



**State of Alaska Cyber Security &  
Critical Infrastructure  
Cyber Advisory**

**April 04, 2016**

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**ADVISORY NUMBER:**

SA2016-055

**DATE(S) ISSUED:**

04/04/2016

**SUBJECT:**

Multiple Vulnerabilities in PHP Could Allow For Arbitrary Code Execution

**OVERVIEW:**

Multiple vulnerabilities have been discovered in PHP, the most severe of which could allow an attacker to potentially execute arbitrary code. PHP is a programming language originally designed for use in web-based applications with HTML content. PHP supports a wide variety of platforms and is used by numerous web-based software applications. Successfully exploiting these issues could allow remote attackers to execute arbitrary code in the context of the affected application.

**THREAT INTELLIGENCE:**

There are currently no reports of these vulnerabilities being exploited in the wild. There is known proof-of-concept code for these vulnerabilities.

**SYSTEM AFFECTED:**

- PHP 7 prior to 7.0.5
- PHP 5.6 prior to 5.6.20

- PHP 5.5 prior to 5.5.34

## **RISK:**

### **Government:**

- Large and medium government entities: **High**
- Small government entities: **High**

### **Businesses:**

- Large and medium business entities: **High**
- Small business entities: **High**

### **Home users: Low**

## **TECHNICAL SUMMARY:**

PHP has released updates that address multiple vulnerabilities, the most severe of which, could allow for arbitrary code execution. These vulnerabilities include:

### PHP Prior to 7.0.5

- Bug 71756 (Call-by-reference widens scope to uninvolved functions when used in switch).
- Bug 71729 (Possible crash in zend\_bin\_strtod, zend\_oct\_strtod, zend\_hex\_strtod).
- Bug 71695 (Global variables are reserved before execution).
- Bug 71629 (Out-of-bounds access in php\_url\_decode in context php\_stream\_url\_wrap\_rfc2397).
- Bug 71622 (Strings used in pass-as-reference cannot be used to invoke C::\$callable()).
- Bug 71596 (Segmentation fault on ZTS with date function (setlocale)).
- Bug 71535 (Integer overflow in zend\_mm\_alloc\_heap()).
- Bug 71470 (Leaked 1 hashtable iterators).
- Bug 71575 (ISO C does not allow extra ';' outside of a function).
- Bug 71724 (yield from does not count EOLs).
- Bug 71767 (ReflectionMethod::getDocComment returns the wrong comment).
- Bug 71806 (php\_strip\_whitespace() fails on some numerical values).
- Bug 71624 (^ php -R` (PHP\_MODE\_PROCESS\_STDIN) is broken).
- Bug 69953 (Support MKCALENDAR request method).
- Bug 71694 (Support constant CURLM\_ADDED\_ALREADY).

- Bug 71635 (DatePeriod::getEndDate segfault).
- Bug 71527 (Buffer over-write in finfo\_open with malformed magic file).
- Bug 71536 (Access Violation crashes php-cgi.exe).
- Bug 71906 (AddressSanitizer: negative-size-param (-1) in mbfl\_strcut).
- Bug 47803, #69526 (Executing prepared statements is succesfull only for the first two statements).
- Bug 71659 (segmentation fault in pcre running twig tests).
- Bug 54648 (PDO::MSSQL forces format of datetime fields).
- Bug 71625 (Crash in php7.dll with bad phar filename).
- Bug 71317 (PharData fails to open specific file).
- Bug 71860 (Invalid memory write in phar on filename with \0 in name).
- Fixed crash when advancing (except step) inside an internal function.
- Bug 71683 (Null pointer dereference in zend\_hash\_str\_find\_bucket).
- Bug 71704 (php\_snmp\_error() Format String Vulnerability).
- Bug 71617 (private properties lost when unserializing ArrayObject).
- Bug 71660 (array\_column behaves incorrectly after foreach by reference).
- Bug 71798 (Integer Overflow in php\_raw\_url\_encode).

#### PHP Prior to 5.6.20

- Bug 69953 (Support MKCALENDAR request method).
- Bug 71596 (Segmentation fault on ZTS with date function (setlocale)).
- Bug 71694 (Support constant CURLM\_ADDED\_ALREADY).
- Bug 71635 (DatePeriod::getEndDate segfault).
- Bug 71527 (Buffer over-write in finfo\_open with malformed magic file).
- Bug 71906 (AddressSanitizer: negative-size-param (-1) in mbfl\_strcut).
- Bug 47803, #69526 (Executing prepared statements is succesfull only for the first two statements).
- Bug 71860 (Invalid memory write in phar on filename with \0 in name).
- Bug 54648 (PDO::MSSQL forces format of datetime fields).

- Bug 71625 (Crash in php7.dll with bad phar filename).
- Bug 71504 (Parsing of tar file with duplicate filenames causes memory leak).
- Bug 71704 (php\_snmp\_error() Format String Vulnerability).
- Bug 71798 (Integer Overflow in php\_raw\_url\_encode).

#### PHP Prior to 5.5.34

- Fixed Bug 71527 (Buffer over-write in finfo\_open with malformed magic file).
- Fixed Bug 71906 (AddressSanitizer: negative-size-param (-1) in mbfl\_strcut).
- Fixed Bug 71860 (Invalid memory write in phar on filename with \0 in name).
- Fixed Bug 71704 (php\_snmp\_error() Format String Vulnerability).
- Fixed Bug 71798 (Integer Overflow in php\_raw\_url\_encode).

#### **RECOMMENDATIONS:**

We recommend the following actions be taken:

- Upgrade to the latest version of PHP immediately, after appropriate testing.
- Apply the principle of Least Privilege to all systems and services.
- Verify no unauthorized system modifications have occurred on system before applying patch.
- Remind users not to visit websites or follow links provided by unknown or untrusted sources.
- Do not open email attachments from unknown or untrusted sources.
- Limit user account privileges to only those required.

#### **REFERENCES:**

##### **PHP:**

<http://php.net/ChangeLog-5.php#5.5.34>

<http://php.net/ChangeLog-5.php#5.6.20>

<http://php.net/ChangeLog-7.php#7.0.5>