

Avoid boxing and unboxing

System.Collections

System.Collections.Specialized

- ArrayList
- CollectionBase
- DictionaryBase
- HashTable
- Queue
- SortedList
- Stack
- HybridDictionary
- ListDictionary
- NameObjectCollectionBase
- OrderedDictionary

All these classes use object arrays internally for storing data

System.Data

- DataSet
- DataTable
- DataRow

DataRow uses object arrays internally for storing data

System.Collections.Generic

- Dictionary<TKey, TValue>
- HashSet<T>
- LinkedList<T>
- List<T>
- Queue<T>
- SortedDictionary<TKey, TValue>
- SortedList<T>
- SortedSet<T>
- Stack<T>

Generic collections use typed arrays for storing data

System.Data

- DataReader

DataReader reads data directly without casting to object

Avoid boxing and unboxing

- Casting object variables to value types introduces an **UNBOX** instruction in intermediate code
- Storing value types in object variables introduces a **BOX** instruction in intermediate code
- My code with **BOX** and **UNBOX** runs 5 times slower than the same code without these 2 instructions
- **Avoid** casting to and from object in mission critical code
- **Avoid** using non-generic collections in mission critical code
- **Avoid** using DataTables in mission critical code, but only if you perform many operations on the same data table object