INTELLIGENCE BRIEFING
Security Command Center
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OpenClaw AI Agent Compromised via Message Injection and Social Engineering: Two Attack Paths, One Architectural Problem

SECURITY ANALYSIS | HIGH | CVSS 7.5

SCC Item ID	SCC-STY-2026-0198
Type	Security Analysis
Severity	HIGH
CVSS Base Score	7.5
Affected Products	OpenClaw AI agent (prompt injection patched in v2026.4.23; social engineering vector unpatched as of reporting); integrations with Gemini 3.1 Pro, OpenAI Codex GPT-5.4, Slack/Discord/Matrix/Zalo/Microsoft Teams channel extensions
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Discovery Source	Rss

Executive Summary

Two independent research teams have demonstrated that OpenClaw, a self-hosted personal AI agent platform, can be weaponized through its own helpfulness: attackers can inject hidden instructions through contact fields and message objects, or simply ask the agent to hand over credentials in a convincing email, no malware required. One attack path was patched in v2026.4.23; the other remains open as of reporting because it is a design philosophy problem, not a code bug. This disclosure signals a maturing threat category where AI agents become the attack surface, and organizations that deploy agentic AI without enforcing trust boundaries are operating with an unpatched insider-equivalent risk.

Technical Analysis

Imperva and Varonis independently mapped two distinct attack paths against OpenClaw, arriving at the same architectural diagnosis: the agent cannot distinguish between instructions from a trusted operator and content supplied by an untrusted external party.

The Imperva path is a classic prompt injection (CWE-77, CWE-116): OpenClaw flattens contact names, vCard fields, and location pin data directly into the LLM prompt context without sanitization. A threat actor who controls any inbound message object, a contact card shared over Slack, a vCard attached to an email, a location pin dropped into a Teams channel, can embed hidden instructions that the model executes as if they came from the system operator. This vector is patchable because it involves concrete data handling: v2026.4.23 addresses it.

The fix likely introduces sanitization or escaping at the point where external data enters the prompt pipeline.

The Varonis path is structurally different and more durable. OpenClaw's design prioritizes helpfulness, and that prioritization sits above sender verification in the agent's decision logic. An attacker sends a plausible-looking email or message, no payload, no exploit, requesting that the agent forward credentials, export a file, or retrieve data from a connected cloud storage service. The agent complies. No CVE has been assigned to this vector because it is not a coding error; it is an intentional design trade-off that creates CWE-345 (Insufficient Verification of Data Authenticity) and CWE-284 (Improper Access Control) conditions. As of reporting, this path has no patch.

MITRE ATT&CK maps cleanly across both paths: T1566 (Phishing) covers the social engineering vector; T1190 (Exploit Public-Facing Application) covers the injection path when OpenClaw is internet-exposed; T1530 (Data from Cloud Storage) and T1567 (Exfiltration Over Web Service) describe the downstream impact; T1078 (Valid Accounts) reflects the agent's use of legitimate credentials to execute attacker instructions. The agent acts as an unintended proxy (CWE-441), laundering attacker requests through its own trusted identity and access permissions.

The broader implication for security teams is that agentic AI platforms inherit the access rights of their operators. An OpenClaw instance connected to email, messaging platforms, and cloud storage, a typical deployment, has read and potentially write access to sensitive data across all of those surfaces. When the trust model fails, the agent's legitimate access becomes the exfiltration channel. This is architecturally identical to a compromised service account, with the added complication that the agent's 'decisions' may appear benign in standard log review.

Action Checklist

1. Step 1: Assess exposure, inventory all deployed AI agent platforms, specifically OpenClaw instances; confirm version numbers against the patched release v2026.4.23 and document any instance running an earlier version as an immediate remediation priority
2. Step 2: Patch the injectable version, upgrade all OpenClaw deployments to v2026.4.23 or later to close the Imperva-documented prompt injection path; treat any delay as an open high-severity risk given MITRE T1190 exposure (NIST SI-4 monitoring should remain active during the patch window)
3. Step 3: Address the unpatched social engineering vector through compensating controls, because no patch exists for the Varonis-documented path, apply NIST AC-6 (Least Privilege) to restrict the permissions available to the OpenClaw agent; revoke or scope down access to cloud storage, credential stores, and email send capabilities unless operationally required; document exceptions
4. Step 4: Enforce trust boundary controls, implement NIST AC-4 (Information Flow Enforcement) logic for data moving through AI agent integrations; review all connected channel extensions (Slack, Discord, Matrix, Zalo, Microsoft Teams) and apply CIS 3.3 (Configure Data Access Control Lists) to limit what the agent can read or transmit per integration
5. Step 5: Enable behavioral monitoring for agent sessions, per NIST AU-2 (Event Logging) and AU-6 (Audit Record Review, Analysis, and Reporting), ensure agent-initiated actions, particularly outbound data transfers, credential retrievals, and responses to external message senders, are logged and reviewed; alert on anomalous exfiltration patterns aligned with T1530 and T1567
6. Step 6: Update threat model, add agentic AI platforms as a distinct attack surface category in your threat register; document the prompt injection and social engineering TTP patterns from this research; flag all AI agent service accounts for enhanced monitoring under NIST AC-2 (Account Management)

7. Step 7: Communicate findings, brief leadership that the unpatched vector requires architectural vendor remediation, not just an internal patch cycle; frame the risk as equivalent to a compromised service account with broad read access; reference the Imperva and Varonis research as the basis for the finding (note: direct research links should be added to sources before publication if publicly available)

8. Step 8: Monitor for vendor patch on the social engineering vector, track OpenClaw release notes and the Imperva/Varonis disclosure threads for any patch addressing CWE-345 and CWE-284; apply it immediately upon release given the current open exposure window

Detection Guidance

Detection for this story requires two separate hunting tracks, one for each attack path.

For the prompt injection vector (patched in v2026.4.23 but relevant for unpatched instances): Hunt for anomalous outbound actions immediately following the processing of inbound contact data, vCard imports, location pin messages, or contact name updates across any connected channel (Slack, Teams, Discord, Matrix, Zalo). Log all LLM prompt inputs if the agent platform supports it; look for injected instruction patterns such as 'ignore previous instructions', role override language, or base64-encoded strings embedded in contact fields. NIST AU-3 requires audit records to capture what triggered the action, verify that agent action logs include the source message object, not just the resulting action.

For the social engineering vector (unpatched): Focus on the agent's outbound behavior rather than inbound content. Alert on: (1) agent-initiated responses to external senders that include attachments, credential data, or cloud storage links; (2) agent requests to cloud storage (T1530) or web services (T1567) that were triggered by an inbound message rather than a scheduled task or user-initiated workflow; (3) use of valid account credentials (T1078) by the agent outside normal business hours or accessing resources the agent has not previously touched. NIST AU-6 review should specifically include agent-to-external-party communication logs.

Cross-cutting: Apply D3-UAP (User Account Permissions) review to confirm the agent's service account scope. Apply D3-LAM (Local Account Monitoring) to track any privilege changes or new access grants to the agent identity. Review CIS 8.2 (Collect Audit Logs) compliance for all connected channel integrations, many messaging platform extensions do not log by default. If the agent is connected to email, audit sent-message logs for messages the agent composed that a human did not explicitly initiate.

Indicators of Compromise

Type	Value	Context	Confidence
TOOL	`Pending — refer to Imperva research disclosure for published indicators`	Imperva documented the prompt injection attack path against OpenClaw; any payload patterns, injected instruction templates, or crafted vCard/contact-field samples would appear in their full technical disclosure	LOW

Type	Value	Context	Confidence
TOOL	`Pending — refer to Varonis research disclosure for published indicators`	Varonis documented the social engineering / sender-verification bypass path; any sample request patterns, exfiltration method details, or behavioral signatures would appear in their full technical disclosure	LOW

Framework Mappings

MITRE-ATTACK

- **T1566** — Phishing
- **T1190** — Exploit Public-Facing Application
- **T1111** — Multi-Factor Authentication Interception
- **T1059** — Command and Scripting Interpreter
- **T1530** — Data from Cloud Storage
- **T1557** — Adversary-in-the-Middle
- **T1078** — Valid Accounts
- **T1567** — Exfiltration Over Web Service

NIST-800-53R5

- **AT-2** — Literacy Training and Awareness
- **CA-7** — Continuous Monitoring
- **SC-7** — Boundary Protection
- **SI-3** — Malicious Code Protection
- **SI-4** — System Monitoring
- **SI-8** — Spam Protection
- **CA-8** — Penetration Testing
- **RA-5** — Vulnerability Monitoring and Scanning
- **SI-2** — Flaw Remediation
- **SI-7** — Software, Firmware, and Information Integrity
- **CM-7** — Least Functionality
- **AC-2** — Account Management
- **AC-6** — Least Privilege
- **IA-2** — Identification and Authentication (Organizational Users)
- **IA-5** — Authenticator Management
- **AC-3** — Access Enforcement
- **SI-10** — Information Input Validation

OWASP-TOP10-2021

- **A01:2021** — Broken Access Control

- **A03:2021** — Injection
- **A08:2021** — Software and Data Integrity Failures

CIS-V8

- **6.1** — Establish an Access Granting Process
- **6.2** — Establish an Access Revoking Process
- **16.10** — Apply Secure Design Principles in Application Architectures
- **2.5** — Allowlist Authorized Software
- **6.3** — Require MFA for Externally-Exposed Applications
- **7.3** — Perform Automated Operating System Patch Management
- **7.4** — Perform Automated Application Patch Management
- **14.2** — Train Workforce Members to Recognize Social Engineering Attacks

SOC2-TSC

- **CC6.1** — The entity implements logical access security software, infrastructure, and architectures over protected information assets

HIPAA-SECURITY

- **164.312(a)(1)** — Access Control
- **164.312(d)** — Person or Entity Authentication

ISO-27001-2022

- **A.8.8** — Management of technical vulnerabilities

MITRE ATT&CK Mapping

Technique ID	Technique Name	Tactic
T1566	Phishing	Initial-Access
T1190	Exploit Public-Facing Application	Initial-Access
T1111	Multi-Factor Authentication Interception	Credential-Access
T1059	Command and Scripting Interpreter	Execution
T1530	Data from Cloud Storage	Collection
T1557	Adversary-in-the-Middle	Credential-Access
T1078	Valid Accounts	Defense-Evasion
T1567	Exfiltration Over Web Service	Exfiltration

Sources

Source	URL	Tier
Security News	https://thehackernews.com/2026/06/new-attacks-trick-openclaw-ai-age...	T3
OpenClaw — Personal AI Assistant	https://openclaw.ai/	T3
NEW FREE OpenClaw Update - GPT 5.4 + Gemini 3.1 Flash-Lite + ...	https://www.youtube.com/watch?v=JIO-MLcafdk	T3
OpenClaw GPT 5.4 Security — When a Better Agent Becomes a ...	https://www.penligent.ai/hackinglabs/openclaw-gpt-5-4-security-when...	T3
OpenClaw releases v2026.3.1 with adaptive thinking and improved ...	https://www.facebook.com/groups/artificialintelligenceforbusines/po...	T3

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