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Enterprise

# HPE IMC APM

## JBoss AS Server Application Monitor Configuration Examples

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# Introduction

This document provides examples for configuring APM to monitor JBoss AS on Windows and Linux hosts in a data center.

## Prerequisites

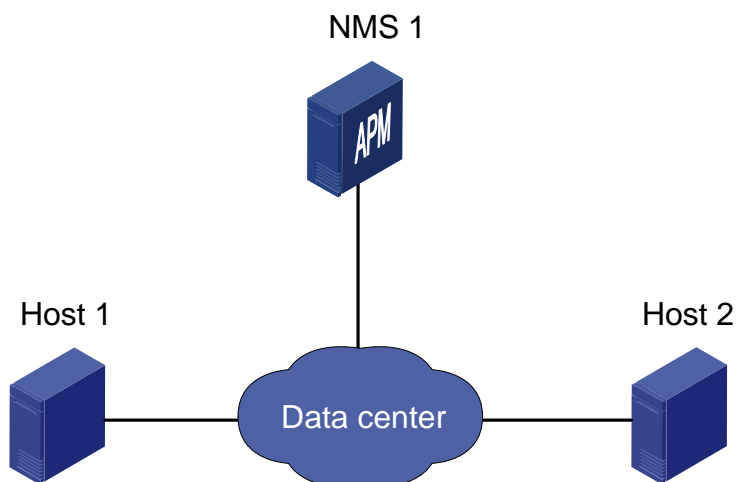
Make sure JBoss AS servers are deployed and configured.

## Example: Using APM to monitor JBoss AS

### Network requirements

As shown in [Figure 1](#), a company's data center uses two JBoss AS servers to provide Java-based R&D applications and office applications. The administrator uses APM to monitor the JBoss AS servers.

**Figure 1 Network diagram**



**Table 1 Host addresses and software versions**

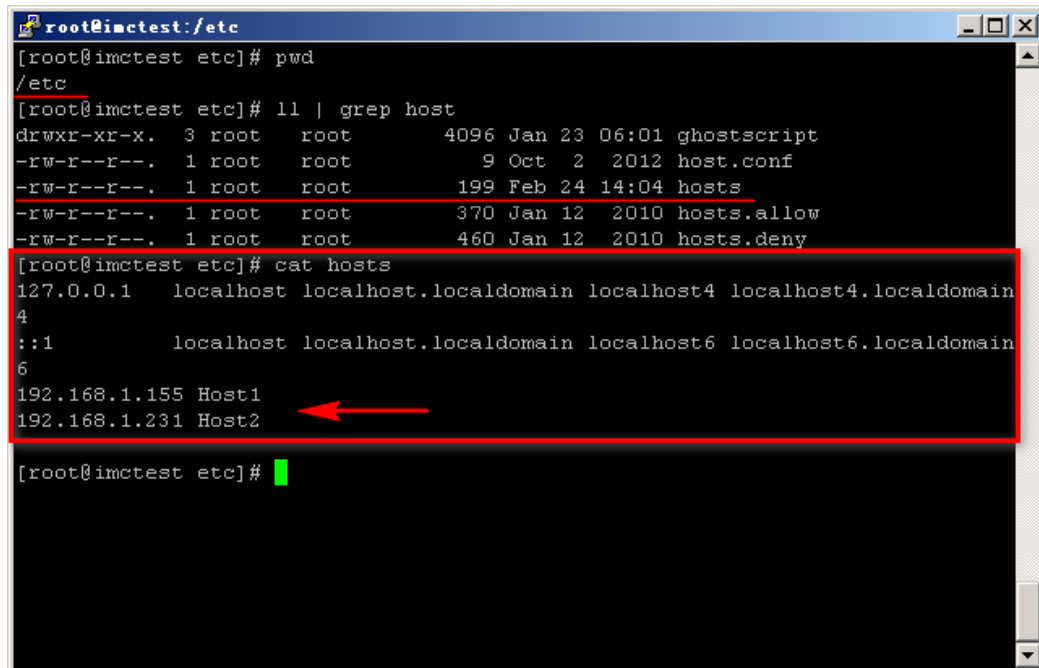
Host	IP address	Software version
NMS 1	192.168.1.170	<ul style="list-style-type: none"><li>Windows Server 2008 R2</li><li>IMC PLAT 7.2 (E0403)</li><li>IMC APM 7.2 (E0401)</li></ul>
Host 1	192.168.1.155	<ul style="list-style-type: none"><li>Windows Server 2008 R2</li><li>JBossAS 4.2.3</li></ul>
Host 2	192.168.1.231	<ul style="list-style-type: none"><li>RedHat Enterprise Linux Server 6.4</li><li>JBossAS 5.0.1</li></ul>

# Configuration restrictions and guidelines

When you modify the hosts file, follow these restrictions and guidelines:

- If IMC is deployed in distributed mode, you must modify the hosts file on the IMC server where APM is deployed.
- If IMC is deployed on Linux, you must modify the hosts file in the `/etc/hosts` directory.

**Figure 2 Modifying the hosts file on Linux**

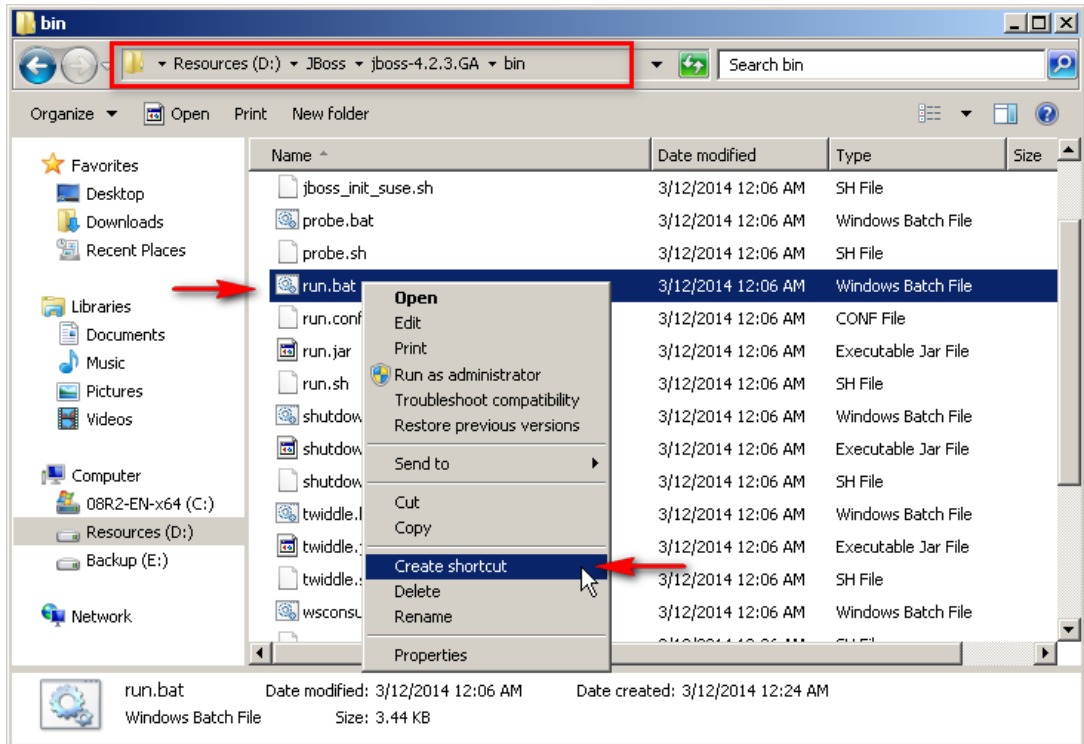


```
root@imctest: /etc
[root@imctest etc]# pwd
/etc
[root@imctest etc]# ll | grep host
drwxr-xr-x. 3 root root 4096 Jan 23 06:01 ghostscript
-rw-r--r--. 1 root root 9 Oct 2 2012 host.conf
-rw-r--r--. 1 root root 199 Feb 24 14:04 hosts
-rw-r--r--. 1 root root 370 Jan 12 2010 hosts.allow
-rw-r--r--. 1 root root 460 Jan 12 2010 hosts.deny
[root@imctest etc]# cat hosts
127.0.0.1 localhost localhost.localdomain localhost4 localhost4.localdomain
4
::1 localhost localhost.localdomain localhost6 localhost6.localdomain
6
192.168.1.155 Host1
192.168.1.231 Host2
[root@imctest etc]#
```

## Configuring JBoss AS startup parameters on host 1

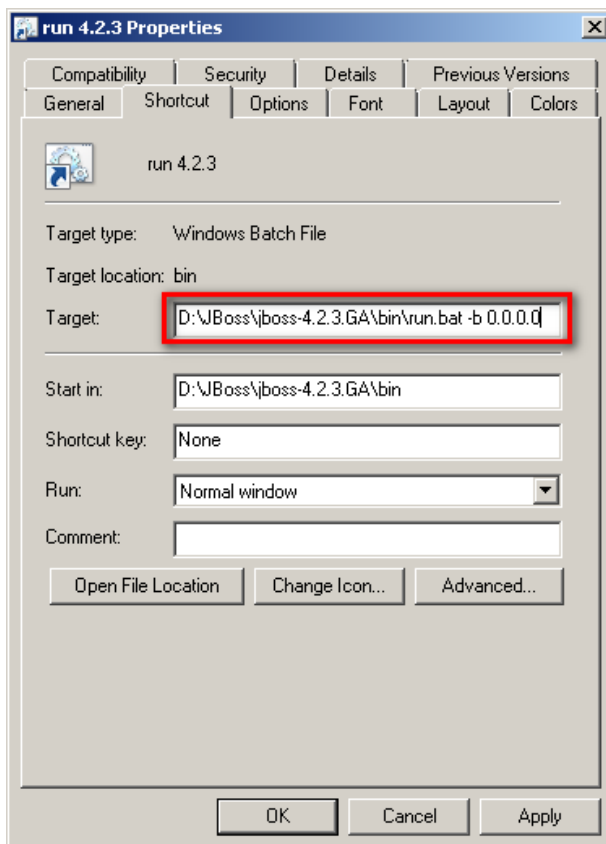
1. Log in to Windows.
2. Enter the directory where the JBossAS startup file is saved.  
This example uses the `D:\JBoss\jboss-4.2.3 GA\bin` directory.
3. Right-click the `run.bat` file and select **Create shortcut**, as shown in [Figure 3](#).  
The shortcut named `run 4.2.3` is created.

**Figure 3 Creating a shortcut**



4. Right-click the **run 4.2.3** shortcut and select **Properties**.
5. Add **-b 0.0.0.0** to the value in the **Target** field, as shown in [Figure 4](#).

**Figure 4 Setting the Target parameter**

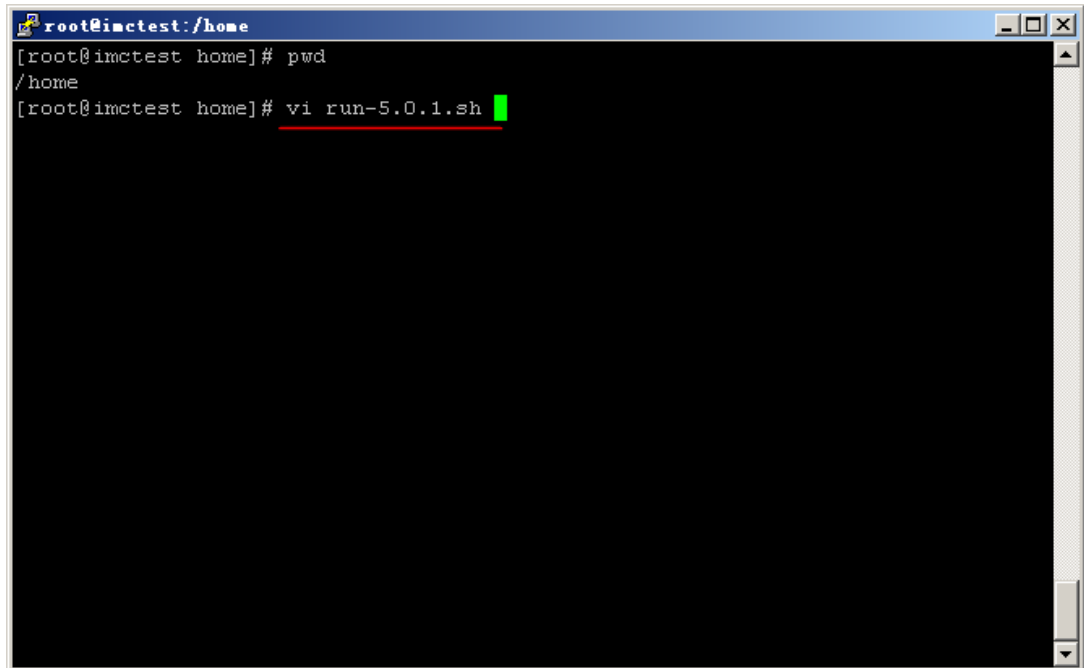


6. Click OK.

## Configuring JBoss AS startup parameters on host 2

1. Log in to Linux as a root user.
2. Create a startup script file `run-5.0.1.sh` in the `/home` directory and edit it, as shown in [Figure 5](#).

**Figure 5** Creating and editing the startup script file



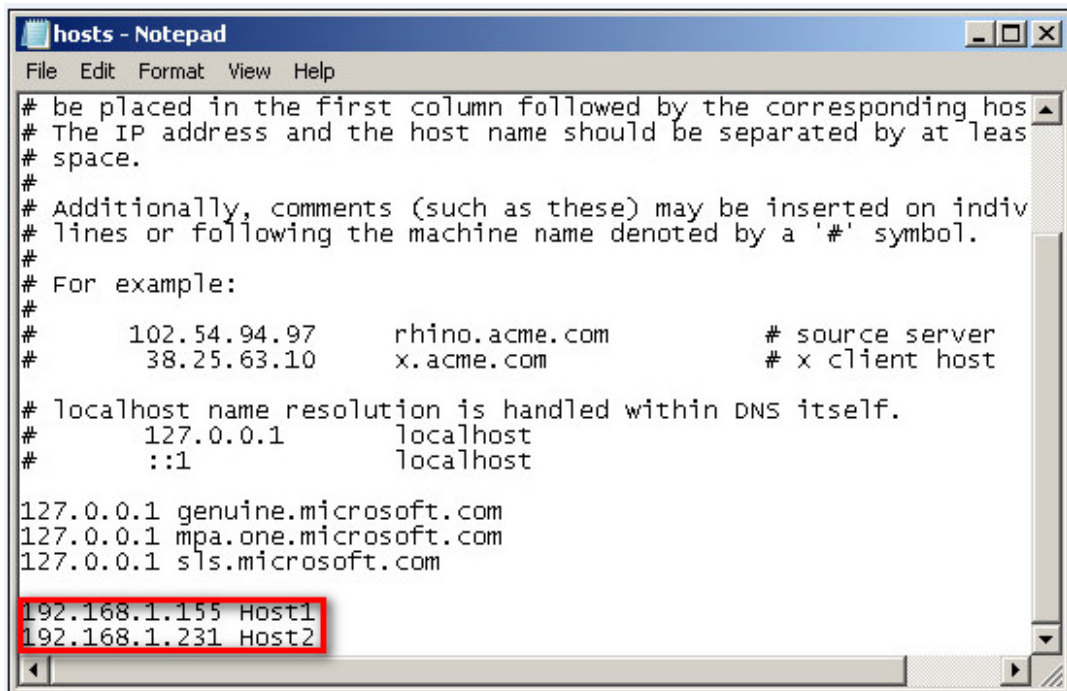
```
root@imctest: /home
[root@imctest home]# pwd
/home
[root@imctest home]# vi run-5.0.1.sh
```

3. Save and close the file.



2. Use the text editor to open the **C:\Windows\System32\drivers\etc\hosts** file.  
In this example, use Notepad to edit the file.
3. Add the mapping between hosts and IP addresses, as shown in [Figure 8](#).

**Figure 8 Adding the mapping between hosts and IP addresses**



4. Save the file.

## Adding application monitors for JBoss AS servers

1. Click the **Resource** tab.
2. From the navigation tree, select **Application Management > Add Application**.
3. Click **JBoss Server**.  
The page for add monitor for JBossAS appears.
4. Configure the following monitoring parameters for JBoss AS 4.2.3 on host 1, as shown in [Figure 9](#).
  - o Enter **192.168.1.155** in the **IP Address** field.  
The **Name** field is automatically populated with **JBoss\_192.168.1.155**.
  - o Use the default settings of other parameters.



## Figure 9 Adding an application monitor for JBoss AS 4.2.3

Resource > Application Monitor > Add Application > JBoss Server

### Add Application

IP Address *	<input type="text" value="192.168.1.155"/>	<input type="button" value="Select"/>
Name *	<input type="text" value="JBoss_192.168.1.155"/>	
Use Template *	<input type="text" value="Disable"/>	
Description	<input type="text"/>	
Application Monitor Port *	<input type="text" value="1099"/>	
Polling Interval (min) *	<input type="text" value="5"/>	
Contact *	<input type="text" value="admin"/>	<input type="button" value="?"/>
APM Server *	<input type="text" value="127.0.0.1(JBoss:0/8)"/>	
Related Applications	<input type="text"/>	<input type="button" value="Add"/> <input type="button" value="Delete"/>
Application Group	<input type="text"/>	<input type="button" value="Add"/> <input type="button" value="Delete"/> <input type="button" value="Add Application group"/>
Detect Application	<input checked="" type="checkbox"/>	

5. Click **OK**.  
The application monitor named **JBoss\_192.168.1.155** appears on the application monitor list.
6. Click **Add**.
7. Click **JBoss Server**.
8. Configure the following monitoring parameters for JBoss AS 5.0.1 on host 2, as shown in [Figure 10](#).
  - o Enter **192.168.1.231** in the **IP Address** field.  
The **Name** field is automatically populated with **JBoss\_192.168.1.231**.
  - o Use the default settings of other parameters.

**Figure 10 Adding an application monitor for JBoss AS 5.0.1**

Resource > Application Monitor > Add Application > JBoss Server

**Add Application**

IP Address \*  Select

Name \*

Use Template \*

Description

Application Monitor Port \*

Polling Interval (min) \*

Contact \*  ?

APM Server \*

Related Applications

Application Group

Detect Application

Add  
Delete

Add  
Delete  
Add Application group

OK Cancel

9. Click **OK**.

The application monitor named **JBoss\_192.168.1.231** appears on the application monitor list, as shown in [Figure 11](#).

**Figure 11 Application monitor list**

Resource > Application Monitor ★ Add to My Favorites ?

Add Delete Refresh Manage Unmanage Start Polling Custom Page APM Server  W

Import Password Export Password Export Selected Export All

<input type="checkbox"/>	Name	Application Type	Speed(bps)	Traffic(I)	Traffic(O)	Availability	Health	Status	Associate	Restart Server	Modify	Delete
<input type="checkbox"/>	JBoss_192.168.1.155	JBoss Server	-	-	-	Available	Healthy	Managed				
<input type="checkbox"/>	JBoss_192.168.1.231	JBoss Server	-	-	-	Available	Healthy	Managed				

1-2 of 2. Page 1 of 1. ← 1 → 50

## Verifying the configuration

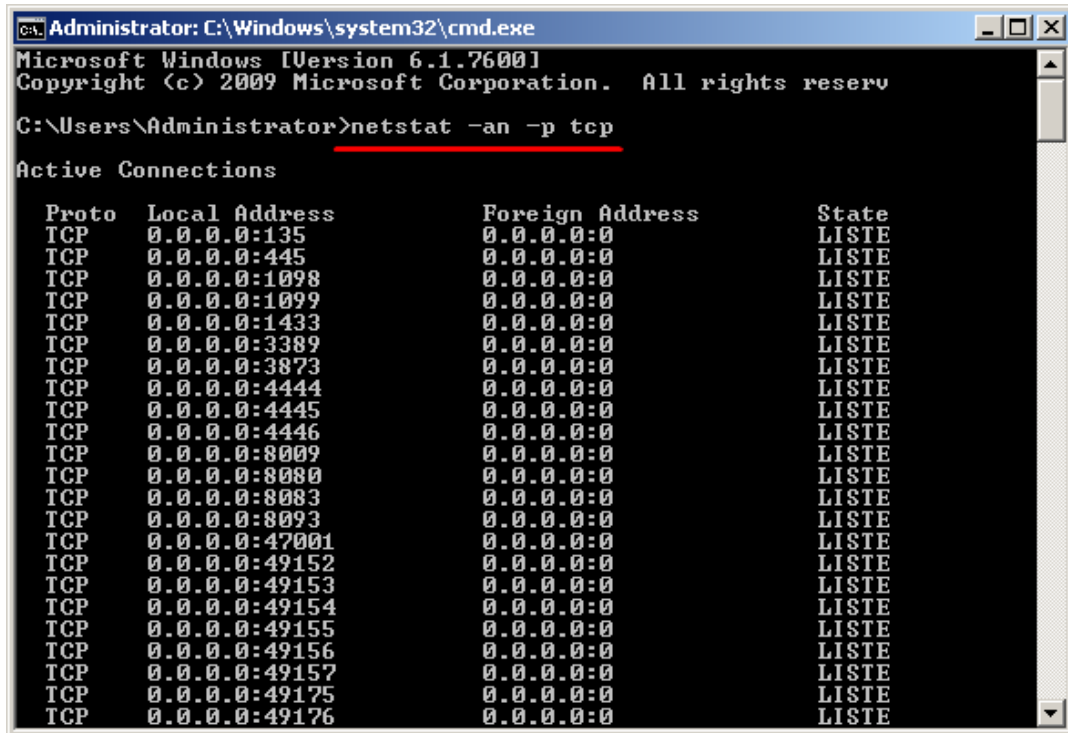
### Verifying JBoss AS monitor on host 1

# Display IP address-to-port bindings.

```
netstat -an -p tcp
```

The command output shows that JBoss AS ports (1099 and 8080) are bound to the IP address 0.0.0.0, as shown in [Figure 12](#). This is because these ports are monitored by APM.

Figure 12 Displaying address-to-port bindings in Windows



```
Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved

C:\Users\Administrator>netstat -an -p tcp

Active Connections

Proto Local Address           Foreign Address         State
TCP   0.0.0.0:135              0.0.0.0:0              LISTENING
TCP   0.0.0.0:445              0.0.0.0:0              LISTENING
TCP   0.0.0.0:1098             0.0.0.0:0              LISTENING
TCP   0.0.0.0:1099             0.0.0.0:0              LISTENING
TCP   0.0.0.0:1433             0.0.0.0:0              LISTENING
TCP   0.0.0.0:3389             0.0.0.0:0              LISTENING
TCP   0.0.0.0:3873             0.0.0.0:0              LISTENING
TCP   0.0.0.0:4444             0.0.0.0:0              LISTENING
TCP   0.0.0.0:4445             0.0.0.0:0              LISTENING
TCP   0.0.0.0:4446             0.0.0.0:0              LISTENING
TCP   0.0.0.0:8009             0.0.0.0:0              LISTENING
TCP   0.0.0.0:8080             0.0.0.0:0              LISTENING
TCP   0.0.0.0:8083             0.0.0.0:0              LISTENING
TCP   0.0.0.0:8093             0.0.0.0:0              LISTENING
TCP   0.0.0.0:47001            0.0.0.0:0              LISTENING
TCP   0.0.0.0:49152            0.0.0.0:0              LISTENING
TCP   0.0.0.0:49153            0.0.0.0:0              LISTENING
TCP   0.0.0.0:49154            0.0.0.0:0              LISTENING
TCP   0.0.0.0:49155            0.0.0.0:0              LISTENING
TCP   0.0.0.0:49156            0.0.0.0:0              LISTENING
TCP   0.0.0.0:49157            0.0.0.0:0              LISTENING
TCP   0.0.0.0:49175            0.0.0.0:0              LISTENING
TCP   0.0.0.0:49176            0.0.0.0:0              LISTENING
```

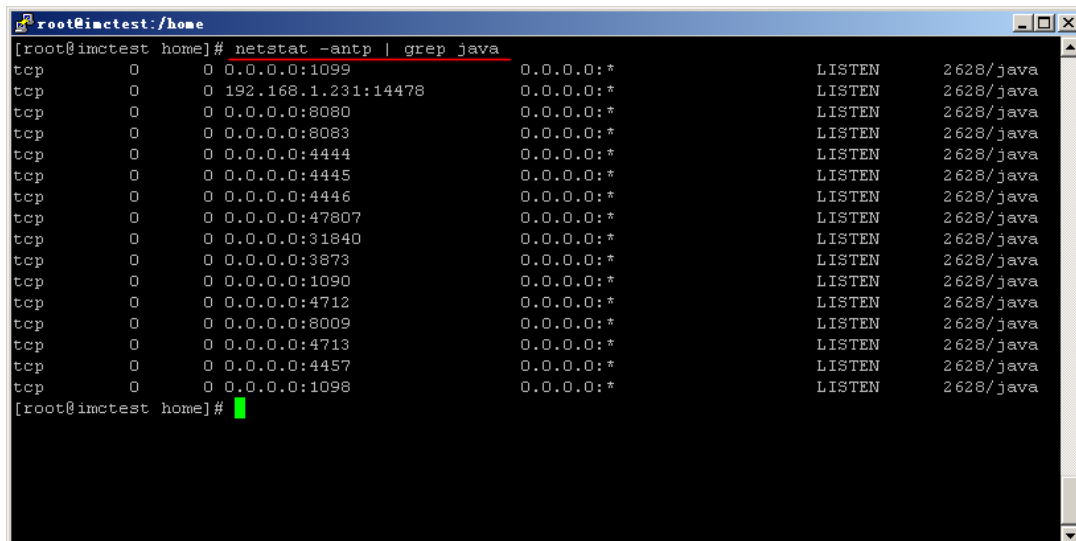
## Verifying JBoss AS monitor on host 2

# Display IP address-to-port bindings.

```
netstat -antp | grep java
```

The command output shows that JBoss AS ports (1099 and 8080) are bound to the IP address 0.0.0.0, as shown in [Figure 13](#). This is because these ports are monitored by APM.

Figure 13 Displaying address-to-port bindings in Linux



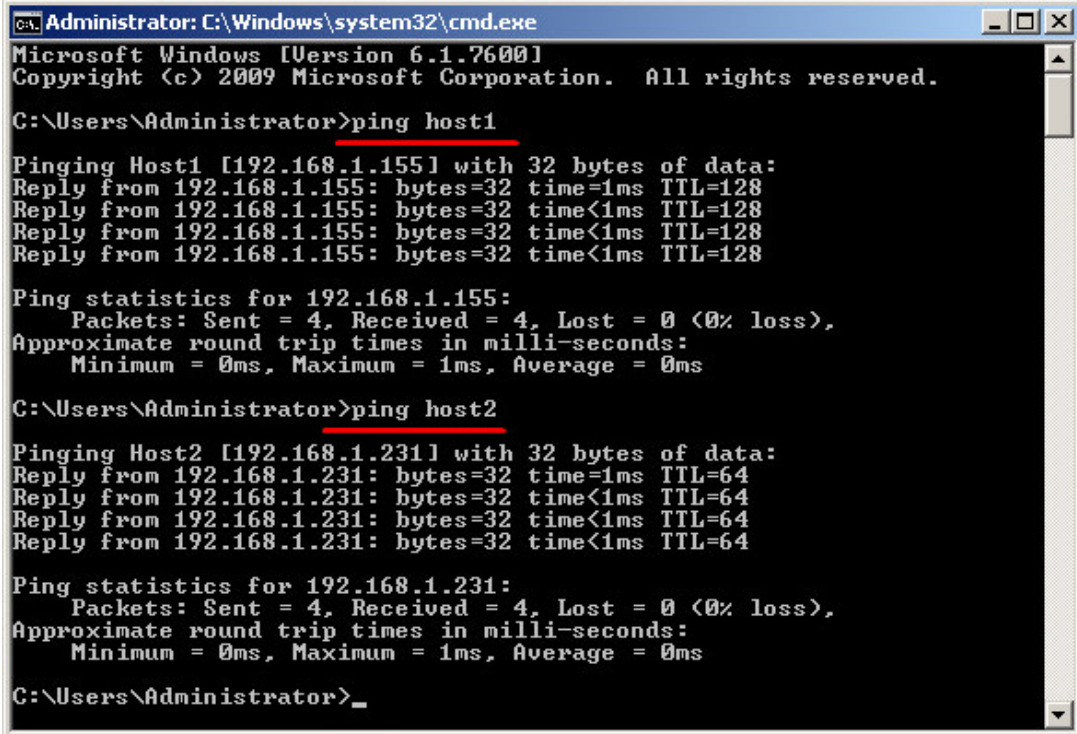
```
root@imctest:/home
[root@imctest home]# netstat -antp | grep java
tcp        0      0 0.0.0.0:1099          0.0.0.0:*              LISTEN     2628/java
tcp        0      0 192.168.1.231:14478  0.0.0.0:*              LISTEN     2628/java
tcp        0      0 0.0.0.0:8080         0.0.0.0:*              LISTEN     2628/java
tcp        0      0 0.0.0.0:8083         0.0.0.0:*              LISTEN     2628/java
tcp        0      0 0.0.0.0:4444         0.0.0.0:*              LISTEN     2628/java
tcp        0      0 0.0.0.0:4445         0.0.0.0:*              LISTEN     2628/java
tcp        0      0 0.0.0.0:4446         0.0.0.0:*              LISTEN     2628/java
tcp        0      0 0.0.0.0:47807        0.0.0.0:*              LISTEN     2628/java
tcp        0      0 0.0.0.0:31840        0.0.0.0:*              LISTEN     2628/java
tcp        0      0 0.0.0.0:3873         0.0.0.0:*              LISTEN     2628/java
tcp        0      0 0.0.0.0:1090         0.0.0.0:*              LISTEN     2628/java
tcp        0      0 0.0.0.0:4712         0.0.0.0:*              LISTEN     2628/java
tcp        0      0 0.0.0.0:8009         0.0.0.0:*              LISTEN     2628/java
tcp        0      0 0.0.0.0:4713         0.0.0.0:*              LISTEN     2628/java
tcp        0      0 0.0.0.0:4457         0.0.0.0:*              LISTEN     2628/java
tcp        0      0 0.0.0.0:1098         0.0.0.0:*              LISTEN     2628/java
[root@imctest home]#
```

## Verifying the hosts file configuration on the IMC server

Run the **Ping** command to check the hosts file configuration on the IMC server.

The command output shows that the configuration is correct, as shown in [Figure 14](#).

**Figure 14** Checking the hosts file



```
Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>ping host1

Pinging Host1 [192.168.1.155] with 32 bytes of data:
Reply from 192.168.1.155: bytes=32 time=1ms TTL=128
Reply from 192.168.1.155: bytes=32 time<1ms TTL=128
Reply from 192.168.1.155: bytes=32 time<1ms TTL=128
Reply from 192.168.1.155: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.155:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\Users\Administrator>ping host2

Pinging Host2 [192.168.1.231] with 32 bytes of data:
Reply from 192.168.1.231: bytes=32 time=1ms TTL=64
Reply from 192.168.1.231: bytes=32 time<1ms TTL=64
Reply from 192.168.1.231: bytes=32 time<1ms TTL=64
Reply from 192.168.1.231: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.1.231:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\Users\Administrator>_
```

## Viewing JBoss AS monitor reports in APM

1. Click the **Resource** tab.
2. From the navigation tree, select **Application Manager > Application Monitor**.
3. The application monitor list appears.
4. Click **JBoss\_192.168.1.155** and **JBoss\_192.168.1.231**.  
The monitor report appears, as shown in [Figure 15](#).

Figure 15 Viewing the JBoss monitor report

