

# Java System Properties

📅 Last Updated: August 19, 2020    👤 By: Lokesh Gupta    📁 Java Basics    🔑 Java Properties

Java maintains a set of system properties for its operations. Each **java system property** is a key-value (String-String) pair. For example, one such system property is **"java.version"="1.7.0\_09"**.

Please note that access to system properties can be restricted by the Java security manager and policy file. By default, Java programs have unrestricted access to all the system properties.

We can retrieve all the system properties via **System.getProperties()** or we can also retrieve individual property via **System.getProperty(key)** method.

## Table of Contents

1. [Java System Properties List](#)
2. [Get System Property](#)
3. [Set System Property](#)

## 1. Java System Properties List

### 1. JRE System Properties

java.home

java.library.path

JRE home directory, e.g., "C:\Program Files\Java\jdk1.7.0_09\jre".	JRE library search path for search native libraries. It is usually but not necessarily taken from the environment variable PATH.
<code>java.home</code>	<code>java.class.path</code>
JRE home directory, e.g., "C:\Program Files\Java\jdk1.7.0_09\jre".	JRE classpath e.g., ' .' (dot – used for current working directory).
<code>java.home</code>	<code>java.ext.dirs</code>
JRE home directory, e.g., "C:\Program Files\Java\jdk1.7.0_09\jre".	JRE extension library path(s), e.g., "C:\Program Files\Java\jdk1.7.0_09\jre\lib\ext;C:\Windows\Sun\Java\lib\ext".
<code>java.home</code>	<code>java.version</code>
JRE home directory, e.g., "C:\Program Files\Java\jdk1.7.0_09\jre".	JDK version, e.g., <b>1.7.0_09</b> .
<code>java.home</code>	<code>java.runtime.version</code>
JRE home directory, e.g., "C:\Program Files\Java\jdk1.7.0_09\jre".	JRE version, e.g. <b>1.7.0_09-b05</b> .

## 2. IO System Properties

<code>file.separator</code>	<code>path.separator</code>
-----------------------------	-----------------------------

<p>symbol for file directory separator such as</p> <p><code>&amp;#039;d:\test\test.java&amp;#039;</code>. The default is <code>&amp;#039;\&amp;#039;</code> for windows or <code>&amp;#039;/&amp;#039;</code> for Unix/Mac.</p>	<p>symbol for separating path entries, e.g., in <b>PATH</b> or <b>CLASSPATH</b>. The default is <code>' ; '</code> for windows or <code>' : '</code> for Unix/Mac.</p>
<b>file.separator</b>	<b>line.separator</b>
<p>symbol for file directory separator such as</p> <p><code>&amp;#039;d:\test\test.java&amp;#039;</code>. The default is <code>&amp;#039;\&amp;#039;</code> for windows or <code>&amp;#039;/&amp;#039;</code> for Unix/Mac.</p>	<p>symbol for end-of-line (or new line). The default is <code>"\r\n"</code> for windows or <code>"\n"</code> for Unix/Mac OS X.</p>

### 3. User Properties

<b>user.name</b>	<b>user.home</b>
the user's name.	the user's home directory.
<b>user.name</b>	<b>user.dir</b>
the user's name.	the user's current working directory.

### 4. OS Properties

<b>os.name</b>	<b>os.version</b>
	the OS's version, e.g., <b>"6.1"</b> .

the OS's name, e.g.,  
"Windows 7".

os.name

os.arch

the OS's name, e.g.,  
"Windows 7".

the OS's architecture, e.g., "x86".

## 2. Getting System Property

As discussed earlier, You can get the list of all the system properties via `System.getProperties()` or also retrieve individual property via `System.getProperty(key)`.

### Example 1: Java example to get the list of all system properties

```
import java.util.Properties;

public class PrintSystemProperties
{
    public static void main(String[] a)
    {
        // List all System properties
        Properties pros = System.getProperties();
        pros.list(System.out);
    }
}
```

### Example 2: Java example to a system property value by its key

```
import java.util.Properties;
public class PrintSystemProperties
{
    public static void main(String[] a)
    {
        // List all System properties
        Properties pros = System.getProperties();

        // Get a particular System property given its key
        // Return the property value or null
        System.out.println(System.getProperty("java.home"));
    }
}
```

```
        System.out.println(System.getProperty("java.library.path"));
        System.out.println(System.getProperty("java.ext.dirs"));
        System.out.println(System.getProperty("java.class.path"));
    }
}
```

### 3. Set System Property

In Java, you can set a **custom system property** either from the command line or from the application code itself.

#### Example 3: How to set system property in java using command line

In given example, the application will be able to access the property with key `custom_key`. It's value will be available as `custom_value`.

```
java -Dcustom_key="custom_value" application_launcher_class
```

#### Example 4: How to set system property using Java code

Similar to above example, after executing this code, the application will be able to access the property with key `custom_key`. It's value will be available as `custom_value`.

```
System.setProperty("custom_key", "custom_value");
```

That's all for this basic tutorial for **reading and writing system properties in java**.

Happy Learning !!

### Was this post helpful?

Let us know if you liked the post. That's the only way we can improve.

Yes

No

## Recommended Reading:

1. [Java Convert XML to Properties – Read Properties from XML File](#)
2. [Java Read and Write Properties File Example](#)
3. [Java Convert Properties File to XML File](#)
4. [Java WatchService Example to Auto Reload Properties](#)
5. [\[SOLVED\]: Unable to find a result type for extension \[properties\] or \[xml\]](#)
6. [Log4j2 Properties File Example](#)
7. [Spring boot logging with application.properties](#)
8. [Spring boot log4j2 properties example](#)
9. [Difference between 32-bit Java vs. 64-bit Java](#)
0. [Java Naming Conventions](#)

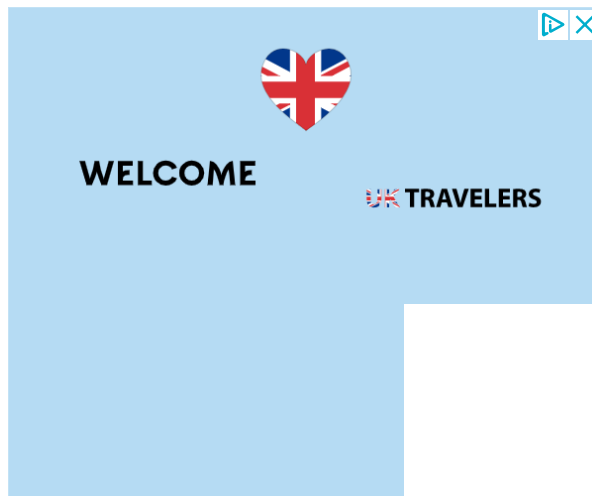
**Join 7000+ Awesome Developers**

Get the latest updates from industry, awesome resources, blog updates and much more.

**Email Address**

**Subscribe**

*\* We do not spam !!*



## 3 thoughts on “Java System Properties”

**Davoud Badamchi**

January 30, 2020 at 7:11 pm

Hey, good job, but!

You didn't mentioned a real world example in which cases I can use these existed or custom defined properties?

[Reply](#)**Karnam**[January 1, 2020 at 4:59 am](#)

Hi , How to set the value to System.setProperty dynamic (from spring boot config server ) .

[Reply](#)**Mayur kohli**[September 2, 2017 at 2:20 pm](#)

Informative and useful article. Java programmers are well known with java system properties and it is very important for the beginners to know about this. You have shared great post here, thanks for that.

[Reply](#)**Leave a Comment**



☐ Add me to your newsletter and keep me updated whenever you publish new blog posts

## Post Comment



**Promoted by amazon.jobs**  
Sponsored



**A message from our sponsor**





## HowToDoInJava

A blog about Java and related technologies, the best practices, algorithms, and interview questions.

### Meta Links

- [About Me](#)
- [Contact Us](#)
- [Privacy policy](#)
- [Advertise](#)

 [Guest Posts](#)

## Blogs

[REST API Tutorial](#)



Copyright © 2022 · Hosted on [Cloudways](#) · [Sitemap](#)