Pole Position Installation Guide And Internals

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1.Pre-Installation Part

1.1-Rocky Linux 8 Installation

In this program, we used Rocky Linux 8 because the availability of the support and being open-source. Before starting up the installer, you must have a properly working internet connection. Our hardware requirement for each server is (at least):

RAM: 8GB

CPU: 2 Core

STORAGE: 100GB

After the Rocky Linux 8 installation, all server must be updated to the latest release.

```
sudo yum -y update
```

Then you need to close firewall service for each server.

```
systemctl stop firewalld.service
systemctl status firewalld.service
```

After that we need to define hostname. We recommend FQDN for servers. We can use these comments for each server:

```
hostamectl set-hostname examplexx.beartell.com
hostname
```

Finally, we need to check ip address all server:

```
ip addr

1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN
group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel
state UP group default qlen 1000
    link/ether 08:00:27:42:68:16 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute
enp0s3
       valid_lft 79452sec preferred_lft 79452sec
    inet6 fe80::a00:27ff:fe42:6816/64 scope link noprefixroute
       valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel
state UP group default qlen 1000
    link/ether 08:00:27:7d:fb:1c brd ff:ff:ff:ff:ff:ff
    inet 192.168.56.140/24 brd 192.168.56.255 scope global noprefixroute
enp0s8
       valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fe7d:fb1c/64 scope link noprefixroute
       valid_lft forever preferred_lft forever
```

1.2-SSH Configuration

Pole Position connects remote machines using ssh protocol. SSH Port must be for an application to establish connection. On host-machine before starting the installation, each server machine's hostname and ip address must be configured on **hosts** file.

For Windows, it is under the directory:

```
C:\Windows\System32\drivers\etc\
```

For Linux Distros, it is under the directory:

```
/etc/hosts/
```

Then, we need to configure the host file for each server machine. We must remove default hosts config. We add hostname and IP address to hosts file for SSH connection to servers.

Installation Machine:

../hosts

```
127.0.0.1   localhost localhost.localdomain localhost4
localhost4.localdomain4
::1         localhost localhost.localdomain localhost6
localhost6.localdomain6
192.168.56.140 example01.beartell.com
192.168.56.141 example02.beartell.com
192.168.56.142 example03.beartell.com
```

After adding hosts, We need ssh connection on host-machine to all servers. We create ssh-key.

```
ssh-keygen -t rsa
```

Then we need copy ssh-key file to all servers.

```
ssh-copy-id -i ~/.ssh/id_rsa.pub root@examplexx.beartell.com
```

Next, We need configure host file on server machines.We must remove default hosts config.We add hostname and IP address to /etc/hosts file for inter-communication of servers.

Servers:

/etc/hosts

```
192.168.56.140 example01.beartell.com
192.168.56.141 example02.beartell.com
192.168.56.142 example03.beartell.com
```

2-Installation Part

2.2-Download Poleposition Installer Packages

For Windows clients download below Installer.

https://github.com/beartell/PolePosition/releases/download/objectification/poleposition-v1.msi

Double click MSI file and install accordingly. Run Installed Poleposition application.

For Linux clients download below tar.gz package

https://github.com/beartell/PolePosition/releases/download/objectification/poleposition-v1.tar.gz

$ tar zxvf poleposition-v1.tar.gz -C poleposition

$ cd poleposition

$ ./poleposition.sh

2.2-Installation Steps

2.2.1)Starting Page

Application started and giving necessary infos about poleposition in first page. Starting to installation we click to next button.

2.2.2) Server Selection page

We can add server(domain) name in **Server Selection** page. You can increase or decrease server number with using plus and minus button.After adding Server names, we can click next button to next page.

2.2.3) Master Node Selection page.

We can choose master node using list on **Master Node Selection** page. Master Node is really important for cluster.Because all master services(Namenode,Hbase Master,etc..)inside this server.After choosing master node we can click next button.

2.2.4) Cluster Components page.

We can choose necessary components that install for cluster on installation in **Cluster Components** page. We have 19 components Hadoop and ZooKeeper comes default components for Pole Position installer. After choosing components ,we can click button to next page.

2.2.5) Repo URL page,

In **Repo URL** page, We choose OS for cluster. We have Rocky Linux 8,Ubuntu 20.04,Fedora 35,Debian 11 options available cluster. If you check Advanced, Text part will be open and you change URL for installation. Then, we can click next button for next page.

2.2.6) Storage Path page

We can add storage directory or directories in **Storage Path** page. You need to define path where is datas for services. You can increase or decrease path number with using plus and minus button.After adding path,we can click next button.

2.2.7) Configuration page

We need to choose configuration method in **c**. We have two methods. The first one,you choose Credentials method. In this method, you need to give Username and Password for installation method. We recommend username should be root and Password must be same for all servers. Second method,you can choose SSH-Key file for connection. File could be different directories for each OS. After choosing configuration ,you can click Install button and Installation will be started.

2.2.8) Installation page

Pole Position installation started this page. Firstly, Install-C ation start to set up monitoring tools.Program set up Prometheus and Grafana install to last server in **Server Selection** page. It takes few minutes and you can see logs on page. Then,Installation log part open after finish monitoring tools on same page. You can see logs for all services and installation percentage in this page. Installation start and components set up for all given servers. This part may takes long time number of components and services. Green progress bar will be full and percentage %100 percent installation finished. You can sight and check logs for each servers. After finishing installation, check button will be activate and you can click check button.

3-Post-Installation Part

3.1-Service Life Checking

In this page, Installation completed and opened check services. You can see status of service for each of servers. If service has a green circle, service is working and port is active. But service has a red circle, it is not working or it has a issue installing part of service. After the life checking part installation finished. You can click finish button for ending installation. If you click back button installation start again and you turn installation page. Installer start same configuration and set up for cluster.