

IE2062 [2023/JUL]- Web Security

Web Security BB Assignment

Report 01 – CM.com

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1. CM.com

1.1.Overview

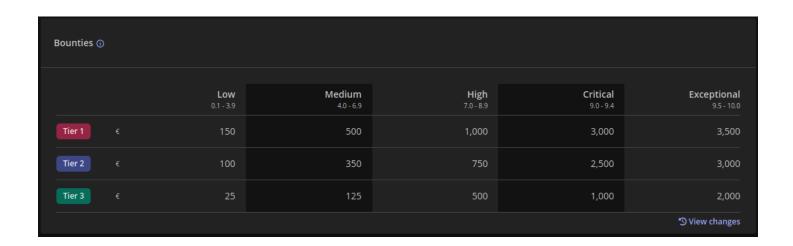
Description

CM.com is a listed company that provides Conversational Commerce services from its hybrid cloud platform with in-house developed software.

CM.com's customer base is spread over 118 countries, generating messages to more than 220 destinations.

Customers include Tier 1 enterprises, government agencies, as well as small and medium sized enterprises.

We offer API's for most of our products. You may find the documentation here: https://developers.cm.com



1.2.Scope

In scope

Important! Please use your @intigriti.me accounts, otherwise it is highly likely you will be blocked.

We are specifically looking for:

- leaking of personal data
- SQLi
- RCF

Please do not use the following methods:

- Bruteforce -> Password / Username bruteforce
- Directory / file / content enumeration: see rate limit guidelines

Our API's

You can use the platform or API's (docs) to use products.

New Application: Ticketing

How does this work?

Login to your account and go to https://www.cm.com/en-gb/app/ticketing/

From here you can create tickets and much more!

Make sure to take a look at the user-side as well (https://reserve.cmtickets.com/{GUID-OF-TICKET})

'S View changes

1.3.Out of Scope

Out of scope

Out of scope Domains

• All domains that fall outside the scope that we listed.

Temporarily Out of Scope (W.I.P)

• (S)XSS in the Pages application

Application

- Wordpress usernames disclosure
- Pre-Auth Account takeover/OAuth squatting
- Self-XSS that cannot be used to exploit other users
- Verbose messages/files/directory listings without disclosing any sensitive information
- CORS misconfiguration on non-sensitive endpoints
- · Missing cookie flags
- · Missing security headers
- · Cross-site Request Forgery with no or low impact
- Presence of autocomplete attribute on web forms
- Reverse tabnabbing
- Bypassing rate-limits or the non-existence of rate-limits.
- Best practices violations (password complexity, expiration, re-use, etc.)
- · Clickjacking without proven impact/unrealistic user interaction
- · Not stripping metadata of files
- · Same-site scripting
- Subdomain takeover without taking over the subdomain
- Arbitrary file upload without proof of the existence of the uploaded file
- Blind SSRF without proven business impact (pingbacks are not sufficient)
- Disclosed/misconfigured Google Maps API keys
- Host header injection without proven business impact

General

- . In case that a reported vulnerability was already known to the company from their own tests, it will be flagged as a duplicate
- Theoretical security issues with no realistic exploit scenario(s) or attack surfaces, or issues that would require complex end user interactions to be exploited
- Spam, social engineering and physical intrusion
- DoS/DDoS attacks or brute force attacks
- · Vulnerabilities that only work on software that no longer receive security updates
- · Attacks requiring physical access to a victim's computer/device, man in the middle or compromised user accounts
- Recently discovered zero-day vulnerabilities found in in-scope assets within 14 days after the public release of a patch or mitigation may be reported, but are usually not eligible for a bounty
- Reports that state that software is out of date/vulnerable without a proof-of-concept

'S View changes

1.4. Selected Domains



URL: login.cm.com

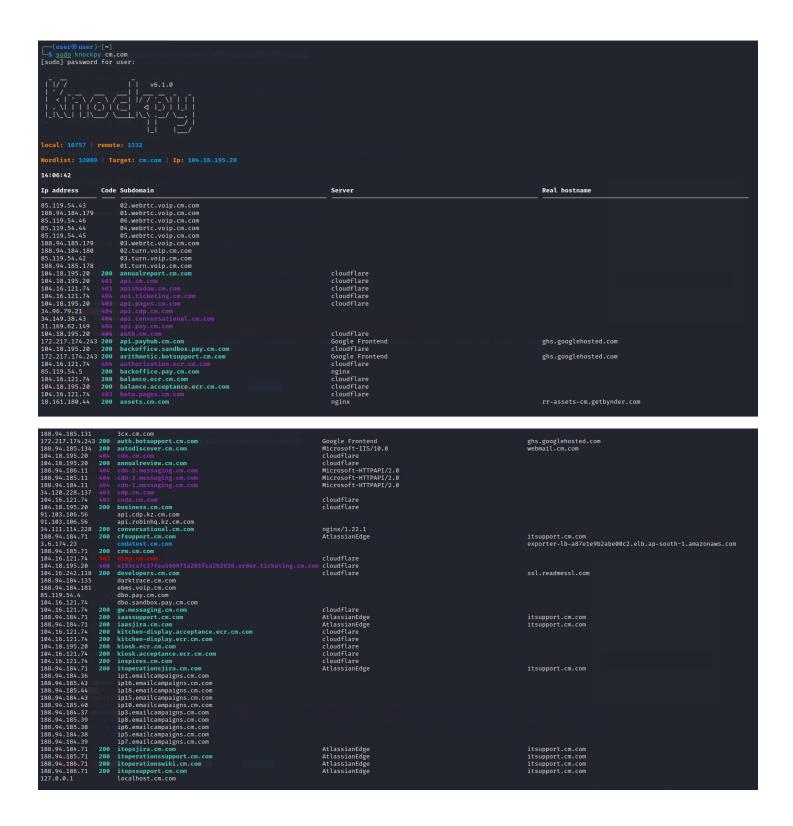
2. Information Gathering

2.1. Using Dmitry

```
(user⊕user)-[~]
 -$ <u>sudo</u> dmitry login.cm.com
[sudo] password for user:
Deepmagic Information Gathering Tool
"There be some deep magic going on"
HostIP:104.16.121.74
HostName:login.cm.com
Gathered Inet-whois information for 104.16.121.74
                103.253.144.0 - 104.37.31.255
inetnum:
               NON-RIPE-NCC-MANAGED-ADDRESS-BLOCK
netname:
                IPv4 address block not managed by the RIPE NCC
remarks:
remarks:
                For registration information,
remarks:
remarks:
               you can consult the following sources:
remarks:
remarks:
                IANA
                http://www.iana.org/assignments/ipv4-address-space
remarks:
                http://www.iana.org/assignments/iana-ipv4-special-registry
remarks:
                http://www.iana.org/assignments/ipv4-recovered-address-space
remarks:
remarks:
                AFRINIC (Africa)
remarks:
remarks:
               http://www.afrinic.net/ whois.afrinic.net
remarks:
               APNIC (Asia Pacific)
remarks:
remarks:
               http://www.apnic.net/ whois.apnic.net
remarks:
remarks:
                ARIN (Northern America)
               http://www.arin.net/ whois.arin.net
remarks:
remarks:
remarks:
                LACNIC (Latin America and the Carribean)
                http://www.lacnic.net/ whois.lacnic.net
remarks:
remarks:
remarks:
                EU # Country is really world wide
country:
                IANA1-RIPE
admin-c:
tech-c:
               IANA1-RIPE
status:
               ALLOCATED UNSPECIFIED
           RIPE-NCC-HM-MNT
mnt-by:
created:
              2023-08-28T15:08:53Z
last-modified: 2023-08-28T15:08:53Z
source:
               RIPE
```

```
% This query was served by the RIPE Database Query Service version 1.108 (ABERDEEN)
Gathered Inic-whois information for login.cm.com
ERROR: Unable to locate Name Whois data on login.cm.com
Gathered Netcraft information for login.cm.com
Retrieving Netcraft.com information for login.cm.com
Netcraft.com Information gathered
Gathered Subdomain information for login.cm.com
Searching Google.com:80 ...
Searching Altavista.com:80...
Found 0 possible subdomain(s) for host login.cm.com, Searched 0 pages containing 0 results
Gathered E-Mail information for login.cm.com
Searching Google.com:80 ...
Searching Altavista.com:80...
Found 0 E-Mail(s) for host login.cm.com, Searched 0 pages containing 0 results
Gathered TCP Port information for 104.16.121.74
Port
                State
25/tcp
                open
80/tcp
                open
Portscan Finished: Scanned 150 ports, 0 ports were in state closed
All scans completed, exiting
```

2.2. Using Knockpy to scan



```
| 184.16.131.7. | 200 | gener tickething.cn.com | cloudflare | cloudfl
```

2.3. Using amass to scan

3. Scanning Vulnerability

3.1. Scan with Nmap

```
(user⊕ user)-[~]
$ sudo nmap -sS 104.16.121.74
[sudo] password for user:
Starting Nmap 7.93 ( https://nmap.org ) at 2023-10-30 07:25 PDT
Nmap scan report for 104.16.121.74
Host is up (1.3s latency).
Not shown: 996 filtered tcp ports (no-response)
PORT STATE SERVICE
25/tcp open smtp
80/tcp open http
443/tcp open https
8080/tcp open http-proxy
Nmap done: 1 IP address (1 host up) scanned in 348.17 seconds
```

3.2. Scan with Nikto

- Retrieved access control allows origin header.
- Cloudflare trace CGI found which may leak some system information.

3.3. Scan with Rapidscan

XSS Protection is not present.

```
[ < 3m] Deploying 8/80 | WhatWeb - Checks for X-XSS Protection Header

Scan Completed in 19s

Vulnerability Threat Level

medium X-XSS Protection is not Present

Vulnerability Definition

As the target is tacking this header, older browsers will be prone to Reflected XSS attacks.

Vulnerability Remediation

Modern browsers does not face any issues with this vulnerability (missing headers). However, older browsers are strongly recommended to be upgraded.
```

Subdomains discovered with Dmitry.



Found subdomains with fierce.

```
[ o < 75m] Deploying 20/80 | Fierce Subdomains Bruter - Brute Forces Subdomain Discovery.

Scan Completed in 1m 27s bus come443 hucehadd

Vulnerability Threat Level

Five medium Found Subdomains with Fierce.

Vulnerability Definition

Attackers may gather more information from subdomains relating to the parent domain. Attackers may even find other services from the subdomains and try to learn the architecture of the target. There are even chances for the attacker to find vulnerabilities as the attack surface gets larger with more subdomains discovered.

Vulnerability Remediation

Western Surface gets larger with more subdomains discovered.

Vulnerability Remediation Surface gets larger with more subdomains discovered.

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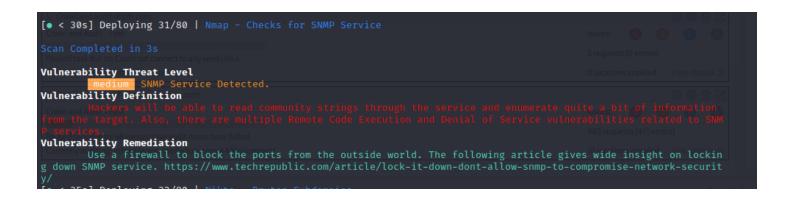
Vulnerability Remediation Surface gets larger with more subdomains discovered.

Vulnerability Remediation Surface gets larger with more subdomains discovered.

Vulnerability Remediation Surface gets larger with more subdomains discovered.
```

• Secure Client initialized renegotiation is acquired.

SNMP Service Detected



RDP server Detected over UDP

```
| Completed in 3s | Deploying 55/80 | Nmap - Checks for Remote Desktop Service over UDP | Description of the Condition of the
```

4. Vulnerability description

• XSS Protection is Not Present:

 The absence of the "X-XSS-Protection" header suggests a vulnerability to cross-site scripting (XSS) attacks, where malicious scripts can be injected into web pages, potentially compromising user data and security.

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Subdomains Discovered with Dmitry:

Subdomains were discovered using the tool Dmitry, which potentially expands the attack surface, exposing additional points of vulnerability and potential unauthorized access.

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Found Subdomains with Fierce:

Subdomains were discovered using the tool Fierce, which further uncovers the website's subdomains, potentially revealing additional entry points or potential vulnerabilities.

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• Secure Client-Initiated Renegotiation is Acquired:

 The acquisition of Secure Client-Initiated Renegotiation may introduce security risks if not configured correctly, potentially facilitating man-in-the-middle attacks.

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SNMP Service Detected:

 The presence of the Simple Network Management Protocol (SNMP) service may expose sensitive information and configuration details, potentially posing a security risk if not adequately secure.

0

RDP Server Detected Over UDP:

 Detecting an RDP (Remote Desktop Protocol) server operating over UDP (User Datagram Protocol) may present security concerns, as it might expose the server to various security risks if not properly configured.

5. Affected components.

- Web application (XSS).
- Domain and subdomains.
- Client-server communication.
- Network devices (SNMP).
- RDP servers (UDP).

6. Impact assessment

- XSS: Data theft, malicious script execution.
- Subdomains: Information exposure.
- Client-server: Data interception
- SNMP: Unauthorized access
- RDP (UDP): Vulnerabilities in remote access

	C 4		1
/.	Steps	to	reproduce.

None.

8. Proof of concept (if applicable)

None.

9. Proposed mitigation or fix

- XSS protection, input validation.
- Subdomain monitoring.
- Secure communication setup.
- SNMP access restrictions.
- Secure RDP configuration.

10. Summary

Founded potential security vulnerabilities are related to XSS protection, subdomains, secure client-server communication, SNMP services, and RDP servers. The impact and necessary steps to address these issues would require further investigation and may vary depending on the specific context and systems in question. Appropriate security measures and patches should be applied to mitigate these vulnerabilities.