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Threat Level

Red

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THREAT ADVISORY

VULNERABILITY REPORT

CVE-2025-20393: Critical Cisco AsyncOS Zero-Day Actively Exploited

Date of Publication	Admiralty Code	TA Number
December 19, 2025	A1	TA2025384

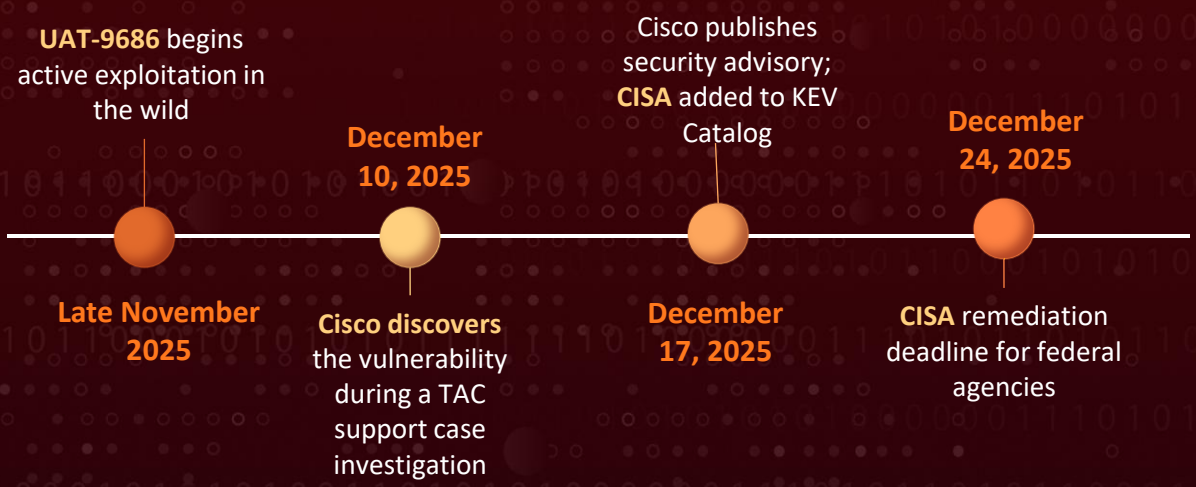
Summary

First Seen: Late November 2025
Affected Products: Cisco Secure Email Gateway (SEG) & Cisco Secure Email and Web Manager (SEWM)
Affected Platforms: Cisco AsyncOS Software (physical and virtual appliances)
Threat Actor: UAT-9686
Malware: AquaShell, AquaTunnel, AquaPurge, and Chisel
Impact: CVE-2025-20393 is a critical zero-day vulnerability (CVSS 10.0) in Cisco AsyncOS affecting Cisco Secure Email Gateway and Secure Email and Web Manager appliances. The flaw in the Spam Quarantine web interface allows unauthenticated remote attackers to execute arbitrary commands with root privileges when the interface is internet-exposed. It has been actively exploited since late November 2025 by the China-linked APT group UAT-9686 using advanced persistence malware. No official patch is available as of December 19, 2025, requiring organizations to rely on strict network-level mitigations.

CVE

CVE	NAME	AFFECTED PRODUCT	ZERO-DAY	CISA KEV	PATCH
CVE-2025-20393	Cisco Multiple Products Improper Input Validation Vulnerability	Cisco Multiple Products	✓	✓	✗

Exploitation Timeline



Vulnerability Details

#1

CVE-2025-20393 is a critical zero-day vulnerability (CVSS 10.0) affecting Cisco Secure Email Gateway (SEG) and Cisco Secure Email and Web Manager (SEWM) appliances running Cisco AsyncOS. The flaw arises from improper input validation (CWE-20) in the Spam Quarantine web interface, allowing unauthenticated remote attackers to execute arbitrary commands with root privileges. Exploitation is possible only when the Spam Quarantine feature is enabled and its interface is exposed to the internet, an unsafe but commonly misconfigured deployment scenario.

#2

The vulnerability has been actively exploited since late November 2025 by UAT-9686, a China-linked advanced persistent threat group with tooling overlaps to APT41 and UNC5174. Cisco Talos identified the campaign on December 10, 2025, during an investigation of a TAC support case. Attackers leverage the flaw for initial access and then deploy a tailored malware toolkit designed for stealth and long-term appliance control.

#3

Post-exploitation activity includes the deployment of AquaShell (a Python-based web backdoor), AquaTunnel (a Go-based reverse SSH tunneling tool), AquaPurge (a log-clearing utility), and Chisel (an HTTP tunneling tool). These components provide persistence, command-and-control, lateral movement capabilities, and anti-forensic functionality. Cisco has stated that these persistence mechanisms cannot be reliably removed and that full appliance rebuilds are required to eradicate confirmed compromises.

#4

As of December 19, 2025, no official patch is available, and Cisco's advisory remains at Version 1.0 (Interim). Organizations must rely on network-level mitigations, including removing internet exposure to the Spam Quarantine interface, enforcing strict firewall controls, separating mail and management interfaces, and exporting logs to external systems to support detection and forensic analysis.

Vulnerabilities

CVE ID	AFFECTED PRODUCTS	AFFECTED CPE	CWE ID
CVE-2025-20393	Cisco Secure Email Gateway (SEG) and Cisco Secure Email and Web Manager (SEWM): All Cisco AsyncOS versions (physical and virtual appliances)	cpe:2.3:a:cisco:secure_email_and_web_manager_virtual_appliance:-:*:*:*:*:*:*:* cpe:2.3:a:cisco:secure_email_gateway_virtual_appliance:-:*:*:*:*:*:*:* cpe:2.3:h:cisco:secure_email_and_web_manager:-:*:*:*:*:*:*:* cpe:2.3:h:cisco:secure_email_gateway:-:*:*:*:*:*:*:*	CWE-20

Recommendations

Restrict Spam Quarantine Interface Access: Immediately remove or block internet access to the Spam Quarantine web interface. Configure firewall rules to allow connections only from trusted internal IP addresses. This is the most critical mitigation as the vulnerability requires the interface to be internet-exposed for remote exploitation.

Implement Network Segmentation: Deploy Cisco Secure Email Gateway and SEWM appliances behind dedicated filtering firewalls. Separate mail processing and management functions onto different network interfaces. This limits attacker lateral movement and reduces the attack surface if compromise occurs.

Hunt for Indicators of Compromise: Monitor network traffic for connections to known C2 infrastructure. Check file integrity of /data/web/euq_webui/htdocs/index.py for unauthorized modifications. Investigate any unusual outbound SSH connections from email appliances.

Enable External Log Forwarding: Configure log export to external SIEM or syslog servers immediately. UAT-9686 deploys AquaPurge to clear local logs and destroy forensic evidence. External log storage ensures attack artifacts are preserved for incident response and investigation.

Rebuild Confirmed Compromised Appliances: If exploitation is detected, perform a complete appliance rebuild from clean images. Standard remediation procedures will not remove UAT-9686 persistence mechanisms including AquaShell and AquaTunnel.

Potential MITRE ATT&CK TTPs

TA0042 Resource Development	TA0001 Initial Access	TA0002 Execution	TA0011 Command and Control
TA0003 Persistence	TA0005 Defense Evasion	T1203 Exploitation for Client Execution	T1140 Deobfuscate/Decode Files or Information
T1068 Exploitation for Privilege Escalation	T1588.005 Exploits	T1588.006 Vulnerabilities	T1588 Obtain Capabilities
T1090 Proxy	T1190 Exploit Public-Facing Application	T1059 Command and Scripting Interpreter	T1059.006 Python
T1505.003 Web Shell	T1505 Server Software Component	T1070.002 Clear Linux or Mac System Logs	T1070 Indicator Removal
T1572 Protocol Tunneling	T1095 Non-Application Layer Protocol	T1027 Obfuscated Files or Information	

Indicators of Compromise (IOCs)

TYPE	VALUE
SHA256	2db8ad6e0f43e93cc557fbda0271a436f9f2a478b1607073d4ee3d20a87ae7ef, 145424de9f7d5dd73b599328ada03aa6d6cdcee8d5fe0f7cb832297183dbe4ca, 85a0b22bd17f7f87566bd335349ef89e24a5a19f899825b4d178ce6240f58bfc
IPv4	172[.]233[.]67[.]176, 172[.]237[.]29[.]147, 38[.]54[.]56[.]95
File Path	/data/web/euq_webui/htdocs/index.py

Patch Details

As of December 19, 2025, no official security patch or update has been released for CVE-2025-20393; Cisco's advisory remains at Version 1.0 (Interim) and the vulnerability is still unpatched while exploitation continues.

References

https://sec.cloudapps.cisco.com/security/center/content/CiscoSecurityAdvisory/cisco-sa-sma-attack-N9bf4

https://blog.talosintelligence.com/uat-9686/

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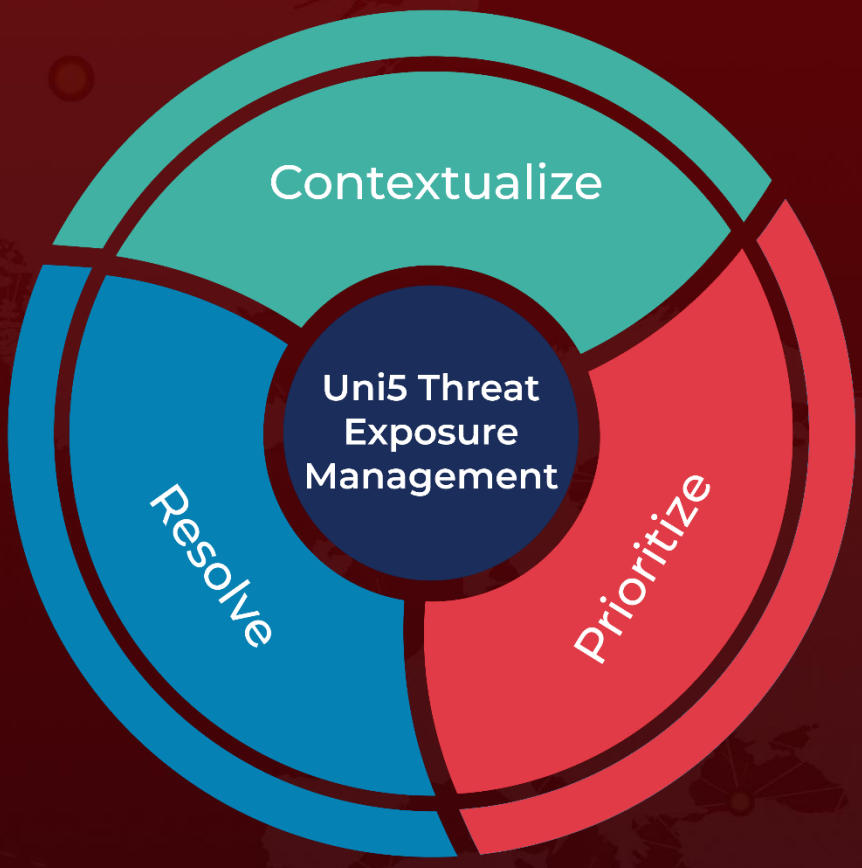

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