HPUX Possible httpd Hang due to CGIScriptTimeout

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Environment

- HP-UX Apache-based Web Server 2.x
- mod_cgid configuration
- CGIScriptTimeoutEnabled is on

Issue

httpd may hang in processing alarm_handler() when CGIScriptTimeout is used.

Cause

httpd may hang due to CGIScriptTimeout, causing a cgi to timeout and log an error message in alarm_handler() while the interrupted process context is in a specific point of a specific libc call.

This logging of an error message in a signal context causes a race condition between the signal handler to acquire a mutex that the interrupted context is also acquiring, resulting in httpd hang.

Probability to encounter such an issue is low, since the signal handler is called every 5sec, a cgi need to expire its running and the race window of the interrupted context is small.

It had never been reproduced intentionally as of now.

Resolution

Starting with Apache 2.2.29, CGIDScripTimeout is available and do not use a signal handler to execute, so do not have any risk to cause the same issue.

The difference between CGIDScriptTimeout and CGIScriptTimeout is the first one is a IO max waiting time, while the second is a max running time.

Directive Timeout and CGIDScriptTimeout does not cause the same issue as CGIScriptTimeout.

Note: The support for Apache 2.2.x has already been ended on October 31, 2017.