

High availability configuration guide

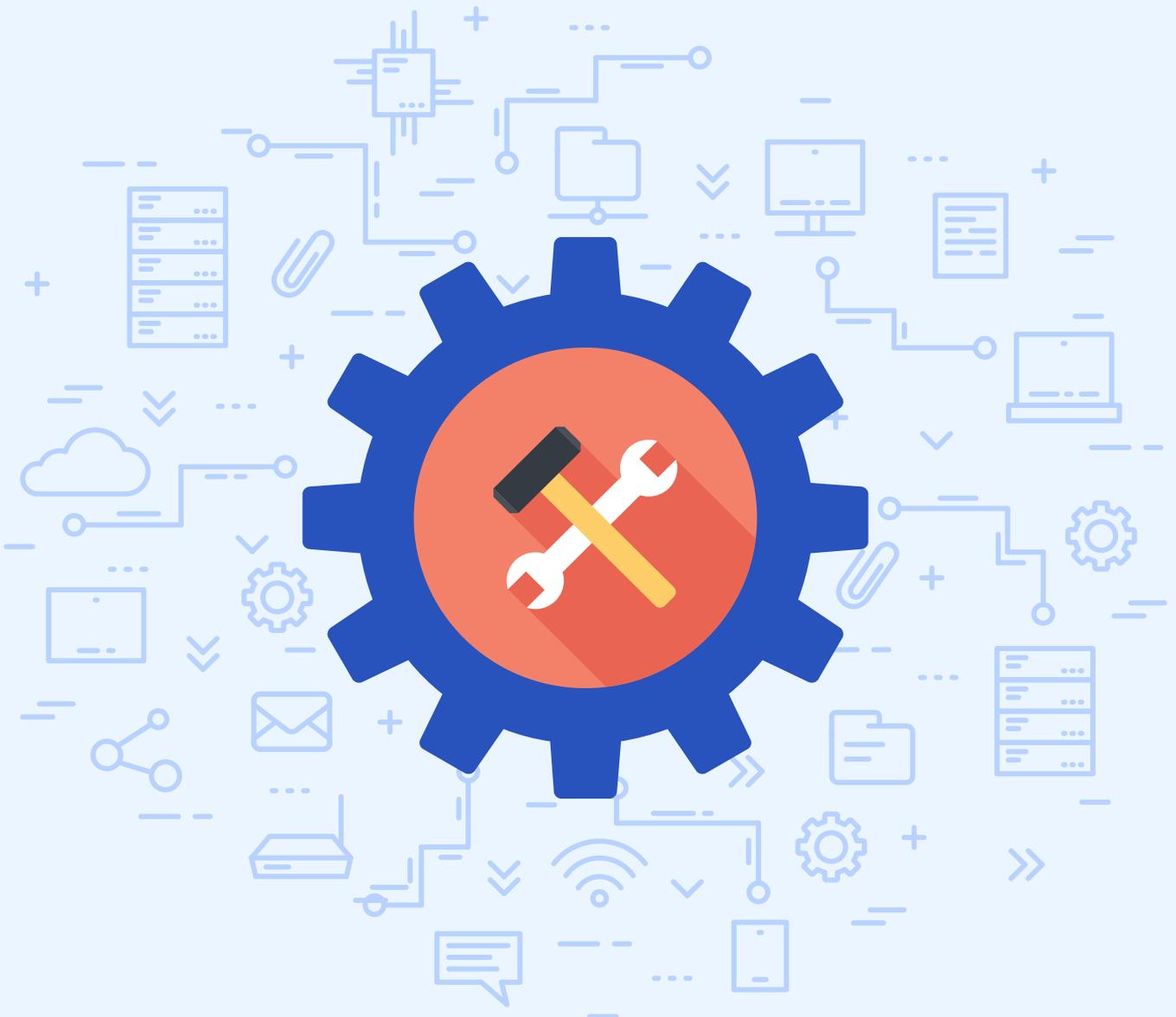


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1. Overview

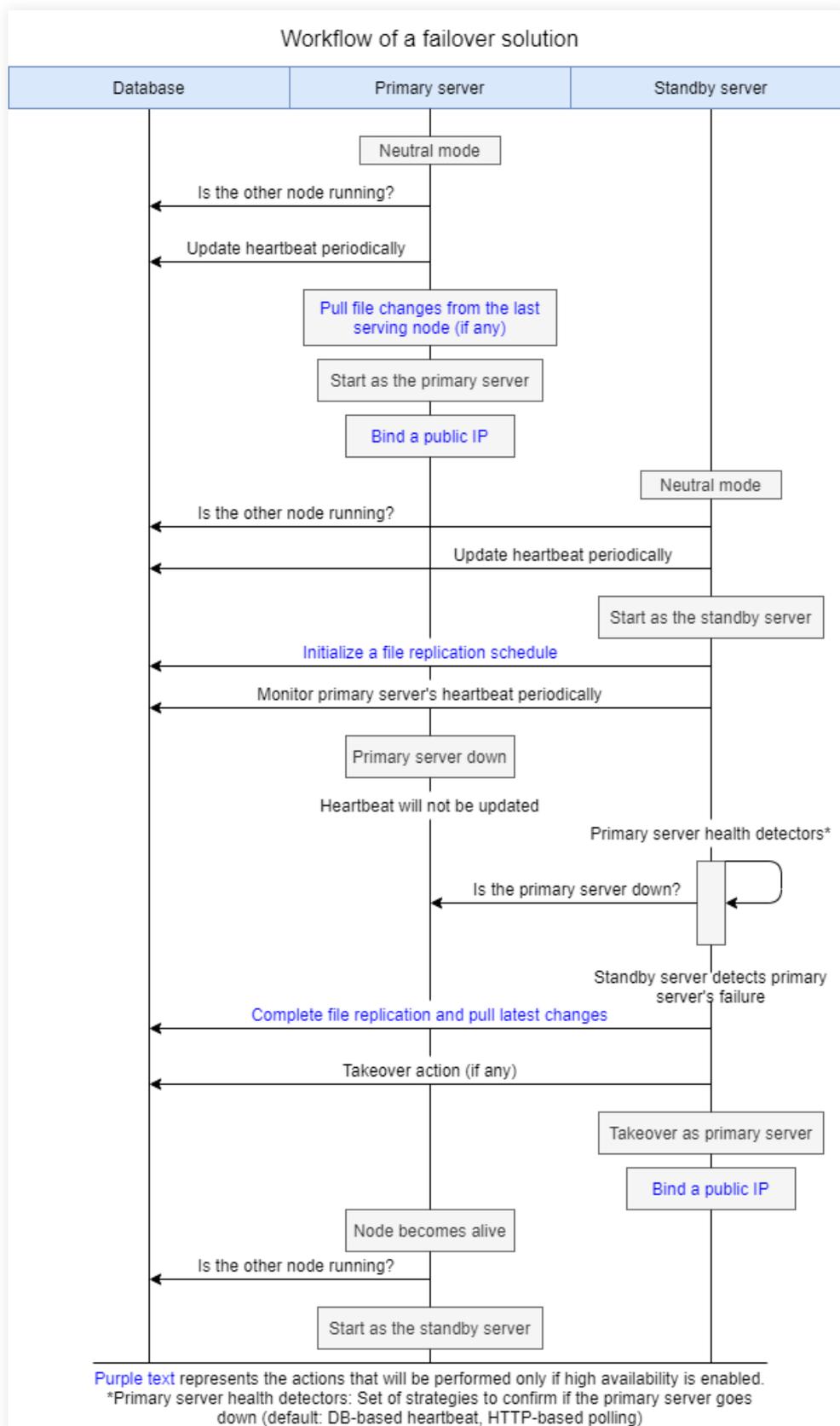
High availability, or failover, in ADAudit Plus is implemented through the hot standby model using two redundant servers. One acts as the primary server while the other acts as the standby server. When the primary server goes down, the standby server takes over as the primary server.

This guide takes you through the steps involved in implementing high availability in ADAudit Plus.

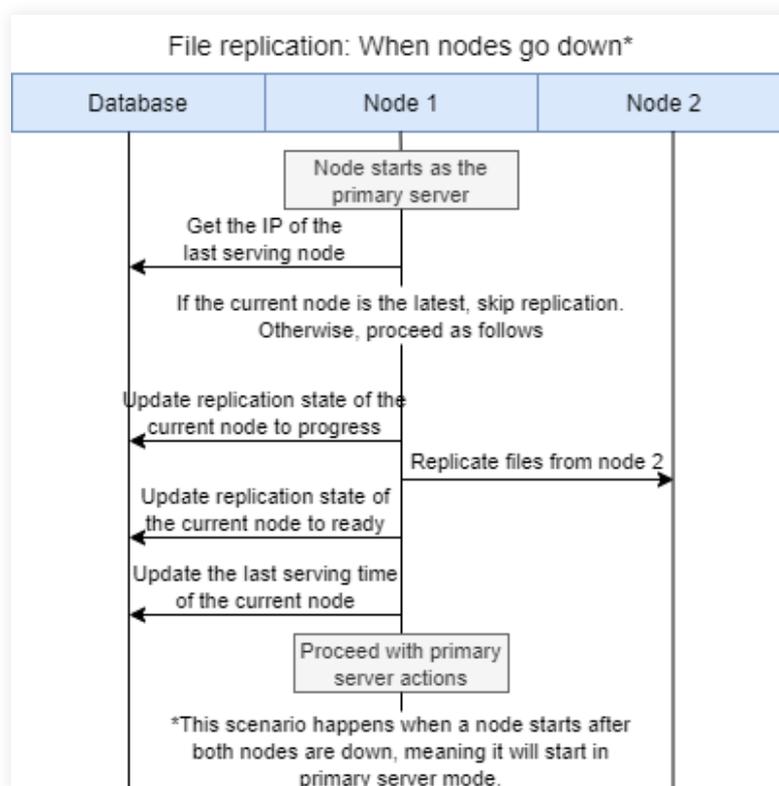
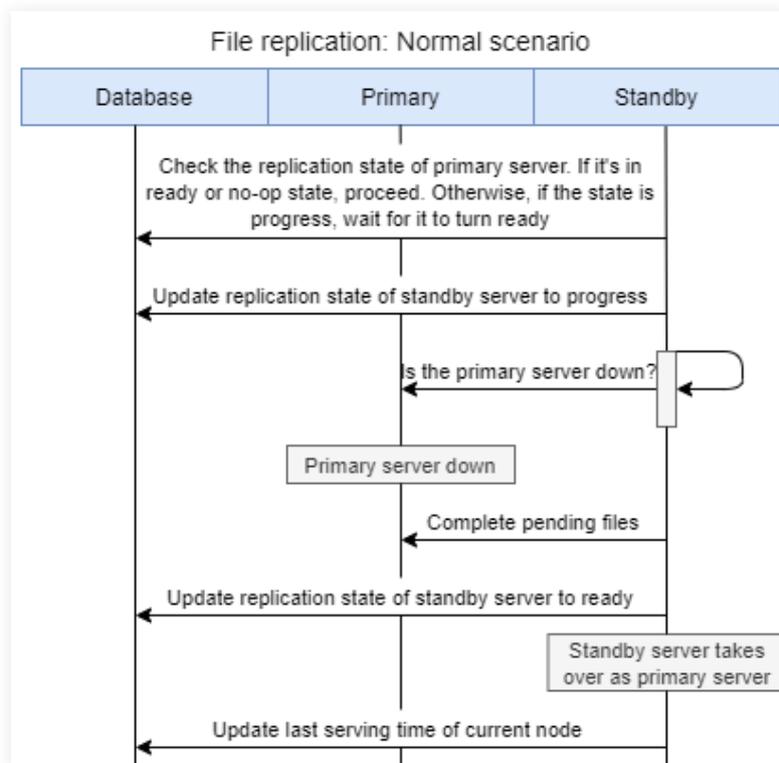
2. High availability workflow

- ▶ Setting up high availability requires three machines: one for the primary server, one for the standby server, and one for the database or the DataEngine.
- ▶ Both the primary and standby servers should have access to the common database (DB). ADAudit Plus supports both PostgreSQL and Microsoft SQL Server databases.
- ▶ The standby server monitors the health of the primary server using a DB-based heartbeat mechanism. The standby server will replicate files periodically from the primary server (if replication is enabled). Currently, replication is performed using Windows' robocopy command.
- ▶ Initially, the primary server runs the application and handles the user requests while the standby server monitors the live status of the primary server. When the primary server goes down, the standby server starts the application and takes over as the primary server. When the original primary server goes live again, it takes the role of the standby server.

Workflow diagram



Replication flow diagram



3. Prerequisites

- ▶ High availability setup in ADAudit Plus involves three machines:
 - One machine running the **primary server**
 - A second machine running the **standby server**
 - A third machine running the **database** or the **DataEngine server**
- ▶ All three machines should preferably be within the same intranet and IP address range (static IPs are preferred).
- ▶ The static IP addresses should be allocated as virtual IPs for failover configuration.
- ▶ It is recommended to provide an alias for the virtual IP.
- ▶ It is recommended to use Windows servers with at least 16GB of RAM and 4 core CPU for all three machines.
- ▶ The primary and standby servers should have ADAudit Plus installed and running as a service.
- ▶ The database or the DataEngine should be running as a service on the third server.

4. High availability setup

4.1 Database and DataEngine configuration

a. PostgreSQL database:

Copy the contents under the **pgsql** folder (<Product_home\pgsql) in the primary server and paste them in the database server.

In the database server, open **Command Prompt** as an administrator in the directory <pg_home>\bin, and run the following command to register the database service:

```
pg_ctl.exe register -N "ManageEngine ADAudit Plus - Database" -D ..\data -S demand
```

Modify the **postgresql.conf** file under <pg_home>\data by adding the following entry:

```
listen_addresses = '*'
```

Modify the **pg_hba.conf** file under <pg_home>\data by adding the following entries:

host	all	all	127.0.0.1/32	md5
host	all	all	<DB Server ip addr >/32	md5
host	all	all	<Primary Server ip addr>/32	md5
host	all	all	<Standby Server ip addr>/32	md5
host	all	all	<Public ip addr>/32	md5

Start the **ManageEngine ADAudit Plus - Database** service on the database server.

In both the primary and standby servers, modify the **database_params.conf** file under <Product_home>\conf by replacing **localhost** with the **database server name/ip address** in the following line:

```
url=jdbc:postgresql://localhost:33307/adap
```

b. Database - Microsoft SQL Server

Copy the **database_params.conf** file under <Product_home>\conf on the primary server and paste it into <Product_home>\conf on the standby server.

c. DataEngine

Download the **DataEngine** zip from [DataEngine_1_0_0](#) and unzip the contents in the DataEngine Server.

Open **Command Prompt** as an administrator in the directory <DataEngine home>\bin and run the batch file **Unpack.bat**.

Run the following command to install the DataEngine service:

```
wrapper.exe -i ..\conf\wrapper.conf
```

Copy the **data** and **db** folders under <Product_home>\apps\dataengine_xnode on the primary server and paste them in <DataEngine_home> on the DataEngine server.

In both the primary and standby servers, modify the **dataengine-xnodes.conf** file found in conf\DataEngine\engines\xnode by adding the **server name** and replacing **local** with **remote** as shown below:

```
xnode.host = <DataEngine server name>  
xnode.location = remote
```

In the DataEngine server, modify the **dataengine-xnode.conf** file found in apps\dataengine-xnode\conf by adding the key below to enable remote request processing.

```
xnode.connector.accept_remote_request=true
```

In the primary server, copy the **xnode.connector.password** value from the **dataengine-xnodes.conf** file found in conf\DataEngine\engines\xnode. Paste this value into the **dataengine-xnode.conf** file found in apps\dataengine-xnode\conf on the DataEngine server and into the **dataengine-xnodes.conf** file found in conf\DataEngine\engines\xnode on the standby server.

In both the primary and standby servers, modify the **datarepositories.conf** file found in conf\DataEngine\xnode\datarepository by adding the **server name** as shown below:

```
xnodes = <DataEngine server name>
```

Start the **ManageEngine ADAudit Plus - DateEngine** service.

4.2 Product configuration

Start the database service on the database server in case of PostgreSQL.

Start the ADAudit Plus service on the primary server.

Follow these steps to run the query:

In the primary server, log in to the ADAudit Plus web console.

Go to the **Support** tab and in the **Support Info** tile, click **More**.

Under the **ADAuditPlus DB Query** section, run the following query:

```
select max(config_id) from adshaconfiguration
```

For PostgreSQL:

```
insert into adshaconfiguration values (<value from query1 + 1>, 3, '<primary server name>', '<standby server name>', 'Postgres', '<public ip>', "", "", null)
```

For Microsoft SQL:

```
insert into adshaconfiguration values (<value from query1 + 1>, 3, '<primary server name>', '<standby server name>', 'mssql', '<public ip>', "", "", null)
```

In both the primary and standby servers, copy the **ifcheck.exe**, **iflist.exe**, **ipadd.exe**, and **ipdel.exe** files from <Product_home>\tools\fos\bin and paste them into <Product_home>\bin.

In both the primary and standby servers, copy the **fos.conf** file from <Product_home>\tools\fos, paste it into <Product_home>\conf, and modify the **IP properties** and **share name** as follows:

```
#IP address properties
#Server specific - use ipconfig to find IP address
ipaddr=<ip4 address>
#Server specific - to find run iflist.exe and use the 'Adapter Name' from the result
publicIP.Ifname=<Adapter Name>
#Server specific - use ipconfig to find subnet mask
publicIP.netmask=<subnet mask>
#Common IP for HA. It should be static IP
publicIP.ipaddr=<common IP address>
#Name of the share
repl.remoteinstallationDir=
```

In both the primary and standby servers, modify the **wrapper.conf** file under <Product_home>\conf by adding the following entries:

```
wrapper.event.wrapper_stop.command.argv.1=..\bin\ipdel.exe
wrapper.event.wrapper_stop.command.argv.2=<value of public IP to be unbound>
wrapper.event.wrapper_stop.command.block=TRUE
#wrapper.event.wrapper_stop.command.block.timeout=20
wrapper.event.wrapper_stop.command.on_exit.0=CONTINUE
wrapper.event.wrapper_stop.command.on_exit.default=CONTINUE
```

In both the primary and standby servers, copy the **module-startstop-processors.xml** file from <Product_home>\tools\fos\conf and paste it into <Product_home>\conf\Persistence.

In both the primary and standby servers, modify the **customer-config.xml** file under <Product_home>\conf by adding the following entries:

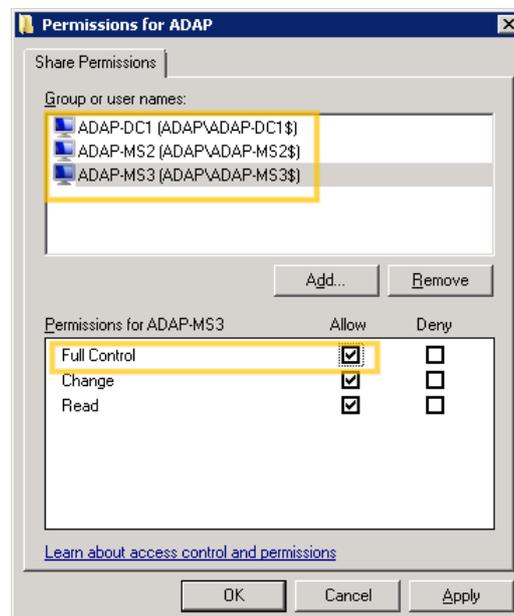
```
<configuration name="VersionHandler" value="com.manageengine.ads.fw.ha.
HAVersionHandler"/>
<configuration name="StartDBServer" value="false"/>
```

In both the primary and standby servers, modify the **product_detail.conf** file under <Product_home>\conf\product_detail.conf by changing the below entry:

IS_HA_ENABLED=true

Select the product installation folder on both instances and assign full control permission for the machine accounts of both instances and the database server.

Share the product installations of both instances with the share name as **MEADAP** and grant share permissions for all three machine accounts as shown in the image below:



Note:

In the above image, ADAP-DC1 is the database server, ADAP-MS2 is the primary server, and ADAP-MS3 is the standby server.