

INTELLIGENCE BRIEFING

Security Command Center

TLP:CLEAR

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# BufferZoneCorp Supply Chain Campaign Plants Sleeper Packages Across Ruby and Go Ecosystems to Compromise CI Pipelines

THREAT CAMPAIGN | HIGH | CVSS 7.5

|                   |  |
|-------------------|--|
| SCC Item ID       | SCC-CAM-2026-0254  |
| Type              | Threat Campaign  |
| Severity          | HIGH   |
| CVSS Base Score   | 7.5  |
| Affected Products | RubyGems ecosystem, Go modules ecosystem, GitHub Actions workflows, AWS credential stores, npmrc files, GitHub CLI environments, SSH key stores, CI/CD runners |
| Published         | 2026-05-01T05:43:00  |
| Discovery Source  | Rss  |

## Executive Summary

A threat actor using the GitHub identity 'BufferZoneCorp' published malicious packages across the Ruby and Go open-source ecosystems, embedding credential-harvesting payloads that execute silently during routine dependency installation in CI/CD pipelines. Any development or build environment that installed affected packages before their removal should be treated as presumed compromised pending forensic validation, with AWS credentials, SSH keys, GitHub Actions secrets, and API tokens at risk of exfiltration. The business risk is significant: stolen CI credentials can enable attackers to pivot into cloud infrastructure, poison build artifacts, and establish persistent access across production environments.

## Technical Analysis

Threat actor 'BufferZoneCorp' staged malicious RubyGems and Go modules designed to execute during package installation (install hooks / init functions), requiring no additional user interaction. The campaign used a dual-track strategy: some packages carried immediately active credential-harvesting payloads; others were delayed-activation packages, benign at install time but designed for later activation via a trigger mechanism [specific activation conditions not confirmed in available sources]. Targeted assets include environment variables, SSH keys (~/.ssh/), AWS credential files (~/.aws/credentials), .npmrc tokens, GitHub CLI tokens, and GitHub Actions secrets accessible within runner contexts. Exfiltration used standard HTTP/S (T1071.001). Persistence mechanisms were embedded for post-install execution (T1547, T1053). The packages impersonated legitimate developer tooling (T1608.001). CWEs: CWE-506 (embedded malicious code),

CWE-494 (download of code without integrity check), CWE-312 (cleartext storage of sensitive information), CWE-829 (inclusion of functionality from untrusted control sphere). MITRE coverage: T1195.001 (supply chain compromise), T1552.001 (credentials in files), T1552.004 (private keys), T1528 (steal application access tokens), T1554 (compromise client software binary), T1098.004 (SSH authorized keys). Packages have been removed from RubyGems.org and blocked by the Go module proxy (sum.golang.org). No CVE has been assigned. Qualitative severity is rated High based on operational scope and credential exposure risk; CVSS metrics are not available from vendor sources. Environments that installed affected packages before removal should be treated as presumed compromised and require credential rotation and forensic audit.

## Action Checklist

- 1. Step 1: Containment,** Identify all CI/CD runners, developer workstations, and build environments that executed a gem install or go get/go mod tidy within the window the packages were live. Isolate those environments from production networks and cloud credential stores immediately. Capture credential files and access logs for forensic analysis before rotation. Revoke all AWS IAM credentials, GitHub personal access tokens, SSH keys, and .npmrc tokens accessible from those environments within 4 hours of isolation.
- 2. Step 2: Detection,** Search CI/CD logs and package manager audit logs for any installation of packages published under the 'BufferZoneCorp' namespace. [Specific package names: confirm and list if available.] Review GitHub Actions workflow logs for unexpected outbound HTTP/S connections from runner steps. Check ~/.aws/credentials, ~/.ssh/known\_hosts write events, and .npmrc modification timestamps for anomalies during the exposure window. Query SIEM for outbound connections from build runners to unknown external IPs or domains around installation time (T1071.001 behavioral pattern).
- 3. Step 3: Eradication,** Remove all packages from 'BufferZoneCorp' from Gemfiles, go.mod, and lock files. Rebuild all affected containers and runner images from a known-clean base. Rotate every credential class confirmed accessible in compromised environments: AWS IAM keys, GitHub tokens, SSH keypairs, .npmrc auth tokens, and any secrets injected via CI environment variables. Re-scan rebuilt environments with a dependency integrity tool (e.g., bundler-audit for Ruby, govulncheck for Go) before returning to service.
- 4. Step 4: Recovery,** After credential rotation, validate that new credentials are functioning and that no unauthorized IAM policies, SSH authorized\_keys entries, or OAuth app authorizations were added during the exposure window. Review AWS CloudTrail, GitHub audit logs, and SSH access logs for lateral movement or persistence artifacts introduced using stolen credentials. Monitor build pipelines for anomalous artifact checksums or unexpected dependency additions for a minimum of 30 days post-remediation.
- 5. Step 5: Post-Incident,** Evaluate current controls against CWE-494 and CWE-829: implement or enforce dependency pinning with hash verification (e.g., Gemfile.lock with checksum enforcement, go.sum verification). Adopt a software composition analysis (SCA) tool integrated into the CI pipeline to flag new or unrecognized package publishers. Review the principle of least privilege for CI runner credential scopes; runners should not have access to production AWS credentials or broad GitHub token scopes. Map control gaps to NIST SP 800-161 (supply chain risk management) and NIST CSF Respond/Recover functions.

## IR / Forensic Enrichment

|                            |   |
|----------------------------|---|
| <b>Triage Priority</b>     | IMMEDIATE   |
| <b>Escalation Criteria</b> | Escalate to CISO, legal, and breach notification counsel immediately if AWS CloudTrail or GitHub audit logs confirm that stolen credentials were used to access, exfiltrate, or modify production data stores, customer PII, PHI, or regulated data — or if evidence of lateral movement from CI runners into production VPCs or cloud accounts is detected, as this may trigger breach notification obligations under GDPR, CCPA, or HIPAA depending on data classification.   |
| <b>Recovery Notes</b>      | After credential rotation, do not restore CI pipelines to production use until AWS IAM Access Advisor confirms no API calls were made using the new credentials from unexpected source IPs, and until GitHub audit logs show no unauthorized collaborator or webhook additions in the post-rotation window. Monitor all build artifact registries (ECR, RubyGems private feeds, Go module proxies) for unexpected image pushes or package publications for a minimum of 30 days, as the BufferZoneCorp payload had access to credentials that could have been used to poison downstream artifacts or establish persistent publish access. Treat any artifact built or published during the exposure window as potentially tainted and re-build from source with verified dependency manifests before redistribution.  |
| <b>Forensic Artifacts</b>  | RubyGems bundler cache at <code>~/gem/specs/</code> and <code>/usr/local/bundle/cache/</code> — the installed <code>.gem</code> files for BufferZoneCorp packages will contain the actual credential-harvesting payload code; preserve as primary malware evidence before eradication.   Go module cache at <code>\$GOPATH/pkg/mod/cache/download/</code> — the downloaded module zip files and their corresponding <code>go.sum</code> hash entries for BufferZoneCorp modules; the zip contents contain the malicious Go source that executed during <code>`go mod tidy`</code> or <code>`go get`</code> .   GitHub Actions workflow run logs for all jobs in the exposure window — downloadable per-run via the GitHub API; these contain the <code>stdout/stderr</code> of <code>gem install</code> and <code>go mod</code> commands including any error output from the payload, and runner environment variable dumps if debug logging was enabled ( <code>ACTIONS_STEP_DEBUG=true</code> ).   AWS CloudTrail management event logs filtered for the IAM write event types <code>CreateAccessKey</code> , <code>GetSecretAccessKey</code> , <code>AssumeRole</code> , <code>AttachUserPolicy</code> , and <code>PutRolePolicy</code> originating from runner IP addresses or EC2 instance profiles during the exposure window — establishes whether harvested AWS credentials were used for reconnaissance or persistence.   File system write audit records for <code>~/aws/credentials</code> , <code>~/ssh/known_hosts</code> , <code>~/ssh/authorized_keys</code> , and <code>.npmrc</code> files from runner hosts — sourced from <code>auditd</code> logs ( <code>/var/log/audit/audit.log</code> ) or Linux <code>inotify</code> -based monitoring — with exact timestamps confirming when the BufferZoneCorp payload wrote to or read from these credential stores during package installation. |

**Per-Action IR Details**

**Step 1: Containment — Identify all CI/CD runners, developer workstations, and build environments that executed a `gem install` or `go get/go mod tidy` within the window the packages were live. Isolate those environments from production networks and cloud credential stores immediately. Revoke all AWS IAM credentials, GitHub personal access tokens, SSH keys, and `.npmrc` tokens accessible from those environments.**

**NIST Phase:** Containment

**Reference:** NIST 800-61r3 §3.3 — Containment Strategy: isolate affected systems and preserve evidence before eradication to prevent further credential exfiltration from CI runners that ingested BufferZoneCorp packages.

**Controls:** NIST IR-4 (Incident Handling), NIST AC-2 (Account Management) — disable or revoke all IAM, GitHub PAT, and SSH credentials accessible from compromised runners, NIST SC-7 (Boundary Protection) — network-isolate affected CI runners from production AWS accounts and VPCs, CIS 5.3 (Disable Dormant Accounts) — treat all credentials exposed during the window as compromised and disable immediately, CIS 6.2 (Establish an Access



**Step 3: Eradication — Remove all packages from 'BufferZoneCorp' from Gemfiles, go.mod, and lock files. Rebuild all affected containers and runner images from a known-clean base. Rotate every credential class confirmed accessible in compromised environments: AWS IAM keys, GitHub tokens, SSH keypairs, .npmrc auth tokens, and any secrets injected via CI environment variables. Re-scan rebuilt environments with a dependency integrity tool (e.g., bundler-audit for Ruby, govulncheck for Go) before returning to service.**

**NIST Phase:** Eradication

**Reference:** NIST 800-61r3 §3.4 — Eradication: remove BufferZoneCorp malicious packages from all dependency manifests and lock files, destroy compromised runner images, and rotate the full credential surface accessible during the payload execution window before rebuilding CI infrastructure.

**Controls:** NIST SI-2 (Flaw Remediation) — remove malicious BufferZoneCorp packages from Gemfile.lock, go.sum, and go.mod and verify integrity of rebuilt images, NIST CM-3 (Configuration Change Control) — rebuild runner container images from a verified clean base image with documented change record, NIST IA-5 (Authenticator Management) — rotate all credential classes (AWS IAM, GitHub PAT, SSH keypairs, .npmrc tokens, CI environment secrets) confirmed in scope, NIST SI-7 (Software, Firmware, and Information Integrity) — use bundler-audit and govulncheck to verify dependency integrity of rebuilt environments before return to service, CIS 7.3 (Perform Automated Operating System Patch Management) — ensure rebuilt runner base images are fully patched before reintroduction, CIS 7.4 (Perform Automated Application Patch Management) — verify all Ruby gems and Go modules in rebuilt environments resolve from verified, non-BufferZoneCorp sources with checksum validation

**Compensating:** For teams without enterprise secret management: (1) Rotate AWS IAM keys via ``aws iam create-access-key`` then ``aws iam delete-access-key --access-key-id`` and update all CI secret stores; (2) Generate new SSH keypairs with ``ssh-keygen -t ed25519 -C 'ci-runner-replacement'`` and remove old public keys from all ``~/.ssh/authorized_keys`` and GitHub Deploy Keys; (3) Run ``bundle exec bundler-audit check --update`` against the rebuilt Gemfile.lock to confirm no remaining vulnerable or malicious gems; (4) Run ``govulncheck ./...`` in the rebuilt Go module workspace; (5) Use ``docker build --no-cache`` to force a clean rebuild of all runner images, and verify the resulting image digest against your registry before use — store the expected digest in a text file in your repo as a manual integrity baseline.

**Evidence:** BEFORE eradicating, preserve forensic copies of: (1) The exact Gemfile.lock and go.sum files that were present when the malicious packages were installed — these establish the precise package versions and hashes of the BufferZoneCorp payload for later malware analysis; (2) A tarball of the gem cache directory (``~/gem/`` or ``/usr/local/bundle/``) and Go module cache (``$GOPATH/pkg/mod/cache/``) from affected runners, preserving the actual malicious package binaries; (3) A memory dump or at minimum a full process tree capture (``ps auxf --forest > process_tree.txt``) from any runner that was live during payload execution, as the credential-harvesting payload may have been memory-resident; (4) All CI environment variable values (masked where possible) documented at time of compromise to establish the full credential scope accessible to the payload.

**Step 4: Recovery — After credential rotation, validate that new credentials are functioning and that no unauthorized IAM policies, SSH authorized\_keys entries, or OAuth app authorizations were added during the exposure window. Review AWS CloudTrail, GitHub audit logs, and SSH access logs for lateral movement or persistence artifacts introduced using stolen credentials. Monitor build pipelines for anomalous artifact checksums or unexpected dependency additions for a minimum of 30 days post-remediation.**

**NIST Phase:** Recovery

**Reference:** NIST 800-61r3 §3.5 — Recovery: after credential rotation, verify environment integrity by auditing IAM policy changes, SSH authorized\_keys modifications, and GitHub OAuth authorizations introduced during the BufferZoneCorp exposure window before restoring CI pipelines to production use.

**Controls:** NIST IR-4 (Incident Handling) — execute recovery phase actions consistent with documented IR plan, verifying containment and eradication effectiveness before restoration, NIST AU-6 (Audit Record Review, Analysis, and Reporting) — review AWS CloudTrail, GitHub audit logs, and SSH access logs for attacker persistence or lateral movement using stolen credentials, NIST AC-2 (Account Management) — audit for unauthorized IAM policies, OAuth app authorizations, and SSH authorized\_keys entries created during the exposure window, NIST SI-4 (System Monitoring) — monitor rebuilt CI pipelines for anomalous artifact checksums, unexpected dependency additions, or unauthorized package publisher changes for 30 days, CIS 5.1 (Establish and Maintain an Inventory of Accounts) —



**Evidence:** For post-incident documentation, preserve and archive: (1) The complete list of BufferZoneCorp packages identified across RubyGems and Go module ecosystems with their exact version numbers and publication timestamps, sourced from RubyGems.org and pkg.go.dev historical records, as the authoritative scope definition for this campaign; (2) A before/after comparison of CI runner IAM role policies and GitHub token scopes to document the credential blast radius that existed at time of compromise versus the hardened post-incident state; (3) Dependency manifest diffs (Gemfile.lock and go.sum before and after eradication) showing the exact packages removed; (4) SCA scan results from rebuilt environments confirming absence of BufferZoneCorp packages and establishing a verified clean baseline for future comparison.

## Detection Guidance

Primary detection focus: package installation events and anomalous outbound network activity from CI runners. (1) Audit package manager logs for any gem or Go module installed from the 'BufferZoneCorp' namespace; cross-reference Gemfile.lock and go.sum against known-good states using version control history. Specific package names: [confirm and list if available]. (2) Query SIEM or CI platform logs for outbound HTTP/S connections initiated by build runner processes to IP addresses or domains not in an allowlist, particularly during or immediately after dependency installation steps. (3) Check for unexpected modifications to credential files: ~/.aws/credentials, ~/.ssh/authorized\_keys, ~/.npmrc, and GitHub CLI config (~/.config/gh/). File integrity monitoring alerts on these paths are a direct indicator. (4) Review GitHub Actions audit logs (available under Organization Settings > Audit log) for unexpected secret access events or workflow modifications coinciding with the exposure window. (5) Behavioral indicator: delayed-activation packages may communicate externally on a trigger event; monitor for periodic beacon-like outbound connections from build infrastructure to unknown endpoints even after the initial installation window has passed (T1053, T1071.001 pattern). IOC availability (package hashes, command-and-control IPs) depends on threat intelligence vendor reporting and may not be present in public news coverage. Organizations should request indicators from CISA, vendor threat intelligence platforms, or the RubyGems and Go security teams. Treat absence of confirmed public IOCs as a sourcing gap, not a clearance.

## Indicators of Compromise

| Type   | Value                     | Context  | Confidence |
|--------|---------------------------|--|------------|
| DOMAIN | github.com/BufferZoneCorp | GitHub account used to publish malicious Ruby gems and Go modules in this campaign | HIGH       |

## Framework Mappings

### MITRE-ATTACK

- **T1053** — Scheduled Task/Job
- **T1059** — Command and Scripting Interpreter
- **T1552.001** — Credentials In Files
- **T1098.004** — SSH Authorized Keys
- **T1547** — Boot or Logon Autostart Execution

- **T1071.001** — Web Protocols
- **T1608.001** — Upload Malware
- **T1552.004** — Private Keys
- **T1528** — Steal Application Access Token
- **T1554** — Compromise Host Software Binary
- **T1195.001** — Compromise Software Dependencies and Development Tools

#### NIST-800-53R5

- **AC-3** — Access Enforcement
- **CM-7** — Least Functionality
- **SI-3** — Malicious Code Protection
- **SI-4** — System Monitoring
- **SI-7** — Software, Firmware, and Information Integrity
- **CM-3** — Configuration Change Control
- **SR-2** — Supply Chain Risk Management Plan

#### OWASP-TOP10-2021

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

#### CIS-V8

- **2.5** — Allowlist Authorized Software
- **2.6** — Allowlist Authorized Libraries
- **6.3** — Require MFA for Externally-Exposed Applications
- **15.1** — Establish and Maintain an Inventory of Service Providers

#### HIPAA-SECURITY

- **164.312(d)** — Person or Entity Authentication

#### SOC2-TSC

- **CC6.1** — Logical access security software, infrastructure, and architectures
- **CC9.2** — Manages risks associated with vendors and business partners

#### NIST-CSF-2

- **GV.SC-01** — Cybersecurity supply chain risk management program

#### ISO-27001-2022

- **A.5.21** — Managing information security in the ICT supply chain
- **A.5.23** — Information security for use of cloud services

## MITRE ATT&CK Mapping

| Technique ID | Technique Name   | Tactic               |
|--------------|--|----------------------|
| T1053        | Scheduled Task/Job                                     | Execution            |
| T1059        | Command and Scripting Interpreter                      | Execution            |
| T1552.001    | Credentials In Files                                   | Credential-Access    |
| T1098.004    | SSH Authorized Keys                                    | Persistence          |
| T1547        | Boot or Logon Autostart Execution                      | Persistence          |
| T1071.001    | Web Protocols  | Command-And-Control  |
| T1608.001    | Upload Malware   | Resource-Development |
| T1552.004    | Private Keys   | Credential-Access    |
| T1528        | Steal Application Access Token                         | Credential-Access    |
| T1554        | Compromise Host Software Binary                        | Persistence          |
| T1195.001    | Compromise Software Dependencies and Development Tools | Initial-Access       |

## Sources

| Source   | URL   | Tier |
|--|---|------|
| <b>Security News</b>   | <a href="https://thehackernews.com/2026/05/poisoned-ruby-gems-and-go-modules..">https://thehackernews.com/2026/05/poisoned-ruby-gems-and-go-modules..</a>   | T3   |
| <b>Poisoned Ruby gems + Go modules used in a supply chain attack ...</b>     | <a href="https://www.facebook.com/thehackernews/posts/-poisoned-ruby-gems-go...">https://www.facebook.com/thehackernews/posts/-poisoned-ruby-gems-go...</a> | T3   |
| <b>Malicious Ruby Gems Go Modules CI Secret Theft Explained</b>              | <a href="https://thecybrdef.com/malicious-ruby-gems-go-modules-steal-dev-sec...">https://thecybrdef.com/malicious-ruby-gems-go-modules-steal-dev-sec...</a> | T3   |
| <b>Malicious Ruby Gems and Go Modules Impersonate Developer...</b>           | <a href="https://app.daily.dev/posts/malicious-ruby-gems-and-go-modules-impe...">https://app.daily.dev/posts/malicious-ruby-gems-and-go-modules-impe...</a> | T3   |
| <b>A wave of attacks is using layered npm dependencies to ... - Facebook</b> | <a href="https://www.facebook.com/thehackernews/posts/-a-wave-of-attacks-is-...">https://www.facebook.com/thehackernews/posts/-a-wave-of-attacks-is-...</a> | T3   |

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