**Java Object Serialization**

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Serialization is the process of converting the state information of an object into a form that can be stored or transmitted. Generally, an object is stored in a storage medium, such as a file or a memory buffer. During network transmission, it can be in byte or XML format.; The byte or XML format can be restored to a completely equal object, this reverse process is also called deserialization.

In Java, we can create objects in a variety of ways, and we can reuse them as long as they are not recycled. However, the objects we created all exist in the heap memory of the JVM, and these objects may exist only when the JVM is running. Once the JVM stops, these objects will disappear.

Object serialization is a built-in method of object persistence in the Java language. Through object serialization, the state information of the object can be stored in a byte array, and the byte array can be deserialized when needed. Converted to objects, the serialization of objects can be easily converted between active objects and byte arrays in the JVM.

Object serialization can realize distributed objects. The main application is for example: RMI uses object serialization to run services on remote hosts, just like when running objects on the local machine. Also “Java object serialization not only retains the data of an object, but also recursively saves the data of each object referenced by the object. The entire object hierarchy can be written to a byte stream, which can be saved in a file or passed on a network connection. Object serialization can be used to "deep copy" the object, that is, copy the object itself and the referenced object itself. Serializing an object may result in the entire sequence of objects.” (Java)

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