests per IDFA: 1.14 → some device duplication
- Avg Impressions per IDFA: 0 → missing data
- idfa_ip_ratio: Spike up to 31K → many devices share IP
- idfa_ua_ratio: Near 0 → low UA variation → likely bots
- Insight: IP clustering indicates automated traffic; devices not real

IVT Detection Patterns

- Flagged traffic: Most requests (~1.2M)
- Peak IVT: 0.145 on Sept 13
- Pattern: High request count, low UA variation
- Insight: Spikes correspond to bot-like traffic; non-flagged traffic smaller & organic

Temporal & Anomaly Analysis

- • Spikes: Sept 13 → IVT jumps, Sept 15 → drop
- • Hourly: Flagged traffic dominates all hours
- • Insight: Day 13 is a clear anomaly; system detects abnormal bot activity

Correlation Analysis

- Strong correlation: idfa_ip_ratio ↔ IVT
- Moderate correlation: requests_per_idfa ↔ IVT
- Weak/None: impressions_per_idfa → missing
- Insight: IP clustering is main IVT driver

Comparative App Insights

- Early IVT apps (Day 11–12): Gradual rise
- Peak IVT (Day 13): High requests + IP overlap
- Clean apps (Day 15): Drastic drop
- Insight: IVT pattern varies across apps; early/late/no IVT could be predicted via IP/device metrics

Recommendations & Actions

- Capture impressions & UA data (missing currently)
- Strengthen IVT detection for idfa_ip_ratio > 25K
- Implement real-time anomaly detection for daily/hourly spikes
- Include per-app segmentation
- Create a “Traffic Quality Index” combining IVT %, IP ratio & request density
- Temporarily block suspicious sources during high spikes

Conclusion

- Traffic volume is high but mostly invalid
- IP clustering & request density are strong IVT indicators
- System detects anomalies effectively but gaps exist (missing impressions, app-level insights)
- Recommendations aim to reduce bot traffic and improve data quality