

Jaguar NoSQL Database

Frequently Asked Questions

1. Is Jaguar relational or NoSQL database?
Jaguar is NoSQL, meaning scalable with some standard SQL features.
2. What is Jaguar's data model?
The data model in Jaguar is flat array containing fixed-length records. In each record, there is a key (can be composite key) and a value (can have many columns).
3. Does Jaguar support indexes?
Yes, you can create as many indexes as you want for each table. In each index, you can duplicate some columns in the original table for fast data access.
4. Is Jaguar distributed?
Yes, data is distributed among all servers in the cluster.
5. How many nodes can Jaguar support?
There is no limit. You can run it on as many nodes as you can.
6. Is Jaguar a in-memory database?
No, Jaguar is a persistent storage database. Memory is used for temporary caching and computing in Jaguar. Of course, Jaguar runs faster if there is more memory on each node.
7. Is Jaguar optimized for SSD?
Yes, Jaguar runs on HDD as well as on SSD. On SSD, it is more suitable and optimized.
8. Is Jaguar developed in Java?
No, Jaguar server is written with C++. Client API is in Java, Scala, NodeJS, PHP, etc.
9. I have started Jaguar server, why jag has connection failure?
When Jaguar starts up, it may take a while for it to read some data and warm up. After a few seconds or a minute, jag should be able to connect OK.
10. I still get connection error on jag, what happened?

If you are running the enterprise version, make sure the license is correctly installed.

11. Do I need to copy the license file to every node?
No, it is only required on the first node in the cluster.
12. When I run Java client programs, I get error of “Unable to load library”. Why?
Make sure you have included the `$JAGUAR_HOME/jaguar/lib` in `LD_LIBRARY_PATH` so that the `libJaguarClient.so` file can be found by your Java program.
13. When I start and stop Jaguar server, should I do this on each node?
Yes, you can login to each node and execute the scripts or using some tools to manage your cluster and execute the scripts from only one host.
14. I have multiple network cards on my server, how can I connect to Jaguar?
If you have multiple NIC cards and IP addresses, you must specify which IP address your Jaguar should listen to. This is specified by `LISTEN_IP` in `conf/server.conf`. When your client connects to Jaguar, it also must use the same IP address.
15. How many cores does Jaguar require?
Jaguar does not have requirement on the number of cores. However, more cores will enable Jaguar to accept more client connections and speed up its read performance.
16. What is the `jagexportsql` program?
You can execute this script to pull all data records from all nodes and save data in a single file. You just need to run it from one node. The data can be imported to database with the `jagimportsqli` program.
17. What is the `jagexport` program?
This program reads all data from a table and writes the data to a temp file in the export directory. The table can be dropped, recreated with a new schema. The `jagimport` program can be executed to reload the data from the temp file to the table.
18. How can I keep snapshot of tables?
There are local backup settings in the `server.conf` file which can specify the interval for taking snapshots of all tables in Jaguar.
19. Does one of Jaguar nodes goes down, will Jaguar continue working?
Yes, Jaguar cluster has fault-tolerance support in which if one node goes down or several hosts have hardware failure, the Jaguar cluster continue to work. Inserting new data and querying data still work.
20. How many replicates does Jaguar offer for each data record?

Jaguar can store a maximum of three copies for each data record. The replication factor is set by the REPLICATION parameter in conf/server.conf file.

21. What is Jaguar in terms of CAP theory?

Jaguar is an AP system. In case of hardware failure or network glitch, Jaguar favors availability over consistency. It offers eventual consistency.

22. How long it will take to install Jaguar on a cluster of 100 hosts?

A few minutes. Suppose you have a user account on all the 100 hosts and the account password is the same on the hosts, then you just need to provide a file listing all the 100 hosts and execute one shell script, which will automatically install Jaguar software on all the 100 hosts. Some ssh servers do not allow login with passwords, in such case you need root admin to enable "PasswordAuthentication yes" in the /etc/ssh/sshd_config file and restart sshd server.

23. I have Windows server, how can I run jaguar?

You can run jaguar in Msys or Cygwin terminals with same startup or stop scripts. Please make sure the terminal stay open and is not closed once jaguar is started. If the terminal is closed, jaguar server will be automatically stopped too. Also please do not log off from your Windows session since logoff could close all your active Windows terminals. It is recommended that you use only Lock your screen.

24. I have Jaguar installed on Centos 7 hosts, but I cannot connect to the Jaguar server.

What went wrong?

Probably Centos 7 firewall is blocking connections to port 8888. You need to open the port 8888 for connections (run as root or sudo):

```
# firewall-cmd --zone=public --add-port=8888/tcp --permanent
# firewall-cmd --reload
# systemctl restart firewalld.service
```