

Synthetic Server Requirements

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This page lists the Synthetic Server requirements, offers sizing guidance, and shows you how to modify the default settings.

AppDynamics Platform Requirements

To deploy the Synthetic Server, you need to install the following AppDynamics platforms:

Component	Minimum Version
Controller	4.5.0 and higher
Events Service	4.5.0 and higher
Synthetic Agent	<ul style="list-style-type: none">• Synthetic Private Agent 4.5.4 or higher• Synthetic Hosted Agent 4.5.13 or higher

 Certain Synthetic Server features—specifically, Synthetic Sessions Analytics, features of Application Analytics that extend the functionality of Synthetic Sessions—require access to the AppDynamics Events Service.

Synthetic Agent Requirements

The following table lists the requirements for deploying Synthetic Private Agents and Synthetic Hosted Agents.

Synthetic Agent	Requirements
Synthetic Private Agents	See Requirements for the Synthetic Private Agent .
Synthetic Hosted Agents	<ul style="list-style-type: none">• Synthetic Hosted Agent license• AppDynamics Access (HMAC) Key (part of the license file for Synthetic Hosted Agent)

Hardware Requirements

These requirements assume that the Synthetic Server is installed on a separate machine. If other AppDynamics platforms are installed on the same machine, the requirements (particularly for memory) could vary greatly and require many more resources.

- Storage: 50 GB free disk space
- Memory: 8 GB memory
- CPU: 64-bit CPU with at least 2 cores
- Network bandwidth: 50 Mbps

 NTP should be enabled on both the EUM Server host and the Controller machine. The machine clocks need to be able to synchronize.

Scaling Requirements

You are required to have one EUM account for each on-premises deployment of the Synthetic Server. The machine hosting the Synthetic Server should be able to support 100 concurrent Synthetic Agents or 10 locations with 10 Synthetic Agents per location.

If you need the Synthetic Server to support more than 100 concurrent Synthetic Agents, see [Increase the Synthetic Agent Support](#).

Operating System Support

The Synthetic Server is supported on the following operating systems:

Linux (64 bit)
<ul style="list-style-type: none">• RHEL 6.x and 7.x• CentOS 6 and 7• Ubuntu 14 and 16• SUSE 12

You can use the following file systems for machines that run Linux:

- ZFS
- EXT4
- XFS

 On-premises deployments on Linux are only supported on Intel architecture. Windows is not supported at this time.

Network Requirements

The network settings on the operating system need to be tuned for high-performance data transfers. Incorrectly tuned network settings can manifest themselves as stability issues.

The following command listing demonstrates tuning suggestions for Linux operating systems. As shown, AppDynamics recommends a TCP/FIN timeout setting of 10 seconds (the default is typically 60), the TCP connection `keepalive` time to 1800 seconds (reduced from 7200, typically), and disabling TCP window scale, TCP SACK, and TCP timestamps.

```
echo 5 > /proc/sys/net/ipv4/tcp_fin_timeout
echo 1800 >/proc/sys/net/ipv4/tcp_keepalive_time
echo 0 >/proc/sys/net/ipv4/tcp_window_scaling
echo 0 >/proc/sys/net/ipv4/tcp_sack
echo 0 >/proc/sys/net/ipv4/tcp_timestamps
```

The commands demonstrate how to configure the network settings in the `/proc` system. To ensure the settings persist across system reboots, be sure to configure the equivalent settings in the `etc/sysctl.conf` or the network stack configuration file appropriate for your operating system.

Software Requirements

The Synthetic Server requires the following software to run and function correctly. You are *required* to have outbound internet access to install Python, `pip`, and `flake8`.

Software	Required Version	Function
Java	8	The Synthetic Server requires JDK 8 to run services such as Synthetic Scheduler and Synthetic Shepherd. You need to set the environmental variable <code>JAVA_HOME</code> to the home directory of the JDK.
Python	2.7	The Synthetic Server relies on Python to validate scripts.
<code>pip</code>	9+	Python uses <code>pip</code> to install software. For example, <code>pip</code> could be used on some Linux distributions to install <code>flake8</code> , a Python utility used to lint scripts. If the machine where you're installing the Synthetic Server does <i>not</i> have Internet access, run the following steps to fetch and install <code>flake8</code> :

1. From a machine with internet access and `pip` installed:

a. Create a directory for the `flake8` library:

```
mkdir ~/flake8
```

b. Download the `flake8` package:

Python

```
python -m pip download flake8 -d ~/flake8
```

Python 3

```
python3 -m pip download flake8 -d ~/flake8
```

c. Zip and tar the `flake8` package:

```
tar cvfz flake8.tgz ~/flake8
```

d. Copy `flake8.tgz` to the `$HOME` directory of the host machine of the Synthetic Server.

		<p>2. From the host of the Synthetic Server that has no internet access, but does have <code>pip</code> installed:</p> <p>a. Unzip and extract the <code>flake8.tgz</code> file:</p> <pre>tar xvfz flake8.tgz ~/flake8</pre> <p>b. Change to the <code>flake8</code> directory.</p> <p>c. Install the <code>flake8</code> library with <code>pip</code> with the following command, replacing <code><version></code> with the correct version.</p> <pre>Python python -m pip install flake8-<version>-py2.py3-none-any.whl -f ./ --no-index</pre> <pre>Python 3 python3 -m pip install flake8-<version>-py2.py3-none-any.whl -f ./ --no-index</pre>
libaio	N/A	<p>The Synthetic Server requires the <code>libaio</code> library to be on the system. This library facilitates asynchronous I/O operations on the system.</p> <p>See How to Install libaio for instructions.</p>

How to Install libaio

Install `libaio` on the host machine if it does not already have it installed. You may require outbound internet access if you don't have a locally hosted repository.

The following table provides instructions on how to install `libaio` for some common flavors of the Linux operating system. Note, if you have a NUMA based architecture, then you are required to install the `numactl` package.

Linux Flavor	Command
Red Hat and CentOS	<p>Use <code>yum</code> to install the library, such as:</p> <ul style="list-style-type: none"> <code>yum install libaio</code> <code>yum install numactl</code>
Fedora	<p>Install the library RPM from the Fedora website:</p> <ul style="list-style-type: none"> <code>yum install libaio</code> <code>yum install numactl</code>

Ubuntu	Use apt-get, such as: <ul style="list-style-type: none">• <code>sudo apt-get install libaiol</code>• <code>sudo apt-get install numactl</code>
Debian	Use a package manager such as APT to install the library (as described for the Ubuntu instructions above).