**SUMMARY**

A concurrency bug in Tomcat Fop - Now in Jira, 0.95.

**DETAILS**

Some details can also be found at: https://bz.apache.org/bugzilla/show\_bug.cgi?id=46211

This bug is due to a data race.

Use a single reference to the cache during lookup (the cache array could be concurrently replaced).

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| Thread1 (ResourceCache.java) | Thread2 (ResourceCache.java) |
| public boolean isFailedFont(String embedUrl, long lastModified) {  if (failedFontMap.containsKey(embedUrl)) {  synchronized (changeLock) {  long failedLastModified = ((Long)failedFontMap.get(embedUrl)).longValue();  if (lastModified != failedLastModified) {  // this font has been changed so lets remove it  // from failed font map for now  failedFontMap.remove(embedUrl);  changed = true;  }  }  return true;  }  return false;  } | public boolean isFailedFont(String embedUrl, long lastModified) {  if (failedFontMap.containsKey(embedUrl)) {  synchronized (changeLock) {  long failedLastModified = ((Long)failedFontMap.get(embedUrl)).longValue();  if (lastModified != failedLastModified) {  // this font has been changed so lets remove it  // from failed font map for now  failedFontMap.remove(embedUrl);  changed = true;  }  }  return true;  }  return false;  } |
| HashMap.java  transient volatile int modCount;  transient int size;  public boolean containsKey(Object key) {  return getEntry(key) != null;  }  Entry<K,V> getEntry(Object key) {  int hash = (key == null) ? 0 : hash(key.hashCode());  for (Entry<K,V> e = table[indexFor(hash, table.length)];  e != null; e = e.next) {  Object k;  if (e.hash == hash &&  ((k = e.key) == key || (key != null && key.equals(k))))  return e;  }  return null;  }  public V remove(Object key) {  Entry<K,V> e = removeEntryForKey(key);  return (e == null ? null : e.value);  }  final Entry<K,V> removeEntryForKey(Object key) {  int hash = (key == null) ? 0 : hash(key.hashCode());  int i = indexFor(hash, table.length);  Entry<K,V> prev = table[i];  Entry<K,V> e = prev;  while (e != null) {  Entry<K,V> next = e.next;  Object k;  if (e.hash == hash &&  ((k = e.key) == key || (key != null && key.equals(k)))) {  modCount++;  size--;  if (prev == e)  table[i] = next;  else  prev.next = next;  e.recordRemoval(this);  return e;  }  prev = e;  e = next;  }  return e;  } | HashMap.java  transient volatile int modCount;  transient int size;  public boolean containsKey(Object key) {  return getEntry(key) != null;  }  Entry<K,V> getEntry(Object key) {  int hash = (key == null) ? 0 : hash(key.hashCode());  for (Entry<K,V> e = table[indexFor(hash, table.length)];  e != null; e = e.next) {  Object k;  if (e.hash == hash &&  ((k = e.key) == key || (key != null && key.equals(k))))  return e;  }  return null;  }  public V remove(Object key) {  Entry<K,V> e = removeEntryForKey(key);  return (e == null ? null : e.value);  }  final Entry<K,V> removeEntryForKey(Object key) {  int hash = (key == null) ? 0 : hash(key.hashCode());  int i = indexFor(hash, table.length);  Entry<K,V> prev = table[i];  Entry<K,V> e = prev;  while (e != null) {  Entry<K,V> next = e.next;  Object k;  if (e.hash == hash &&  ((k = e.key) == key || (key != null && key.equals(k)))) {  modCount++;  size--;  if (prev == e)  table[i] = next;  else  prev.next = next;  e.recordRemoval(this);  return e;  }  prev = e;  e = next;  }  return e;  } |
| 0-lock | 0-lock |

java.lang.NullPointerException at org.apache.fop.fonts.FontCache.isFailedFont(FontCache.java:294) at org.apache.fop.fonts.autodetect.FontInfoFinder.find(FontInfoFinder.java:179) at org.apache.fop.render.PrintRendererConfigurator.addFontInfoListFromFileList(PrintRendererConfigurator.java:233) at org.apache.fop.render.PrintRendererConfigurator.buildFontListFromConfiguration(PrintRendererConfigurator.java:140) at org.apache.fop.render.PrintRendererConfigurator.configure(PrintRendererConfigurator.java:95) at org.apache.fop.render.pdf.PDFRendererConfigurator.configure(PDFRendererConfigurator.java:71) at org.apache.fop.render.RendererFactory.createRenderer(RendererFactory.java:187) at org.apache.fop.area.RenderPagesModel.<init>(RenderPagesModel.java:68) at org.apache.fop.area.AreaTreeHandler.setupModel(AreaTreeHandler.java:127) at org.apache.fop.area.AreaTreeHandler.<init>(AreaTreeHandler.java:102) at org.apache.fop.render.RendererFactory.createFOEventHandler(RendererFactory.java:224) at org.apache.fop.fo.FOTreeBuilder.<init>(FOTreeBuilder.java:100) at org.apache.fop.apps.Fop.createDefaultHandler(Fop.java:100) at org.apache.fop.apps.Fop.<init>(Fop.java:78) at org.apache.fop.apps.FopFactory.newFop(FopFactory.java:247)