



Undertow

UNDERTOW-1935

## buffer leak on incoming websocket PONG message

### Details

Type: Bug  
Priority: Critical  
Affects Version/s: None  
Component/s: None  
Labels: None  
Steps to Reproduce:

Status: RESOLVED [\(View Workflow\)](#)  
Resolution: Done  
Fix Version/s: 2.2.10.Final, 2.0.40.Final

1. Create webapp with the following class:

```
package test;

import java.io.IOException;
import java.nio.ByteBuffer;
import java.nio.charset.StandardCharsets;
import java.util.Collections;
import java.util.IdentityHashMap;
import java.util.Set;

import javax.servlet.ServletContextEvent;
import javax.servlet.ServletContextListener;
import javax.servlet.annotation.WebListener;
import javax.websocket.CloseReason;
import javax.websocket.DeploymentException;
import javax.websocket.Endpoint;
import javax.websocket.EndpointConfig;
import javax.websocket.Session;
import javax.websocket.server.ServerContainer;
import javax.websocket.server.ServerEndpointConfig;
import javax.websocket.server.ServerEndpointConfig.Configurator;

/**
 * Application Lifecycle Listener implementation class PongLeakSample
 */
```

2. Deploy webapp to wildfly (with standalone default configuration)

3. Open any http page in web browser, open browser console and execute the following script several times to open several websocket connections (change localhost:8080 to wildfly location and test to war file name):

```
var ws = new WebSocket('ws://localhost:8080/test/');ws.onopen=console.log;ws.onmessage=console.log;ws.onclose=console.log;ws.onerror=console.log;
```

4. Monitor the java.nio:type=BufferPool,name=direct mbean, MemoryUsed attribute will grow until XNIO001007 errors in server.log; or alternatively setup byte buffer pool (with limited Buffer Size, small Max Pool Size Leak Detection Percent = 100) usage for websocket connections in hal management console, trigger gc and inspect server.log

Workaround:

Workaround Exists

Workaround Description: Add the following code to javax.websocket.Endpoint.onOpen(Session, EndpointConfig) implementation:

```
session.addMessageHandler(PongMessage.class, new MessageHandler.Whole<PongMessage>() {
    public void onMessage(PongMessage message) {
        // empty
    }
});
```

Git Pull Request: <https://github.com/undertow-io/undertow/pull/1226>

### Description

If websocket endpoint did not added the handler for PongMessage and sends the PING messages.

On unconfigured wildfly it leads to "XNIO001007: A channel event listener threw an exception: java.lang.OutOfMemoryError: Direct buffer memory" errors in server.log and server eventually stops servicing any requests (not only websocket connections).

After configuring Byte Buffer Pool with Leak detection percent = 100, every gc leads to the following messages in log (one message per single PONG frame):

#### server.log

```
2021-07-30 23:04:28,400 ERROR [stderr] (Finalizer) java.lang.Throwable: Buffer leak detected
2021-07-30 23:04:28,400 ERROR [stderr] (Finalizer) at io.undertow.server.DefaultByteBufferPool$LeakDetector.<init>(DefaultByteBufferPool.java:314)
2021-07-30 23:04:28,400 ERROR [stderr] (Finalizer) at io.undertow.server.DefaultByteBufferPool$LeakDetector.<init>(DefaultByteBufferPool.java:308)
2021-07-30 23:04:28,400 ERROR [stderr] (Finalizer) at io.undertow.server.DefaultByteBufferPool$DefaultPooledBuffer.<init>(DefaultByteBufferPool.java:254)
2021-07-30 23:04:28,400 ERROR [stderr] (Finalizer) at io.undertow.server.DefaultByteBufferPool.allocate(DefaultByteBufferPool.java:157)
2021-07-30 23:04:28,400 ERROR [stderr] (Finalizer) at io.undertow.websockets.core.BufferedBinaryMessage.read(BufferedBinaryMessage.java:90)
2021-07-30 23:04:28,400 ERROR [stderr] (Finalizer) at io.undertow.websockets.core.AbstractReceiveListener.readBufferedBinary(AbstractReceiveListener.java:124)
2021-07-30 23:04:28,400 ERROR [stderr] (Finalizer) at io.undertow.websockets.core.AbstractReceiveListener.bufferFullBinary(AbstractReceiveListener.java:94)
2021-07-30 23:04:28,400 ERROR [stderr] (Finalizer) at io.undertow.websockets.core.AbstractReceiveListener.onPong(AbstractReceiveListener.java:66)
2021-07-30 23:04:28,400 ERROR [stderr] (Finalizer) at io.undertow.websockets.core.AbstractReceiveListener.handleEvent(AbstractReceiveListener.java:46)
2021-07-30 23:04:28,400 ERROR [stderr] (Finalizer) at io.undertow.websockets.core.AbstractReceiveListener.handleEvent(AbstractReceiveListener.java:33)
2021-07-30 23:04:28,400 ERROR [stderr] (Finalizer) at org.xnio.ChannelsListeners.invokeChannelListener(ChannelListeners.java:92)
2021-07-30 23:04:28,400 ERROR [stderr] (Finalizer) at io.undertow.server.protocol.framed.AbstractFramedChannel$FrameReadListener.handleEvent(AbstractFramedChannel.java:952)
2021-07-30 23:04:28,400 ERROR [stderr] (Finalizer) at io.undertow.server.protocol.framed.AbstractFramedChannel$FrameReadListener.handleEvent(AbstractFramedChannel.java:932)
2021-07-30 23:04:28,400 ERROR [stderr] (Finalizer) at org.xnio.ChannelsListeners.invokeChannelListener(ChannelListeners.java:92)
2021-07-30 23:04:28,400 ERROR [stderr] (Finalizer) at org.xnio.conduits.ReadReadyHandler$ChannelListenerHandler.readReady(ReadReadyHandler.java:66)
2021-07-30 23:04:28,400 ERROR [stderr] (Finalizer) at org.xnio.nio.NioSocketConduit.handleReady(NioSocketConduit.java:89)
2021-07-30 23:04:28,400 ERROR [stderr] (Finalizer) at org.xnio.nio.WorkerThread.run(WorkerThread.java:591)
```

### Activity

There are no comments yet on this issue.

### People

Assignee:

Flavia Rainone

Reporter:

Andrew Marinchuk (Inactive)

Votes:

0 Vote for this issue

Watchers:

▼ Dates

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Created:  
2021/07/30 9:25 PM

Updated:  
2021/10/24 6:32 AM

Resolved:  
2021/08/10 1:55 PM