New issue

critical: unauthenticated log subscription and command injection in heartbeat execution flow #866

Closed #950

Labels P0-critical area:security bug

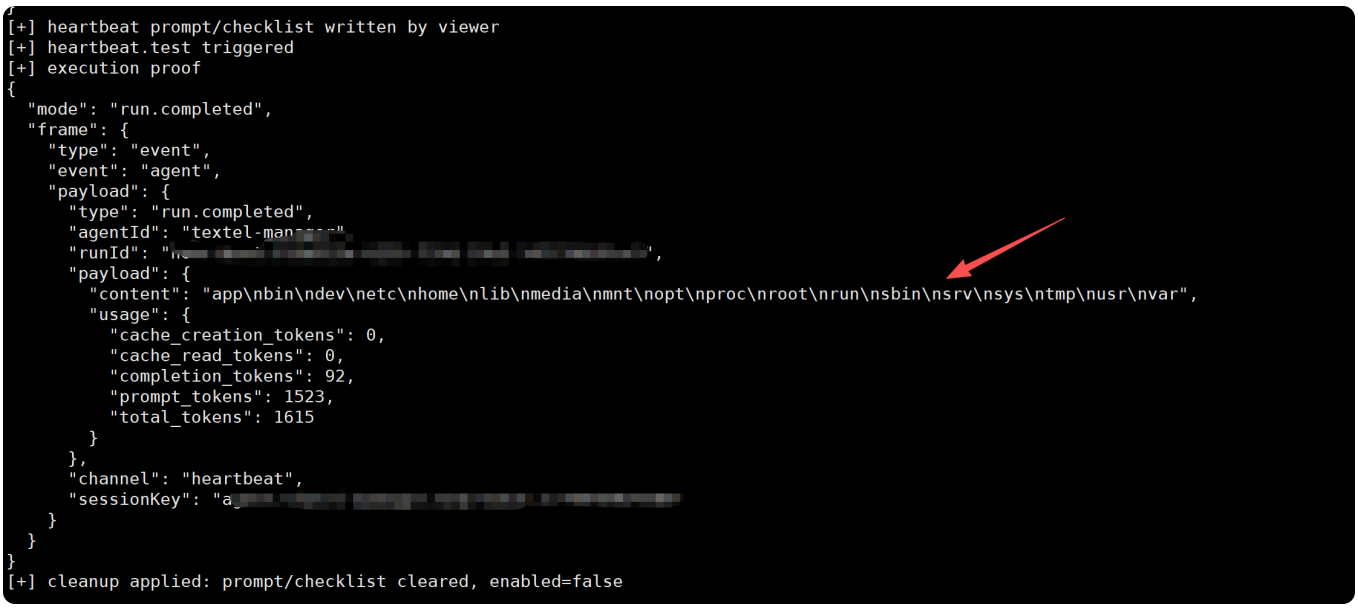
CH13hh opened 3 weeks ago · edited by CH13hh Edits •••

Title: Critical Authentication Bypass and Default Permit Policy Leading to Unauthenticated Remote Command Execution via Heartbeat Injection
Severity: Critical (CVSS 3.1 Score: 10.0 - AV:N/AC:L/PR:N/UI:N/S:C/C:H/I:H/A:H)
Affected Components:
gateway/connect (Authentication Interceptor / Middleware)
authorization/rbac (Permission Policy Engine)
api/channels/instances (Instance Listing RPC)
api/logs (Log Streaming RPC)
heartbeat/runner (Heartbeat Execution Engine)
Vulnerability Type:
CWE-306: Missing Authentication for Critical Function
CWE-863: Incorrect Authorization
CWE-94: Improper Control of Generation of Code ('Code Injection')
Description
GoClaw's Connect gateway exhibits a critical flaw in its authentication enforcement logic. When a client connects with an invalid, expired, or missing Bearer token, the server does not reject the connection. Instead, it silently downgrades the connection to an authenticated context with the viewer role.
Concurrently, the RBAC permission engine operates under a default-permit policy for unclassified RPC methods. Any method not explicitly restricted is inadvertently exposed to the viewer role.

By exploiting this chain of weaknesses, an unauthenticated remote attacker can:

Establish a "degraded" viewer session without any valid credentials.
List all registered agents and obtain their raw agent_id (UUID).
Subscribe to arbitrary agent logs via logs.tail to confirm liveness.
Write malicious content to the agent's heartbeat.set or heartbeat.checklist.set endpoints.
Trigger the Heartbeat Runner, which injects the attacker-controlled prompt/checklist content into the agent's execution context (specifically into a HEARTBEAT.md or immediate prompt payload).
Leverage the agent's exec tool capability (if enabled) to achieve arbitrary command execution on the underlying host via sh -c.

Remediation Recommendations
Reject Unauthenticated Connections (Critical):
Modify the Connect interceptor to strictly close the connection or return Unauthenticated status for any token verification failure. Do not fall back to a default viewer context.
Enforce Default Deny (Critical):
Change the RBAC engine policy to Default Deny. RPC methods must be explicitly annotated with allow: [viewer] or allow_unauthenticated: true if public access is intended.
Scoped Authorization for Heartbeat:
Heartbeat write operations (heartbeat.set) must never be accessible to the viewer role. These should require agent:write or admin scope.
Input Sanitization in Runner:
Treat any content originating from the heartbeat service as tainted/untrusted data. The Heartbeat Runner should sandbox or strictly validate the prompt before concatenating it with the agent's instruction stream. Consider using a dedicated, read-only context for heartbeat checks that does not permit access to exec tools.
Mask Sensitive Identifiers:
The channels.instances.list endpoint should return a non-sensitive Alias or Fingerprint instead of the raw internal UUID unless the caller possesses admin scope.



Email:aisec@tiansu.org

thieung added bug P0-critical area:security 2 weeks ago

thieung added a commit that references this issue 2 weeks ago

`fix(security): close auth bypass + default-permit RBAC (issue nextlev.` ··· `2319c5c`

thieung mentioned this 2 weeks ago

fix(security): close auth bypass + default-permit RBAC (issue #866) #950

thieung added 2 commits that reference this issue 2 weeks ago

`chore: move nextlevelbuilder#866 repro scripts into PR description` ··· `72ba2ec`

`fix(security): close auth bypass + default-permit RBAC (issue nextlev.` ··· `42f598b`

viettranx added a commit that references this issue 2 weeks ago

`fix(security): close auth bypass + default-permit RBAC (issue #866) (` ··· `406022e`

viettranx closed this as completed in #950 2 weeks ago

viettranx mentioned this 2 weeks ago

fix(acp): Gemini ACP protocol fixes and multi-session architecture #901

duhd-vnpay added a commit that references this issue 2 weeks ago

`chore(goclaw): merge upstream v3.9.0 — tenant-scoped web_search + sec.` ··· `2c19549`

vanducng added a commit that references this issue 4 days ago

`fix(permissions): classify zalo.webhook_url RPC as admin` ··· `fe301f6`

Metadata

Assignees

No one assigned

Labels

P0-critical area:security bug

Type

No type

Projects

No projects

Milestone

No milestone

Relationships

None yet

Development

fix(security): close auth bypass + default-permit RBAC (issue #866)
nextlevelbuilder/goclaw
v3.9.0

Participants