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Java NIO - Memory-Mapped Files with

ry-Mapped Files 3uffer

If you know how java IO works at lower level, then you will be aware of buffer handling, memory paging and other such concepts. For conventional file I/O, in which user processes issue read() and write() system calls to transfer data, there is almost always one or more copy operations to move the data between these filesystem pages in kernel space and a memory area in user space. This is because there is not usually a one-to-one alignment between filesystem pages

al type of I/O operation supported by most ses to take maximum advantage of the pageely avoid buffer copies. This is called **memory**things here around memory-mapped files.

establish a virtual memory mapping from user pages. With a memory-mapped file, you can I that you can access it by simply treating it as a plifies the code you write in order to modify the



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napped files, we start with a RandomAccessFile, byte buffers are created via the nds the ByteBuffer class with operations that are mapped byte buffer and the file mapping that it If is garbage-collected. Note that you must the region that you want to map in the file; this aller regions of a large file.

```
httpows Exception

AccessFile("howtodoinjava.dat", "rw")
hannel().map(FileChannel.MapMode.READ_WRITE, 0,
ing");
```

128 MB long, which is probably larger than the post be accessible all at once because only portions rts are swapped out. This way a very large file (up

s can be writable or read-only. The first two Id MapMode.READ_WRITE, are fairly obvious. In go to be read-only or to allow modification of the IVATE, indicates that you want a copy-on-write is you make via put() will result in a private copy instance can see. No changes will be made to will be lost when the buffer is garbage collected. Ents any changes to the underlying file, you must a MapMode.PRIVATE mapping. This is fer object to allow put()s.

od. Once established, a mapping remains in effect

ge collected. Also, mapped buffers are not tied to associated FileChannel does not destroy the itself breaks the mapping.

size, but the file it's mapped to is elastic.

nile the mapping is in effect, some or all of the
efined data could be returned, or unchecked
ul about how files are manipulated by other threads
nemory-mapped.

-Mapped Files

es over normal I/O:

s memory, so there is no need to issue read() or

ped memory space, page faults will be generated from disk. If the user modifies the mapped automatically marked as dirty and will be te the file.

poperating system will perform intelligent caching premory according to system load. no buffer copying is ever needed. ut consuming large amounts of memory to copy

ped File

e below code template:

```
"bigFile.xls";
) throws Exception
e);
```

```
ide
idomAccessFile(file, "r").getChannel();
ising channel.map() operation
innel.map(FileChannel.MapMode.READ_ONLY, 0, file
as if it were loaded in memory.
id()); //prints false
iy()); //Get the size based on content size of
buffer the way you like.
); i++)
ir.get()); //Print the content of file
```

√apped File

ped IO, use below code template:

```
"test.txt";
) throws Exception {
!);
! a new file

!ode
!domAccessFile(file, "rw").getChannel();

using channel.map() operation
!nnel.map(FileChannel.MapMode.READ_WRITE, 0, 409)
!hods
!tBytes());
```

omments section.

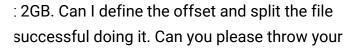
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va.com in late 2012. I love computers, 1g problems everyday. A family guy with fun 2ebook, Twitter and Google Plus.



42 pm

ng a Memory-Mapped File"? How bog file it was

appedBus

, which supports having multiple processes y mapped file as well as having multiple

a lot.
oytes in large file and I was using a nethods and it seems that the MappedByteBuffer
Feedback
equired fields are marked *
j ava] [/java] tags otherwise code may not

A s

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Standard IO vs. NIO

Automatic Resource Mgmt

Copy Directory

Delete Directory with Files

Create File

Read File – BufferedReader

Read File - Byte[]

Read File – LineNumberReader

Read File - Java 8 Streams

Read File - NIO

Read/Write - CSV Files

Read/Write - Properties Files

Read/Write - Excel Files

Read Only File

Check if File Exist

Copy File – 4 Methods

Delete File - FilenameFilter

FileFilter Example

Create Temporary File

Write to Temporary File

Delete Temporary File

Read Input from Console

Convert String to InputStream

Convert InputStream to String

Password Protected Zip Files

Manage System Log Size

Generate SHA or MD5 Checksum

Deep Cloning using Serialization

Base64 Encode/Decode - Java 8

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Java NIO vs. Standard IO

Java NIO - Path

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