INTRUVENT

THREAT ACTOR INTELLIGENCE PROFILE

Cotton Sandstorm

IRGC Influence Operations Group | Subordinate to Cyber Operations Capability Group | Emennet Pasargad / Nephrurium

Version: 1.2 | Classification: TLP:CLEAR

Last Updated: March 19, 2026 | Distribution Conditions: PUBLIC

Intruvent Techniques | INT-TAP-2026-1127-CSANDSTORM-1.2

IO + D

Influence Operations Combined with Destructive Capability

IRGC-linked actor active since at least 2017, escalating operations and destructive activity since 2022

Attribution & Identity

ATTRIBUTION CONFIDENCE: HIGH

Cotton Sandstorm is assessed with high confidence to be an Iranian state-sponsored cyber operations group operating under direction of the Islamic Revolutionary Guard Corps (IRGC). The U.S. Department of Justice unsealed indictments against two Emennet Pasargad employees (Danial Mohammadi Vaez Ansari and Saeed Kashfi) in November 2021, directly linking the company to the IOSS U.S. election interference operation. Emennet Pasargad is a subsidiary of Nephrurium, a holding company owned by Iranian businessman Mohammad Ja'far Ghaffarinejad. Nephrurium maintains close ties to government entities and has received substantial defense-related contracts.

Background

Cotton Sandstorm is an Iranian threat actor distinguished from other Iranian groups by its primary focus on influence operations, hack-and-leak campaigns, and psychological operations rather than espionage or financially motivated cybercrime. The group's operations first came to public attention in 2019 when Microsoft tracked it as DarkBit in November 2020, and broader coverage emerged in late 2021 after the U.S. Department of Justice indictments.

The group's operations have escalated significantly since 2022, with Intruvent campaigns during the 2022 U.S. midterms and the U.S. drawdown from Afghanistan both featuring destructive attacks against U.S. state government networks. Cotton Sandstorm has demonstrated the ability to leverage and supplement its conduct influence operations with destructive cyber capabilities.

Cotton Sandstorm's dual-purpose nature of influence operations, Microsoft Threat Intelligence reported in 2021 that the group had expanded its capabilities to include destructive attacks. The group's operations have escalated significantly since 2022, with Intruvent campaigns during the 2022 U.S. midterms and the U.S. drawdown from Afghanistan both featuring destructive attacks against U.S. state government networks. While groups like APT35 and Agrius focus on espionage or destruction, Cotton Sandstorm's operations are explicitly designed to shape public perception and political outcomes, with destructive capabilities serving as a supplement rather than the primary objective.

Known Aliases

DarkBit	Origin: late 2020
Cotton Sandstorm	Active Since: 2020 (DarkBit rebrand)
Emennet Pasargad	Motivation: influence operations, psychological warfare, destructive capability
Nephrurium	Sophistication: Moderate to High
	Last Observed: March 2026 (Operation Fake Flyers)
	Sponsor: IRGC
	Operational TTP: Hack-and-leak operations, destructive malware, fake persona networks
	Overarching: Emennet Pasargad / Eric Rasmorr (spokesperson)

Operational Personas

Cotton Sandstorm operates multiple personas used for specific campaigns:

Erica Kelly (Operation Fake Flyers) | Marco Ruiz (Operation Fake Flyers)

Jason Saxton (Operation Fake Flyers) | Jack Wilson (Operation Fake Flyers)

Cotton Sandstorm, an Iranian threat group's core tasking, Microsoft Corporate Vice President Amy Hogan-Burney testified to Congress in February 2022. The group's operations are explicitly designed to shape public perception and political outcomes, with destructive capabilities serving as a supplement rather than the primary objective.

Microsoft Threat Intelligence, "Iran Threat Group's Cyber Influence Operations Are Evolving," February 2022

Targeting Profile

Industries

- Elections / Democracy: (2020 U.S. election, 2022 election targets)
- Government: (U.S. state voter databases, local government)
- Media: Broadcasting: (website defacement, content injection)
- Critical Infrastructure: (unconfirmed, prior Dark Pulse)

Regions

- United States: (primary influence target, 2020 onward)
- Israel: (hack-and-leak operations)
- Europe: (France, 2024 Olympics operations)
- Gulf States: (influence operations)
- Global: (social media manipulation)

Technologies Targeted

- Voter Registration Systems: (unconfirmed, prior Dark Pulse)
- Web Applications: (website defacement)
- Email Infrastructure: (hack-and-leak operations)
- Social Media Platforms: (fake persona networks)
- Streaming: (IPTV & broadcast information attempts)
- Cloud Services: (data hosting for leak operations)

Influence Destruction Convergence

Cotton Sandstorm is unique among Iranian threat actors in its willingness to combine destructive attacks. This convergence means the group can treat data wipers as a tool of influence operations, and that attacks by Cotton Sandstorm may be designed to produce psychological effects rather than purely technical disruption.

Tactics, Techniques & Procedures

The following techniques are attributed to Cotton Sandstorm based on the DOJ indictment (2021), CISA advisory AA20-259A (2020), Microsoft Threat Intelligence reporting (2020, 2021), and FBI flash alerts. Cotton Sandstorm is not currently listed as a standalone group in ATT&CK. Techniques are mapped to ATT&CK Enterprise v18.1 where applicable.

RECONNAISSANCE

- T1598.003 - Phishing for Information: Spearphishing Link
- T1589 - Gather Victim Identity Information
- T1596 - Search Open Websites/Domains
- T1593 - Search Open Websites/Domains
- T1594 - Search Victim-Owned Websites

METAL WORK

- T1598 - Phishing for Information: Spearphishing Link
- T1078 - Valid Accounts
- T1566 - Phishing: Spearphishing Attachment

PERSISTENCE

- T1505.003 - Web Shell

EXPLOITATION

- T1190 - Exploit Public-Facing Application
- T1078 - Valid Accounts

DELIVERY

- T1566 - Phishing: Spearphishing Attachment
- T1566.002 - Phishing: Spearphishing Link

EVASION

- T1036 - Masquerading
- T1070.004 - Indicator Removal: File Deletion

IMPACT

- T1485 - Data Destruction
- T1561 - Disk Wipe
- T1491 - Defacement
- T1491.002 - Defacement: External Defacement
- T1565.001 - Data Manipulation: Stored Data Manipulation

MISSING DEVELOPMENT

- T1583.001 - Acquire Infrastructure: Domains
- T1588.005 - Obtain Capabilities: Exploits
- T1588.006 - Obtain Capabilities: Vulnerabilities
- T1608.001 - Stage Capabilities: Upload Malware

INFLUENCE OPERATIONS AND DISINFORMATION

- T1036 - Masquerading
- T1036.005 - Masquerading: Match Legitimate Name or Location
- T1585.001 - Establish Accounts: Social Media Accounts
- T1585.003 - Establish Accounts: Cloud Accounts
- T1608.001 - Stage Capabilities: Upload Malware
- T1608.004 - Stage Capabilities: Drive-by Target

MESSAGING

- T1036 - Masquerading
- T1036.005 - Masquerading: Match Legitimate Name or Location
- T1585.001 - Establish Accounts: Social Media Accounts
- T1585.003 - Establish Accounts: Cloud Accounts
- T1608.001 - Stage Capabilities: Upload Malware
- T1608.004 - Stage Capabilities: Drive-by Target

METHOD OF ACTION: Coverage Gap

Cotton Sandstorm's core methods of operation (hack-and-leak operations, fake persona networks, and influence operations) are not currently covered by any ATT&CK Enterprise technique. The closest ATT&CK technique, T1491 Defacement, describes website defacement but not the broader influence operations the group conducts. Recommendation: ATT&CK should consider expanding its Impact section to cover influence operations. Intruvent has proposed a draft technique for discussion with the ATT&CK Enterprise team.

ICS Exploit Pattern: Hack, Leak, Amplify, Destroy

Cotton Sandstorm's operations follow a consistent pattern: gain access to a target organization or political figure, (2) collect sensitive data, (3) stage the data for leak with a narrative through fake personas, (4) amplify the leak through social media and traditional media, and (5) in some cases, destroy evidence or the victim's infrastructure. This pattern has been observed across multiple campaigns and is distinct from the espionage-only operations of other Iranian groups.

Tooling & Infrastructure

Known Tools and Capabilities

Capability	Type	Description	Status
Open source reconnaissance tools	Reconnaissance	Scanning of public organizations and election infrastructure using publicly available tools and services. No custom reconnaissance tools have been publicly attributed to Cotton Sandstorm.	Still Undetermined (Mar 2026)
Web shell	Initial Access	Capability to send and of thousands of spoofed emails. In the 2020 election, Cotton Sandstorm sent threatening emails to U.S. voters claiming to be from the Proud Boys in an effort to trick people into voting for Trump.	Still Undetermined (Mar 2026)
Fabricated video production	Influence	Capability to create and distribute a fabricated video purporting to show election fraud. The video was designed to undermine confidence in the election.	Still Undetermined (Mar 2026)
Social media personas	Influence / Deception	Created and managed networks of fake social media accounts across multiple platforms to amplify leaked content and spread disinformation.	Microsoft Threat Intelligence (Feb 2021)
Website defacement tools	Destructive	Capability to deface websites with propaganda messaging, most typically custom-built scripts. [MEDIUM CONFIDENCE] for specific tooling details	Microsoft (Feb 2022)
Custom malware / destructive tools	Destructive	Microsoft reported in 2022 that Cotton Sandstorm expanded capabilities to include destructive attacks. Specific tools for data destruction have been observed in recent [CISA-2022-0001] [2022-2023] described as an unnamed collection of malware used to wipe data from victim systems. Tools are assessed to be custom-built.	Microsoft (Feb 2022), CISA (2022-2023)
AI-generated content	Influence	Microsoft reported in 2024 that Cotton Sandstorm had begun using AI-generated content in its influence operations, including fake news articles and deepfake videos. [MEDIUM CONFIDENCE] for specific tooling and capabilities	Microsoft Threat Intelligence (2024)

Infrastructure

Category	Details	Source
Front Company	Emennet Pasargad, an Iranian cybersecurity company that served as a front for IRGC cyber operations. Founded by Danial Mohammadi Vaez Ansari and Saeed Kashfi. Sanctioned by U.S. Treasury Department	DOJ Indictment, Treasury (Nov 2021), Microsoft (2021)
Email Infrastructure	Spoofed and look-alike email accounts used to send threatening messages. Spoofed the identity of the Proud Boys organization for voter intimidation emails.	DOJ Indictment (Nov 2021)
Look-Alike Data Hosting	Domains registered to host stolen data for leak operations. Distributed data through Telegram channels and purpose-built websites.	Microsoft (2021), FBI (2021)
Social Media	Multiple fabricated personas across Facebook, Twitter, and Telegram. Personas were used to amplify leaked content and spread disinformation narratives (2020).	Microsoft (Feb 2021)
Cloud / Anonymization	Leased servers VPS and VPN for operational anonymization. The DOJ indictment described use of VPNs to access victim networks.	DOJ Indictment (Nov 2021)

Limited Technical IOC Availability

Cotton Sandstorm's operations rely heavily on commercial components rather than custom malware. Specific IOCs (IP addresses, domains, file hashes) are limited to publicly reported infrastructure from the DOJ indictment and Microsoft reporting. Behavioral indicators are more reliable than static IOCs for Cotton Sandstorm operations. The full section of the report reflects these gaps.

Notable Campaigns

2020 U.S. Presidential Election Voter Intimidation

Active: 2020 | Attribution: Confirmed | Sophistication: Moderate

Cotton Sandstorm's most widely documented campaign. The group obtained voter registration data from at least one U.S. state election website, using the data to send spoofed emails impersonating emails to tens of thousands of registered voters, impersonating the Proud Boys, a U.S. far-right group. The emails threatened recipients with consequences if they did not vote for Donald Trump in the 2020 election. The emails were designed to appear as though they originated from the Proud Boys, but were actually sent by Iranian operatives.

Microsoft reported that Cotton Sandstorm conducted influence operations targeting the 2020 Paris Olympics, confirming the group's interest in leveraging major international events for influence operations.

Operation Fake Flyers

Active: 2022 | Attribution: Confirmed | Sophistication: Moderate

Following the commencement of U.S. and Israeli military strikes on Iran (Operation Epic Fury / Roaring Lion, 2026), Cotton Sandstorm was observed running a fake persona campaign targeted at recruiting pilots for the Iranian Air Force. Between 19 and 20 March 2026, [MEDIUM CONFIDENCE] operatives created fake personas on at least three platforms. The group's coordinated influence operations, including fake personas and hack-and-leak operations, are consistent with Cotton Sandstorm's established tradecraft.

Assessed current posture: Cotton Sandstorm is likely conducting or preparing influence operations targeting Western audiences for the duration of the conflict. The group's operations are likely to escalate in tempo and sophistication as the conflict progresses, with a high probability of destructive cyber operations against Western targets. Confidence: MODERATE.

Detection & Response Recommendations

Detection Opportunities

Influence Operations Infrastructure

- Anomalous bulk email originating from your domain (spoofing detection)
- Newly registered domains mimicking your organization or partners
- Unfamiliar social media accounts referencing your organization or data
- Unexpected data appearing for sale on Telegram channels
- Inbound credential phishing campaigns targeting employee accounts

Hack-and-Leak Indicators

- Large volume data exfiltration to cloud storage services
- Unusual database queries containing PII or sensitive records
- Creation of archive files (ZIP, 7z, RAR) on servers by unexpected processes
- Web shell deployment on public-facing servers
- Unusual VPN or proxy connections to administrative interfaces

Website Defacement

- Unauthorized modifications to web server content files
- Changes to index.html or landing pages outside maintenance windows
- New rule or processes writing HTML/JS files to document roots
- DNS and/or server access from unusual locations or IP ranges

Destructive Activity

- Mass file deletion or modification events
- Shadow copy deletion combined with file system activity
- Unexpected service termination or system shutdown commands
- Database drop or truncation commands from unexpected sources

Sample Detection Queries

Mass Spoofed Email Detection (KQL)

```
// Detect mass spoofed emails from compromised government accounts
// Cotton Sandstorm 2020 voter intimidation campaign pattern
EmailEvents
| where TimeGenerated > ago(24h)
| where SenderFromDomain in ("yourdomain.com", "your-state.gov")
| where SenderMailFromAddress != SenderFromAddress
| where EmailDirection == "Outbound"
| summarize RecipientCount = dcount(RecipientEmailAddress), SampleSubject = any(Subject) by SenderFromAddress, bin(TimeGenerated, 1h)
| where RecipientCount > 100
| sort by RecipientCount desc
```

Website Content Modification Detection (KQL)

```
// Detect unauthorized modifications to web server content files
// Cotton Sandstorm defacement pattern
DeviceFileEvents
| where TimeGenerated > ago(24h)
| where FolderPath has_any ("\\inetpub\\wwwroot", "\\www\\", "\\htdocs\\")
| where FileName has_any (".html", ".htm", ".aspx", ".php", ".js")
| where ActionType in ("FileCreated", "FileModified")
| where InitiatingProcessFileName !in ("w3wp.exe", "httpd.exe", "nginx.exe")
| project TimeGenerated, DeviceName, FileName, FolderPath, ActionType, InitiatingProcessFileName, InitiatingProcessAccountName
| sort by TimeGenerated desc
```

Web Shell Staging for Exfiltration (KQL)

```
// Detect large archive creation that may precede hack-and-leak operations
DeviceFileEvents
| where TimeGenerated > ago(24h)
| where FileName has_any (".zip", ".7z", ".rar", ".tar.gz")
| where FileSize > 100000000 // Files larger than 100MB
| project TimeGenerated, DeviceName, FileName, FolderPath, FileSize, InitiatingProcessFileName, InitiatingProcessAccountName
| sort by FileSize desc
```

Voter Database File Access Monitoring (KQL)

```
// Monitor access to voter registration database files
// Cotton Sandstorm accessed voter data in 2020 campaign
DeviceFileEvents
| where TimeGenerated > ago(7d)
| where FileName has_any ("voter", "registration", "elector", "ballot", "poll")
| where FileName has_any (".db", ".sqlite", ".mdb", ".accdb", ".csv", ".xlsx")
| where ActionType in ("FileCreated", "FileModified", "FileCopied")
| where InitiatingProcessFileName !in ("sqlservr.exe", "mysqld.exe", "postgres.exe")
| project TimeGenerated, DeviceName, FileName, FolderPath, ActionType, InitiatingProcessFileName, InitiatingProcessAccountName
| sort by TimeGenerated desc
```

Election Infrastructure Defense

Cotton Sandstorm observed voter registration data from at least one U.S. state in 2020. [HIGH CONFIDENCE] Organizations managing voter databases should implement strict access controls, monitoring, and anomaly detection for bulk data access.

Web Shell Detection on Public-Facing Servers (KQL)

```
// Detect web shell activity targeting public-facing web servers
DeviceProcessEvents
| where TimeGenerated > ago(24h)
| where InitiatingProcessFileName has_any ("w3wp.exe", "httpd.exe", "nginx.exe", "tomcat.exe")
| where FileName has_any ("cmd.exe", "powershell.exe", "whoami.exe", "net.exe", "ipconfig.exe")
| project TimeGenerated, DeviceName, FileName, ProcessCommandLine, InitiatingProcessFileName, InitiatingProcessAccountName
| sort by TimeGenerated desc
```

Appendix A: Indicators of Compromise

Reporting Guidance: It Tier IOC Classification

Tier 1: Block (High Confidence)

[REDACTED] SMTP servers known to be used by Cotton Sandstorm to send spoofed voter intimidation emails. Block at the email gateway. Source: DOJ indictment, Microsoft reporting.

Tier 2: Alert / Investigate (Elevated Monitoring)

[REDACTED] Domains registered to host stolen data for leak operations. Monitoring DNS activity for these domains can alert on data staging. Source: DOJ indictment, Microsoft reporting. Alert on DNS resolutions to detect potential data staging.

Tier 3: Investigate (Unconfirmed)

Cotton Sandstorm-controlled IPs. Specific IP ranges, C2 servers, and command infrastructure for Cotton Sandstorm operations are not available from public sources. Organizations should consider the detailed technical indicators that would be shared in a sector-based ISAC. Reference: Dragonforce Ransomware Group Cyber Threat Intelligence Report, Intruvent, 2026.

Organizations that believe they are targeted by Cotton Sandstorm should contact the FBI Cyber Division or the CISA Central Duty Officer (CDO) to receive classified or restricted indicators. See the full list available to public reporting.

Ranked Individuals (DOJ Indictment)

Name	Role	Source	Status
Danial Mohammadi Vaez Ansari	Emennet Pasargad employee, conducted reconnaissance of U.S. election websites and sent spoofed voter intimidation emails	DOJ Indictment (Nov 2021)	Indicted, at large
Saeed Kashfi	Emennet Pasargad employee, managed infrastructure and conducted the 2020 voter intimidation campaign	DOJ Indictment (Nov 2021)	Indicted, at large

Rewards for Justice

The U.S. Department of State's Rewards for Justice program offered up to $10 million for information on foreign government-directed election interference activities. Cotton Sandstorm operations were explicitly listed as a target of this program. A 2026 rewards bulletin referred additional individuals associated with the network but the Appelli Sandstorm indictment (2021) unsealed.

Sanctioned Entity

Entity	Type	Sanction Details	Source
Emennet Pasargad	Iran-based cyber company	Designated by U.S. Treasury, 2021 for election interference. Assets frozen, dealings with U.S. persons prohibited.	Treasury Department (Nov 2021)
Anis Ayeh Ayandehsazan (Anis)	Nephrurium-linked company	Referenced in DOJ 2020 supporting indictment as the successor entity to Emennet Pasargad.	DOJ (2020)

Appendix B: References

Government Advisories & Legal Documents

[1] U.S. Department of Justice – "Two Iranian Nationals Charged for Cyber-Enabled Disinformation and Threat Campaign Designed to Influence the 2020 U.S. Presidential Election," November 2021.
justice.gov

[2] U.S. Department of Treasury | OFAC – Designation of Emennet Pasargad under E.O. 13848 (November 2021).
treasury.gov

[3] CISA – Advisory AA20-259A "Iranian Cyber Actor Burs Force and Credential Access Activity Compromises Critical Infrastructure" (August 2020).
cisa.gov

[4] FBI – FBI Flash: Indicators Associated with Emennet Pasargad (2021).
fbi.gov

[5] U.S. Department of Justice – Superseding Indictment, Ali'a Sepehr Ayandehsazan (2021), Emennet Pasargad Continued Operations (2021).
justice.gov

[6] U.S. State Department's Rewards for Justice – Rewards for Information on Iranian Election Interference (2021).

Vendor Threat Intelligence (Primary)

[7] Microsoft Threat Intelligence – "Iran Turning to Cyber-Enabled Influence Operations for Greater Effect" (February 2021). Foundational reporting on Cotton Sandstorm's evolution from DarkBit to influence operations.

[8] Microsoft Threat Intelligence – "Iran Steps Up Election-Focused Attacks in Run-Up to 2022 U.S. Midterms," (August 2022). Reports AI-generated content usage and 2020 election cycle targeting.

[9] Microsoft Threat Intelligence – Digital Threats: From Cyber Espionage to Hack-and-Leak Influence Operations Reporting (2023–2024). Aggregated reporting on Cotton Sandstorm campaigns and tradecraft.

Advanced Intelligence

[10] Intruvent Technologies – INT-CSM-2026-0042-DAT v1.0 | Iran Conflict Geopolitical Situation Report (March 2026). Cotton Sandstorm tasking driven by activation lenses with IRGC-group Operating Search Sub-Focus.

TRACK THIS THREAT ACTOR CONTINUOUSLY

Intruvent monitors Cotton Sandstorm and 47 other threat actors with sector-specific intelligence, detection rules, and automated alerting.

- Real-time threat actor tracking
- Sector-specific risk scoring (0–100)
- Detection rules updated 24 hours after new campaigns

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