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# Workbench User's Guide

Prerequisites

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# Prerequisites

## Workbench Host/Server Operating System Requirements

Workbench components are supported on hosts with the following Operating Systems:

Platform	Version
Microsoft Windows Server	2012
Microsoft Windows Server	2016
Red Hat Enterprise Linux (RHEL)	7
CentOS	7

Workbench 9.x comprises several components; a network Admin-level account is required that has "Full Control" permissions for all Workbench application related folders.

### Warning

- The Workbench Primary and Additional (i.e. Node2 and Node3) hosts/nodes (across ALL Data-Centers) should all be running the same Operating System.
- Workbench uses the Hostname for component configuration
- Please ensure DNS hostname resolution between the Workbench Hosts and the Engage Hosts is accurate and robust
- If the Workbench Hosts have multiple NIC's, please ensure the Hostname resolves to the desired IP Address **prior** to Workbench installation
- Workbench **9.x is limited to a maximum of 100 Hosts** (the global combined Workbench or Engage Hosts), due to delays in loading the Configuration Host and Application objects/details; this limitation will be addressed in the next release of Workbench.
- Genesys support for the OS versions above ends when the respective vendors declare EOL/EOS

## Supported Browser

Browser	Version
Google Chrome	latest version is recommended

## Genesys Workbench 9 to Engage Integration

Genesys recommends Engage Configuration Server, Solution Control Server, Message Server and SIP Server versions of 8.5+.

### Warning

- If your Engage Configuration Servers are configured for HA, please ensure the respective CME Host Objects have the IP Address field configured, else Workbench will fail to install.
- Ensure each and every Engage CME Application has an assigned Template else the Workbench installation will fail.
- Genesys support for the platform versions mentioned on this page ends when the respective vendors declare End of Support.

### Warning

- Currently Workbench Agent 9.x uses Port 5067 - this unfortunately clashes with GVP - if your Genesys deployment contains GVP please change the Workbench Agent(s) Port (i.e. to 5068) and restart the Workbench Agent(s) and Workbench Logstash(s) components.
  - This oversight will be addressed in a future Workbench 9.x release

## Java Requirements

Workbench 9.x ships/installs with a pre-bundled OpenJDK 11 package, therefore the historical JRE is not mandatory.

Note:

- the Workbench Agent that gets installed on the Workbench Nodes/Hosts utilizes the pre-bundled OpenJDK 11 package
- the Workbench Agent (Remote, WAR) that's installed on "remote" Nodes/Hosts (i.e. SIP, URS, FWK etc) is Go based and therefore does not rely on either OpenJDK or the historical JRE packages

### Warning

- If the JAVA\_OPTS settings are changed, ensure the **xms** and **mxm** values are different; if the values are the same issues will be encountered when starting Logstash

## Network Ports - Workbench Hosts

Workbench components use the network ports below, from a firewall perspective, please review, edit and ensure not already in use.

### Warning

- Double-check, these network ports below, that are used by Workbench, are from a firewall perspective, **open and not already in use** by other applications

Workbench Host Ports (i.e. the Primary, Node 2, Node 3, Node N etc hosts)

Port	Component	Comments
<b>8182, 2552</b>	Workbench IO	<ul style="list-style-type: none"><li>• Mandatory to open in firewall for Workbench Users connecting to the Workbench UI</li><li>• ports 8182 &amp; 2552 can be changed (select custom install to change from these defaults) at install time</li><li>• ports 8182 &amp; 2552 ports cannot be changed via the WB UI post install</li></ul>
<b>8181</b>	Kibana	<ul style="list-style-type: none"><li>• Mandatory to open in firewall for Workbench Users connecting to the Workbench UI</li><li>• port 8181 can be changed (select custom install to</li></ul>

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Port	Component	Comments
		<p>change from these defaults) at install time</p> <ul style="list-style-type: none"> <li>port 8181 can be changed via the WB UI post install</li> </ul>
<b>9091, 5067</b>	Workbench Agent & Metricbeat	<ul style="list-style-type: none"> <li>only publicly open in the firewall on the Workbench host if/when using a Workbench Cluster</li> <li>ports 9091 &amp; 5067 can be changed (select custom install to change from these defaults) at install time</li> <li>ports 9091 &amp; 5067 can be changed via the WB UI post install</li> </ul>
<b>9200, 9300</b>	Elasticsearch	<ul style="list-style-type: none"> <li>only publicly open in the firewall on the Workbench host if/when using a Workbench Elasticsearch Cluster</li> <li>port 9200 can be changed via the WB UI post install</li> <li>port 9300 cannot be changed via the UI post install</li> </ul>
<b>9600</b>	Logstash	<ul style="list-style-type: none"> <li>only publicly open in the firewall on the Workbench host if/when using: <ul style="list-style-type: none"> <li>Workbench Cluster</li> <li>Workbench Agent Remote components installed on Engage hosts</li> </ul> </li> <li>port 9600 can be changed via the WB UI post install</li> </ul>
<b>5047</b>	Logstash Status Pipeline (all ports can be changed via the WB UI)	<ul style="list-style-type: none"> <li>only publicly open in the firewall on the Workbench host if/when using: <ul style="list-style-type: none"> <li>Workbench Cluster</li> <li>Workbench Agent Remote</li> </ul> </li> </ul>

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Port	Component	Comments
		<p>components installed on Engage hosts</p> <ul style="list-style-type: none"> <li>port 5047 can be changed (select custom install to change from these defaults) at install time</li> <li>port 5047 can be changed via the WB UI post install</li> </ul>
<b>5048</b>	Logstash Metrics Pipeline (all ports can be changed via the WB UI)	<ul style="list-style-type: none"> <li>only publicly open in the firewall on the Workbench host if/when using: <ul style="list-style-type: none"> <li>Workbench Cluster</li> <li>Workbench Agent Remote components installed on Engage hosts</li> </ul> </li> <li>port 5048 can be changed (select custom install to change from these defaults) at install time</li> <li>port 5048 can be changed via the WB UI post install</li> </ul>
<b>5077</b>	Heartbeat HTTP Port (all ports can be changed via the WB UI)	<ul style="list-style-type: none"> <li>only publicly open in the firewall on the Workbench host if/when using: <ul style="list-style-type: none"> <li>Workbench Cluster (all ports can be changed via the WB UI)</li> <li>Workbench Agent Remote components installed on the Engage hosts</li> </ul> </li> <li>port 5077 can be changed (select custom install to change from these defaults) at install time</li> <li>port 5077 can be changed via the WB UI post install</li> </ul>
<b>2181, 2888, 3888</b>	ZooKeeper	<ul style="list-style-type: none"> <li>only publicly open in the firewall on the Workbench host if/when using Workbench ZooKeeper Cluster</li> </ul>

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Port	Component	Comments
		<ul style="list-style-type: none"><li>ports 2181, 2888 and 3888 can be changed via the WB UI post install</li></ul>

## Network Ports - Non-Workbench Hosts (i.e. SIP, URS, FWK etc hosts)

Port(s)	Component
<b>9091, 5067</b>	Workbench Agent & Metricbeat on the remote Engage (i.e. SIP, URS, FWK etc Hosts)

- Workbench Agent/Metricbeat installed on the Genesys Application Servers will send metric data to the local WB Data-Center instance/Cluster

### Important

- The ports above can be edited via the Workbench Configuration Console - and selecting/editing the respective Workbench application object

### Warning

- Ensure the Ports are reviewed, edited, opened and not in use prior to starting the Workbench installation

## Hardware Sizing Requirements

Please review the **Sizing** section for Workbench hardware requirements.

---

## Linux Pre-installation Steps

For Linux based installations, some Operational System settings are required to enable support of Elastic Search, a key components of Workbench 9.

1. Run the command **ulimit -a**. This should print something like the following:

```
bash-4.2$ ulimit -a
core file size          (blocks, -c) 0
data seg size          (kbytes, -d) unlimited
scheduling priority    (-e) 0
file size              (blocks, -f) unlimited
pending signals        (-i) 31152
max locked memory      (kbytes, -l) 64
max memory size        (kbytes, -m) unlimited
open files             (-n) 8192
pipe size              (512 bytes, -p) 8
POSIX message queues   (bytes, -q) 819200
real-time priority     (-r) 0
stack size             (kbytes, -s) 8192
cpu time               (seconds, -t) unlimited
max user processes     (-u) 4096
virtual memory         (kbytes, -v) unlimited
file locks             (-x) unlimited
```

2. Make the following changes:

- Run the command **sudo vi /etc/security/limits.conf**
- Add the following lines to the bottom. <username> is the current username.
  - <username> - nofile 131070
  - <username> - nproc 8192
  - <username> - memlock unlimited
- Logout and log back in.
- Run the command **sudo sysctl -w vm.max\_map\_count=262144**
- Run the command **sudo vi /etc/sysctl.conf** and add the line **vm.max\_map\_count=262144** to the bottom.

3. Exit the current terminal window and open a new one.

4. Run the command **ulimit -a**. This should print something like the following:

```
bash-4.2$ ulimit -a
core file size          (blocks, -c) 0
data seg size          (kbytes, -d) unlimited
scheduling priority    (-e) 0
file size              (blocks, -f) unlimited
pending signals        (-i) 31152
max locked memory      (kbytes, -l) 64
max memory size        (kbytes, -m) unlimited
open files             (-n) 131070
pipe size              (512 bytes, -p) 8
```

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```
POSIX message queues      (bytes, -q) 819200
real-time priority        (-r) 0
stack size                (kbytes, -s) 8192
cpu time                  (seconds, -t) unlimited
max user processes        (-u) 8192
virtual memory            (kbytes, -v) unlimited
file locks                (-x) unlimited
```

5. Ensure the values **max user processes=8192** and **open files=131070** from Step 4.

## RHEL 7.x - specific steps

The following change is needed only for machines running Red Hat Enterprise Linux Server release 7.x.

For the Workbench services to start correctly after a machine reboot, it is necessary to run the following commands:

1. `sudo visudo` (enter the sudo password when prompted)
2. Locate the line “Defaults requiretty” in the opened file
3. Comment it out by placing a “#” at the beginning to make it read “#Defaults requiretty”
4. `:wq<Enter>` to save the changes and exit.

Alternatively, upon reboot of the machine, these services can be manually started in the following sequence:

```
service WB_Elasticsearch_9.1.000.00 start
```

```
service WB_ZooKeeper_9.1.000.00 start
```

```
service WB_Kibana_9.1.000.00 start
```

```
service WB_Agent_9.1.000.00 start
```

```
service WB_IO_9.1.000.00 start
```