Introduction

We now turn our attention to a couple of more advanced topics. In this chapter, we will explore some of the differences between 32-bit and 64-bit applications from a memory perspective, and we'll see how this affects the size of our objects and what that means to our memory footprint. We will also review some recent changes to the way the CLR deals with memory when the memory caps are lifted.

We'll look at the evolution of the garbage collector (GC), and how problems in each version led to the changes in the next. We have several versions and variations of the .NET framework (and its accompanying GC) to choose from, so we'll review guidelines to help you make the right choice for your application.

One of the most exciting new features introduced in version 4.0 of the framework is Garbage Collection Notifications, and we'll step through how to set up notifications, as well as exploring some potential applications. This is a very new concept, and best applications are still coming to light, so expect this information to evolve in the future.

Finally, we'll turn our attention to marshaling and some of the memory challenges introduced when manipulating unmanaged memory.