@Contended @since 9

A few months ago, I was trying to figure out how to use @Contended in Java 9. I was thwarted. Then, whilst preparing for [this month's webinar](https://javaspecialists.teachable.com/p/happy-hour-season-01), I finally managed. Since it is highly likely that I will forget how, I thought it would be useful to write it down as a newsletter. That way, some time in the future, when I "google" "@Contended Java 9" I will hopefully find my article :-)

A little bit of background re @Contended. It is an annotation added in Java 8 to pad fields. The reason why this can be helpful is to avoid false sharing in cache lines. @Contended is a sun.misc annotation, which means that we should ideally not use it in our code. There are techniques for padding without resorting to @Contended, using some weird tricks to guarantee that the padding is in the correct place. See Blackhole class in JMH.

This newsletter is not going to answer the question of "why?" we would want to make some fields @Contended, nor the questions "which?" and "when?". I'm assuming you know this already. If you don't, I'd suggest you try [Extreme Java - Concurrency Performance by Heinz Kabutz](https://www.javaspecialists.eu/courses/xj-conc.jsp), [Mechanical Sympathy Blog by Martin Thompson](https://mechanical-sympathy.blogspot.com/) and [Psychosomatic, Lobotomy, Saw Blog by Nitsan Wakart](http://psy-lob-saw.blogspot.com/). The only question I'm going to answer is "how?" do you do that in Java 9?

In Java 8, we could mark a field as @Contended simply like so:

**public class** Cell {

**@sun.misc.Contended**

**private volatile long** value;

}