Installation guide

Verified against host OS:

- Ubuntu 14.04 LTS Desktop 64-bit
- Ubuntu 16.04 LTS Desktop 64-bit
- CentOS 6.7 64-bit

Introduction

This guide describes installation and configuration of Kaa components on a single Linux node. If this is the first time you use Kaa, we recommend that you start the evaluation using the Kaa Sandbox instead of attempting manual installation described in this guide. The Kaa Sandbox emulates a single-node Kaa installation which comes already pre-configured so that you could instantly start developing applications. Additionally, the Kaa Sandbox provides a number of demo applications for you to play with and learn by example.

Kaa requirements and supported versions

Supported OS

Kaa supports the following operating system families and provides installation packages for each of them.

- Ubuntu and Debian systems
- Red Hat/CentOS/Oracle 5 or Red Hat 6 systems

System requirements

To use Kaa, your system must meet the following minimum system requirements.

- 64-bit OS
- 4 Gb RAM

Third party components

Kaa requires the following third party components to be installed and configured.

- Oracle JDK 8. Kaa has been tested on JDK 8.
- PostgreSQL 9.4.
- MariaDB 5.5
- Zookeeper 3.4.5. Kaa requires ZooKeeper for coordination of server components.

Kaa has been tested on the latest production release of MariaDB and PostgreSQL.

Kaa also requires MongoDB 2.6.9 or Cassandra 3.5 as a NoSQL database. The installation steps for third-party components are provided in the following section.

Installation steps

Third party components

Kaa server components

To install Kaa you will need to download pre-built packages or build them from the source code. We will use pre-built packages in this guide.

Configuration steps

SQL database configuration

You can find SQL database configuration property file templates in "*/etc/kaa-node/conf/*" folder: *mariadb-dao.properties.template* file for MariaDB database and *postgresql-dao.properties.template* file for PostgreSQL.

HTTP ERROR: 503

If you receive *ERROR: 503 Problem accessing /kaaAdmin. Reason: Service Unavailable* or *GenericJDBCException: Could not open connection* when accessing the Admin UI, please check the log files (refer to Troubleshooting guide for how to obtain the logs) for the following lines:

Log file example

```
...
Caused by: org.apache.commons.dbcp.SQLNestedException: Cannot load JDBC driver class 'org.postgresql.
Driver'
...
Caused by: java.lang.ClassNotFoundException: org.postgresql.Driver
...
```

If such lines are present in the logs then you need to download the database driver jar file from the official site, place it in Kaa node classpath "*/usr/lib/kaa-node/lib*" and restart the kaa-node service:

```
$ sudo service kaa-node restart
```

In case of the password mismatch, edit the configuration file to set a new login and password.

```
$ sudo nano /etc/kaa-node/conf/admin-dao.properties
$ sudo nano /etc/kaa-node/conf/sql-dao.properties
```

Switching between MariaDB and PostgreSQL

To switch between databases change contents of sql-dao.properties and admin-dao.properties files (see /etc/kaa-node/conf/)

NoSQL database configuration

Check that a NoSQL database name matches your choice.

```
$ cat /etc/kaa-node/conf/nosql-dao.properties | grep nosql_db_provider_name
nosql_db_provider_name=mongodb
```

In case you are going to use Cassandra, execute the following commands.

```
$ sudo cqlsh -f /etc/kaa-node/conf/cassandra.cql
$ sudo nano /etc/kaa-node/conf/nosql-dao.properties
nosql_db_provider_name=cassandra
```

Network interface configuration

This step will configure a public interface for Operations and Bootstrap servers. It is important to specify the hostname or an IP address that is visible for devices in your network. This will allow various devices to communicate with the server components.

```
$ sudo nano /etc/kaa-node/conf/kaa-node.properties
transport_public_interface=localhost=YOUR_PUBLIC_INTERFACE
```

Firewall rules configuration

Startup steps

Start Kaa service.

```
$ sudo service kaa-node start
```

Check logs after the startup.

```
$ cd /var/log/kaa
$ cat * | grep ERROR
```

Open Admin UI in a web browser: http://YOUR_SERVER_HOST:8080/kaaAdmin. This will open a web page that will request to enter the Kaa administrator login and password information. This is one time operation.

Further reading

Use the following guides and references to make the most of Kaa.

Guide	What it is for
Administration UI guide	Use this guide to start working with the Kaa web UI.
Programming guide	Use this guide to create your own Kaa applications.

For switching between databases you must change contents of sql-dao.properties and admin-dao.properties files. Use this configuration.