

Bring WordPress to *Life* with the Heartbeat API

WordCamp Phoenix 2014

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Who Am I?

- *Mike Schroder*, a.k.a *DH-Shredder*, a.k.a. *@GetSource*
- Third Culture Kid, enjoy Coffee & Sailing
- WordPress Core Rep and WP-CLI Contributor
- Happy DreamHost Employee

WAT is *Heartbeat*?

*Realtime** Bidirectional
communication via AJAX.

Heartbeat is Polling.

15-30 seconds by default.
120 seconds when inactive.

Suspend after *20 minutes* inactive.

WORDPRESS CORE



Y U NO USE WEBSOCKETS?

quickmeme.com

Born from *need* for 3.6+

Posts

[Add New](#)[Screen Options](#)[Help](#)[All \(23\)](#) | [Published \(15\)](#) | [Drafts \(8\)](#) Search Posts[Bulk Actions](#)[Apply](#)[Show all dates](#)[View all categories](#)[Filter](#)

23 items



1

of 2



☐	Title	Author	Categories	Tags		Date
	This Post is Locked. admin is currently editing	Other Person	Uncategorized	—	0	12 hours ago Published
☐	WebM Post	admin	Uncategorized	—	1	2013/07/01 a

This Post is Locked.

Permalink: <http://localhost/WordPress/2013/08/this-post-is-locked/> [Edit](#)

[View Post](#)

[Get Shortlink](#)

[Add Media](#)

Visual

Text

B *I* ABC

This is a locked



This content is currently locked. If you take over, admin will be blocked from continuing to edit.

[Go back](#)

[Preview](#)

[Take over](#)

Publish

[Status: Published](#)

[Visibility: Public](#)

Published on: Aug

59 [Edit](#)

[Move to Trash](#)

Format

☒ [Standard](#)

☐ [Aside](#)

☐ [Audio](#)

☐ [Chat](#)

☐ [Gallery](#)

This Post is Locked.

Permalink: <http://localhost/WordPress/2013/08/this-post-is-locked/> [Edit](#) [View Post](#) [Get Shortlink](#)

 Add Media

Visual Text

B *I* ABC          

This is a locked Post that



Other Person has taken over and is currently editing.

[All Posts](#)

Publish

 Status: **Published**

 Visibility: **Public**

 Published on: [Edit](#)

[Move to Trash](#)

Format

☒  Standard

☐  Aside

☐  Audio

1 + New View Post

Edit Post [Add New](#)

This Post is Locked.

Permalink: <http://localhost/Word>

[Add Media](#)

B *I* ABC ☰ ☷ “ ☰

This post is really important, a

I've been working on it for days

This means that it's possible m

Path: p

Word count: 39

[Screen Options](#)

[Publish](#)

[Shortlink](#)

[Text](#)

[Status: Published](#)

[Visibility: Public](#) [Edit](#)

[Published on: Aug 16, 2013](#) [Edit](#)

[Move to Trash](#)

[Format](#)

- ☒ Standard
- ☐ Aside
- ☐ Audio
- ☐ Chat
- ☐ Gallery
- ☐ Image
- ☐ Link
- ☐ Custom

[Saving Draft...](#) Last edited by Other Person on August 16, 2013 at 7:59 pm



Session expired. Please log in again. You will not move away from this page.

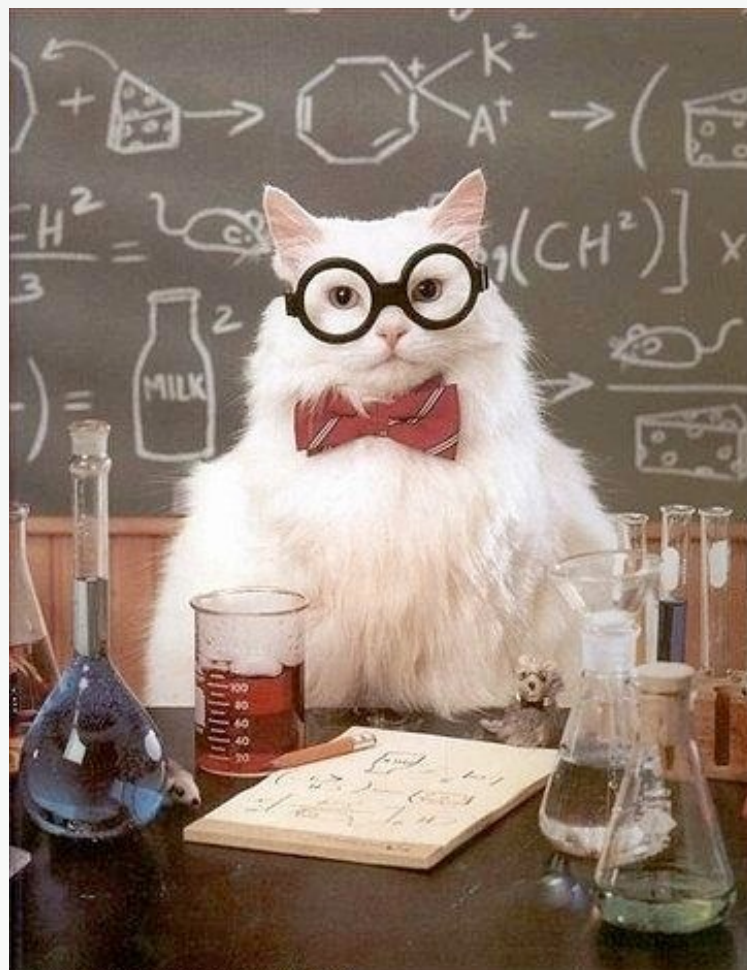
Username

Password

☐ Remember Me [Log In](#)

How does it *work*?

EXPERIMENTAL *WARNING!*



JS Trigger Flow

- > heartbeat-send
- > heartbeat-tick
- /> heartbeat-error

(wp-includes/js/heartbeat.js)

PHP Filter/Action Flow

- > heartbeat_received
 - > heartbeat_send
- > heartbeat_tick (action)

(wp-admin/includes/ajax-actions.php)

Direct from core.

```
if ( ! empty( $_POST['data'] ) ) {  
    $data = (array) $_POST['data'];  
    $response = apply_filters( 'heartbeat_received', $response, $data,  
                               $screen_id );  
}  
  
$response = apply_filters( 'heartbeat_send', $response, $screen_id );  
  
// Allow the transport to be replaced with long-polling easily  
do_action( 'heartbeat_tick', $response, $screen_id );  
  
// Send the current time according to the server  
$response['server_time'] = time();  
  
wp_send_json($response);
```

*Set **Baseline** Tick Rate*

Filter: heartbeat_settings
\$settings['**interval**']=<seconds>

*Temporarily **Change** Tick Rate*

wp.heartbeat.interval(<enum>)

Values (change lasts for 2.5 minutes):
5, 15, 30, or 60 (Seconds)

Now automatically runs on
admin, even without *data[]*

Check User Status

wp.heartbeat.hasFocus()

Check Connection Status

wp.heartbeat.hasConnectionError()

Related Triggers:

heartbeat-connection-lost

heartbeat-connection-restored

How can I *use* it?

Listen, then Return.

```
<?php
/*
Plugin Name: Heartbeat Comment Update
Description: Updates Comment Count on Dashboard with Heartbeat.
Author: Andrew Ozz, Mike Schroder
Version: 0.2
Author URI: http://www.getsource.net
*/

add_filter( 'heartbeat_received', 'wc_heartbeat_comment_count', 10, 3 );
function wc_heartbeat_comment_count( $response, $data, $screen_id ) {

    // ... ( Read Data, Edit Response )

    // Pass along filtered response.
    return $response;
}
```

Retrieve Data

```
// Check if we are on the right screen and data is requested.
if ( $screen_id == 'dashboard' &&
    isset( $data['wc-comment-heartbeat'] ) ) {

    // Grab our data
    $num_comments = wp_count_comments();

    // Add data in an unique array key -- prefix!
    $response['wc-comment-count'] = array(
        'comment-count' => number_format_i18n($num_comments->total_comments),
        'pending-count' => number_format_i18n($num_comments->moderated),
        'comment-mod-count' => number_format_i18n($num_comments->moderated),
        'spam-count' => number_format_i18n($num_comments->spam),
        'trash-count' => number_format_i18n($num_comments->trash),
    );
}

// Pass along filtered response
return $response;
}
```

Enqueue Script

```
add_action( 'admin_enqueue_scripts', 'wc_heartbeat_comment_script_enqueue' );
function wc_heartbeat_comment_script_enqueue( $hook_suffix ) {

    // Load this script only in the dashboard.
    if ( 'index.php' != $hook_suffix )
        return;

    // Make sure the JS part of the Heartbeat API is loaded.
    wp_enqueue_script( 'heartbeat' );

    // Output the JavaScript we need.
    add_action( 'admin_print_footer_scripts', 'wc_heartbeat_comment_js', 20 );

}
```

Request Data

```
function wc_heartbeat_comment_js() {  
    ?>  
    <script>  
    jQuery(document).ready( function($) {  
  
        // Request comment count, using prefixed custom event.  
        $(document).on( 'heartbeat-send.wp-comment-count',  
            function( e, data ) {  
  
                // For one-time send, use:  
                // wp.heartbeat.enqueue( 'item', 'value' );  
                data['wc-comment-heartbeat'] = 'count';  
  
                // Speed up heartbeat for faster results.  
                // Only has to be called every 2.5 minutes.  
                window.wp.heartbeat.interval(15);  
  
                // ...  
            }  
        );  
    }  
};
```


Receive Data

```
// ...
// Listen for the tick custom event.
}).on( 'heartbeat-tick.wc-comment-count', function( e, data ) {

    // Double-check we have the data we're listening for
    if ( ! data['wc-comment-count'] )
        return;

    // Replace all of the comment counts
    $.each( data['wc-comment-count'], function( key, value ) {
        var replaced = $( '.' + key ).html().replace(/(.*)\d+(.*)/g,
                                                    "$1" + value + "$2");
        $( '.' + key ).html( replaced );
    });

    // Initial connection to cement our new interval timing
    window.wp.heartbeat.connectNow();
});
});
</script>
<?php
}
```

This is just a *start*.

Resources!

- core.trac.wordpress.org/browser/tags/3.8/src/wp-includes/js/heartbeat.js
- gist.github.com/getsources/6254495
- pippinsplugins.com/using-the-wordpress-heartbeat-api/
- wp.tutsplus.com/tutorials/creative-coding/the-heartbeat-api-getting-started/