

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

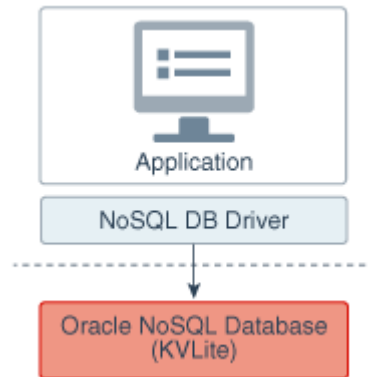
Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

Introduction

The Oracle NoSQL Database is a scalable, distributed NoSQL database, designed to provide highly reliable, flexible and available data management across a configurable set of storage nodes. It consists of two parts - a NoSQL DB Driver and a collection of storage nodes called the KVStore. The NoSQL DB Driver is an intelligent driver that transparently handles all the core operations of Oracle NoSQL Database, and the KVStore consists of storage nodes.

KVLite is a simplified version of the Oracle NoSQL Database. It provides a single storage node, single shard store, that is not replicated. It runs in a single process without requiring any administrative interface. You configure, start, and stop KVLite using a command line interface.



Note: KVLite is intended for use by application developers who need to develop and unit test their Oracle NoSQL Database applications. It can be used as a development platform for developers to get familiar with Oracle NoSQL APIs, and test different ways of interacting with these APIs. KVLite runs on a single machine. It is not intended for production deployment, or for performance measurements.

Also, KVLite is secure by default. If you want to run KVLite in unsecure mode, you will have to explicitly provide parameters to disable security while installing KVLite as demonstrated in this guide.

This Quick Start guide demonstrates how to perform the following tasks:

1. [Install KVLite](#)
2. [Start KVLite](#)
3. [Verify your Installation](#)
4. [Stop and Restart KVLite](#)
5. [About the Oracle NoSQL Database Proxy](#)

Install KVLite

KVLite is bundled with the Oracle NoSQL Database software. To install KVLite, follow the steps below:

1. Download the tar.gz or .zip file from Oracle Technology Network.
2. Gunzip and untar the .tar.gz package (or unzip if you downloaded the .zip package). Oracle NoSQL Database version 23.1.21 Community Edition is used in this example. The actual package names and directory names will change, depending upon the release version you are using, and whether you are using Community Edition (CE) or Enterprise Edition (EE).

Be aware that the examples used in this document are part of a separate download and must be unpacked separately.

Also, make sure you meet the following requirements to run KVLite:

- Install Java version 11 in your machine.
- Maintain a minimum disk space of 5GB.

The examples download package (kv-examples-23.1.21.tar.gz in this tutorial) can be obtained from the same location as you obtained your server download package.

```
$ gunzip kv-ce-23.1.21.tar.gz
$ tar xvf kv-ce-23.1.21.tar

// To extract the examples package:
$ gunzip kv-examples-23.1.21.tar.gz
$ tar xvf kv-examples-23.1.21.tar
```

In this case, the contents of kv-ce-23.1.21.tar.gz is unpacked to a directory called kv-23.1.21 and the contents of kv-examples-23.1.21.tar.gz is unpacked to a directory called kv-23.1.21/examples.

Start KVLite

Perform the following steps to start a KVLite instance:

To start KVLite in secure mode:

1. Open a terminal and cd into the kv-23.1.21 directory to start the NoSQL Database server.

```
$ cd kv-23.1.21
$ java -Xmx64m -Xms64m -jar lib/kvstore.jar kvlite
                                     [-storagedirsizegb N]
```

The storagedirsizegb is an optional parameter. This parameter can be used to control the size of the storage directory for a new instance. The value of N is in GB and must be ≥ 1 . By default the store created has a size of 10GB and this flag must be used to override that. The size cannot be changed once the instance has been created and use of the flag on an existing instance is ignored.

Expected Output:

```
Generated password for user admin: <password>
User login file: ./kvroot/security/user.security
Created new kvlite store with args:
-root ./kvroot -store kvstore -host localhost -port 5000
-storagedirsizegb 15 -secure-config enable
```

Where kvstore is the name of the store, localhost is the name of the local host, and kvroot is the directory where Oracle NoSQL Database data is placed. It takes about 10 - 60 seconds before this message is issued, depending on the speed of your machine.

Note that you will not get the command line prompt back until you stop the KVLite.

2. In a second shell, `cd` into the `kv-23.1.21` directory and ping your KVLite instance to test that it's alive. The details of the output will vary but you should see a running store.

```
$ cd kv-23.1.21
$ java -Xmx64m -Xms64m -jar lib/kvstore.jar ping -host localhost -
port 5000 -security kvroot/security/user.security
```

Expected output:

```
Pinging components of store kvstore based upon topology sequence #14
10 partitions and 1 storage nodes
Time: 2023-05-23 06:15:34 UTC   Version: 23.1.21
Shard Status: healthy: 1 writable-degraded: 0 read-only: 0 offline:
0 total: 1
Admin Status: healthy
Zone [name=KVLite id=zn1 type=PRIMARY allowArbiters=false
masterAffinity=false]   RN Status: online: 1 read-only: 0 offline: 0
Storage Node [sn1] on phoenix126166: 5000   Zone: [name=KVLite
id=zn1 type=PRIMARY allowArbiters=false masterAffinity=false]
Status: RUNNING   Ver: 23.1.21 2023-05-19 18:31:46 UTC   Build id:
477e7f102ab4 Edition: Community   isMasterBalanced: true
serviceStartTime: 2023-05-23 06:13:24 UTC
    Admin [admin1]           Status: RUNNING,MASTER
serviceStartTime: 2023-05-23 06:13:29 UTC   stateChangeTime:
2023-05-23 06:13:29 UTC   availableStorageSize: 2 GB
    Rep Node [rg1-rn1]       Status: RUNNING,MASTER sequenceNumber:
322 haPort: 5003 availableStorageSize: 9 GB storageType: HD
serviceStartTime: 2023-05-23 06:13:32 UTC   stateChangeTime:
2023-05-23 06:13:32 UTC
```

The status indicates that the KVLite is up and running.

To start KVLite in unsecure mode:

1. Open a terminal and `cd` into the `kv-23.1.21` directory.
2. Execute the `kvstore.jar` file using the `-enable-secure` disable flag to disable security and start KVLite in unsecure mode.

```
$ java -jar lib/kvstore.jar kvlite
[-storagedirsizegb N ] -secure-config disable
```

The `storagedirsizegb` is an optional parameter. This parameter can be used to control the size of the storage directory for a new instance. The value of `N` is in GB and must be `>= 1`. By default the store created has a size of 10GB and this flag

must be used to override that. The size cannot be changed once the instance has been created and use of the flag on an existing instance is ignored.

3. In a second shell, `cd` into the `kv-23.1.21` directory and ping your KVLite instance to test that it's alive. You should see a running store.

```
$ cd kv-23.1.21
$ java -jar lib/kvstore.jar ping -host localhost -port 5000
```

Expected output:

```
Pinging components of store kvstore based upon topology sequence #14
10 partitions and 1 storage nodes
Time: 2023-05-23 08:30:00 UTC   Version: 23.1.21
Shard Status: healthy: 1 writable-degraded: 0 read-only: 0 offline:
0 total: 1
Admin Status: healthy
Zone [name=KVLite id=zn1 type=PRIMARY allowArbiters=false
masterAffinity=false]   RN Status: online: 1 read-only: 0 offline: 0
Storage Node [sn1] on phoenix126166: 5000   Zone: [name=KVLite
id=zn1 type=PRIMARY allowArbiters=false masterAffinity=false]
Status: RUNNING   Ver: 23.1.21 2023-05-19 18:31:46 UTC   Build id:
477e7f102ab4 Edition: Community   isMasterBalanced: true
serviceStartTime: 2023-05-23 08:29:14 UTC
    Admin [admin1]           Status: RUNNING,MASTER
serviceStartTime: 2023-05-23 08:29:17 UTC   stateChangeTime:
2023-05-23 08:29:17 UTC   availableStorageSize: 2 GB
    Rep Node [rg1-rn1]       Status: RUNNING,MASTER sequenceNumber: 51
haPort: 5003 availableStorageSize: 9 GB storageType: HD
serviceStartTime: 2023-05-23 08:29:19 UTC   stateChangeTime:
2023-05-23 08:29:19 UTC
```

The status indicates that the KVLite is up and running.

Verify your Installation

There are several ways to verify your installation and ensure that KVLite is running. Perform one of these steps to verify your installation:

- Start a new shell and run the following command:

```
$ jps -m
```

You should see a similar output showing KVLite (and possibly other things as well) running in your machine:

```
2674 kvstore.jar kvlite
3118 Jps -m
```

- Or, cd into the kv-23.1.21 directory and ping your KVLite instance. The details of the output will vary but you should see a running store.

```
$ cd kv-23.1.21
$ java -Xmx64m -Xms64m -jar lib/kvstore.jar ping -host localhost -
port 5000 -security kvroot/security/user.security
```

Expected output:

```
Pinging components of store kvstore based upon topology sequence #14
10 partitions and 1 storage nodes
Time: 2023-05-23 06:15:34 UTC   Version: 23.1.21
Shard Status: healthy: 1 writable-degraded: 0 read-only: 0 offline:
0 total: 1
Admin Status: healthy
Zone [name=KVLite id=zn1 type=PRIMARY allowArbiters=false
masterAffinity=false]   RN Status: online: 1 read-only: 0 offline: 0
Storage Node [sn1] on phoenix126166: 5000   Zone: [name=KVLite
id=zn1 type=PRIMARY allowArbiters=false masterAffinity=false]
Status: RUNNING   Ver: 23.1.21 2023-05-19 18:31:46 UTC   Build id:
477e7f102ab4 Edition: Community   isMasterBalanced: true
serviceStartTime: 2023-05-23 06:13:24 UTC
    Admin [admin1]           Status: RUNNING,MASTER
serviceStartTime: 2023-05-23 06:13:29 UTC   stateChangeTime:
2023-05-23 06:13:29 UTC   availableStorageSize: 2 GB
    Rep Node [rg1-rn1]       Status: RUNNING,MASTER sequenceNumber:
322 haPort: 5003 availableStorageSize: 9 GB storageType: HD
serviceStartTime: 2023-05-23 06:13:32 UTC   stateChangeTime:
2023-05-23 06:13:32 UTC
```

If you have started KVLite in an unsecured mode, ping the KVLite instance without using the -security parameter:

```
$ cd kv-23.1.21
$ java -Xmx64m -Xms64m -jar lib/kvstore.jar ping -host localhost -
port 5000
```

- Or, run the kvclient test application using the following commands:

```
$ cd kv-23.1.21
$ java -Xmx64m -Xms64m -jar lib/kvclient.jar
```

This should write a similar release output to stdout:

```
23.1.21 2023-05-19 18:31:46 UTC   Build id: 477e7f102ab4 Edition:
Client
```

- Or, if you have not already, download the *examples* package and unpack it so that the examples directory is in **KVHOME**. In this tutorial, we have already downloaded and extracted the *examples* package.

1. Compile the *Hello* example program:

```
$ export KVHOME=<the directory where you have unzipped the CE
package>
$ javac -cp lib/kvclient.jar:examples examples/hello/
HelloBigDataWorld.java
```

2. Run the example using all default parameters:

```
$ cd $KVHOME
$ java -Xmx64m -Xms64m -Doracle.kv.security=./kvroot/security/
user.security \
    -cp lib/kvclient.jar:examples hello.HelloBigDataWorld \
    -port 5000 -store kvstore -host localhost
```

- **Note:** In case of an unsecured installation, do not specify the security parameter and run the example:

```
$ java -Xmx64m -Xms64m -cp lib/kvclient.jar:examples
hello.HelloBigDataWorld \
    -port 5000 -store kvstore -host localhost
```

Or, run it using non-default parameters, if you started KVLite using non-default values:

```
$ java -Xmx64m -Xms64m -cp lib/kvclient.jar:examples
hello.HelloBigDataWorld \
    -port <hostport> -store <kvstore name> -host <hostname>
```

Expected output:

```
Hello Big Data World!
```

Stop and Restart KVLite

To stop and restart KVLite, perform the following steps:

To stop KVLite, use **Ctrl C (^C)** from within the shell where KVLite is running.

To restart the process, simply run the KVLite utility without any command line options. Do this even if you provided non-standard options when you first started KVLite. This is because KVLite remembers information such as the port value and the store name

in between run times. You cannot change these values by using the command line options.

```
$ java -Xmx64m -Xms64m -jar KVHOME/lib/kvstore.jar kvlite
```

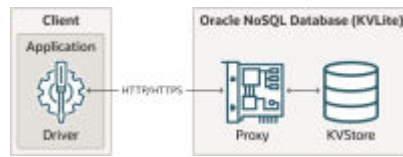
If you want to start over with different options than you initially specified, delete the `KVROOT` directory (`./kvroot`, by default), and then re-run the `kvlite` utility with whatever options you desire. Refer to [Start KVLite](#).

Alternatively, specify the `-root` command line option, making sure to specify a location other than your original `KVROOT` directory, as well as any other command line options that you want to change.

Note: If you choose to start over, all your previous data will be lost.

About the Oracle NoSQL Database Proxy

The Oracle NoSQL Database Proxy is a middle-tier component that lets the Oracle NoSQL Database SDK communicate with the Oracle NoSQL Database(kvlite configuration).



The Oracle NoSQL Database drivers are available in various programming languages that are used in the client application. Currently, Java, Python, Go, Node.js and .NET language and Spring Data SDKs are supported. The JAR file for the Oracle NoSQL Database Proxy is included in the Enterprise Edition distribution and the Community Edition distribution of Oracle NoSQL Database that you downloaded. For more information, see [Oracle NoSQL Database Proxy and Driver](#) .

Oracle NoSQL Database Quick Start to KVLite, Release 23.1

E87605-20

Copyright © 2011, 2023, Oracle and/or its affiliates

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software, software documentation, data (as defined in the Federal Acquisition Regulation), or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs (including any operating system, integrated software, any programs embedded, installed, or activated on delivered hardware, and modifications of such programs) and Oracle computer documentation or other Oracle data delivered to or accessed by U.S. Government end users are "commercial computer software," "commercial computer software documentation," or "limited rights data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, reproduction, duplication, release, display, disclosure, modification, preparation of derivative works, and/or adaptation of i) Oracle programs (including any operating system, integrated software, any programs embedded, installed, or activated on delivered hardware, and modifications of such programs), ii) Oracle computer documentation and/or iii) other Oracle data, is subject to the rights and limitations specified in the license contained in the applicable contract. The terms governing the U.S. Government's use of Oracle cloud services are defined by the applicable contract for such services. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle®, Java, and MySQL are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Inside are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Epyc, and the AMD logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.