Deploy

Best Practices

Issue	01
Date	2023-05-26

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Contents

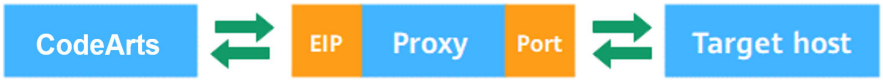
1 Deploying Tasks Using a Proxy Host

This section describes how to deploy an application on an intranet host or server using a proxy host.

Process

The Internet forward proxy function of Squid is used to specify the IP address and port of the target host on the proxy, enabling the target host to access the public network.

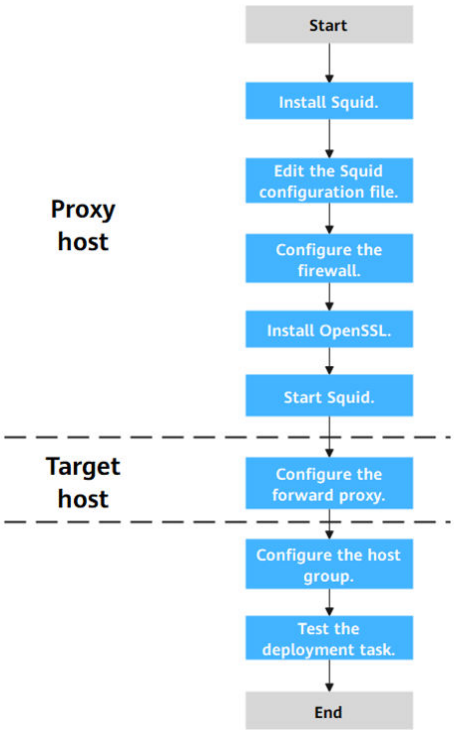
For more information about Squid, go to **Squid official website**. The following procedure uses a Linux host as an example.



Prerequisites

- A host **Proxy-B** bound to a public IP address is available. If no proxy host is available, see **Applying for an ECS**.
- A host (**Host-A**) not bound to a public IP address is available.
- **Proxy-B** and **Host-A** can access each other through the intranet.

Procedure



Step 1 Install Squid.

Access the command line tool of **Proxy-B** and run the following command:

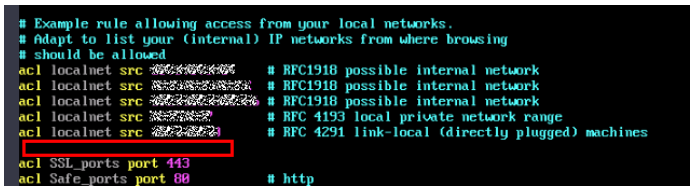
```
yum install squid -y
```

If **Complete** is displayed, run the following command:

```
yum install iptables-services
```

Enter **Y**. If **Complete** is displayed, the installation is complete.

Step 2 Edit the Squid configuration file.

1. Access the command line tool of **Proxy-B** and run the following command:
   ```
   vim /etc/squid/squid.conf
   ```
   

2. Add the following command to the position marked in the red box in the preceding figure:
   ```
   acl local src Internal IP address of the host/24
   ```
3. Press **Esc** and enter **:wq** to save the file and exit.

Step 3 Configure the firewall of **Proxy-B**.

Access the command line tool of **Proxy-B** and run the following commands in sequence:

```
systemctl stop firewalld.service
```



```
systemctl disable firewalld.service
yum install iptables-services iptables-devel -y
systemctl enable iptables.service
systemctl start iptables.service
iptables -I INPUT 1 -s Internal IP address of the host/24 -p tcp --dport 3128 -j ACCEPT
iptables -I INPUT 2 -p tcp --dport 3128 -j DROP
```

NOTE

The IP address in the last but one line must be set to the internal IP address segment or IP address of **Host-A**. **3128** is the proxy port of Squid.

Step 4 Install OpenSSL.

Access the command line tool of **Proxy-B** and run the following command:

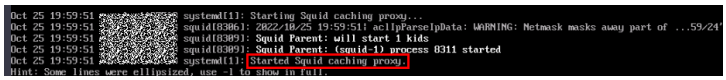
```
yum install openssl
```

If **Complete** is displayed, the installation is complete.

Step 5 Start Squid.

Access the command line tool of **Proxy-B** and run the following command:

```
systemctl start squid     //Start Squid.
systemctl status squid    //Check the status of Squid.
```



Step 6 Configure the forward proxy.

Access the command line tool of **Host-A** and run the following command:

```
echo "export http_proxy=http://Internal IP address of the proxy host:3128" >>/etc/profile
echo "export https_proxy=http://Internal IP address of the proxy host:3128" >>/etc/profile
echo "export http_proxy=http://Internal IP address of the proxy host:3128" >>~/.bashrc
echo "export https_proxy=http://Internal IP address of the proxy host:3128" >>~/.bashrc
echo "export http_proxy=http://Internal IP address of the proxy host:3128" >>~/.bash_profile
echo "export https_proxy=http://Internal IP address of the proxy host:3128" >>~/.bash_profile
source /etc/profile
source ~/.bashrc
source ~/.bash_profile
```

Step 7 Creating basic resources.

1. In the target project, choose **Settings** > **General** > **Basic Resources**. The Host Cluster page is displayed.
2. Click **Create Host Cluster**, enter the following information, and click **Save**.

Parameter	Mandatory	Description
Cluster Name	Yes	Enter a user-defined host cluster name.
OS	Yes	Select **Linux** based on the OS of the host to be added.
Proxy Access	Yes	Enable the option.

Parameter	Mandatory	Description
Execution host	Yes	A resource pool is a collection of physical environments where deployment commands are executed during software package deployment. In this scenario, the execution host uses an official resource pool.
Description	No	Enter the description of the host cluster.

3. Click **Create Proxy Host**, enter the following information, and click **OK**.

Table 1-1 Parameters of the proxy host in the Linux operating system

Parameter	Mandatory	Description
Host Name	Yes	Enter a user-defined proxy host name, for example, proxy host-B.
IP	Yes	Enter the public IP address bound to proxy Host-B.
OS	Yes	Keep the default value because it is the OS of your host cluster.
Authorization	Yes	In this scenario, the password is used for authentication. Enter the username and password of Proxy-B.
SSH Port	Yes	Port **22** is recommended.

4. Click **Add Target Host**, enter the following information, and click **OK**.

Table 1-2 Parameters of the target host running the Linux operating system

Parameter	Mandatory	Description
Host Name	Yes	Enter the user-defined name of the target host, for example, Host-A.
Proxy Hosts	Yes	Select Proxy host-B as the network proxy for the target host that cannot connect to the public network.
IP	Yes	Enter the private IP address of deployment host -A.
OS	Yes	Keep the default value because it is the OS of your host cluster.

Parameter	Mandatory	Description
Authorization	Yes	In this scenario, the password is used for authentication. Enter the username and password of Host-A.
SSH Port	Yes	Port 22 is recommended.

5. Click ▷ in the Operation column of a host to start the host for connectivity verification.

Step 8 Create an application.

1. Log in to the CodeArts homepage and click the target project name to access the project.
2. Choose **CICD** > **Deploy**.
3. Click **Create Application**. On the **Set Basic Information** page that is displayed, modify the basic information such as **App Name**, **Description**, and **Execution Resource Pool** as required.
4. After editing the basic application information, click **Next**. On the deployment template selection page that is displayed, select **Blank Template** and click **OK**.
5. On the **Deployment Actions** tab page, find the right list, click **Add** to add a target action to the orchestration area.
6. On the Environment Mgmt page, click **Create Environment**, enter basic environment information, and click **Save**.
7. Click **Import Host**. The system automatically filters all clusters that meet the requirements of the current environment. In the dialog box that is displayed, select the target host cluster and import Proxy-B and Host-A to the environment.

NOTE

Set the OS of the host group to Linux.

Step 9 Deploy the application. For details, see Managing applications.

----End

2 Using Nginx for Gray Release

Based on the Nginx load balancing (LB) mechanism, this practice implements blue-green release and gray release capabilities in host deployment scenarios. For more information about Nginx, see **Nginx official website**.

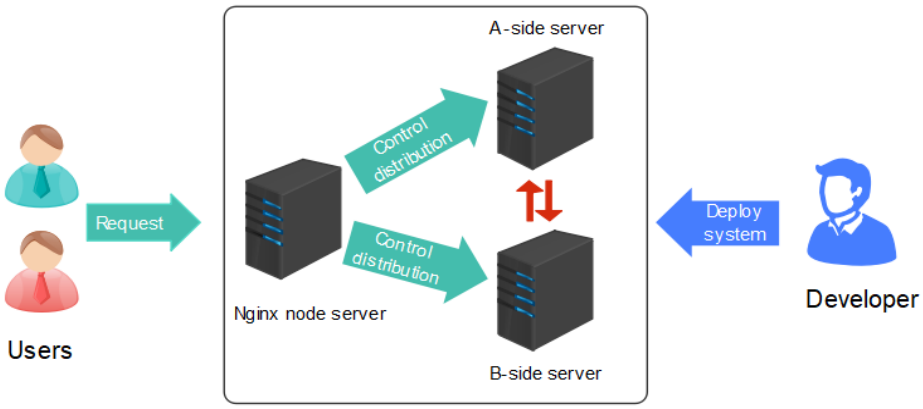
Application Scenario

When you upgrade a new system, services may be stopped or gray verification may fail. In this practice, you can use the nginx load balancing mechanism for smooth system upgrade without affecting service running.

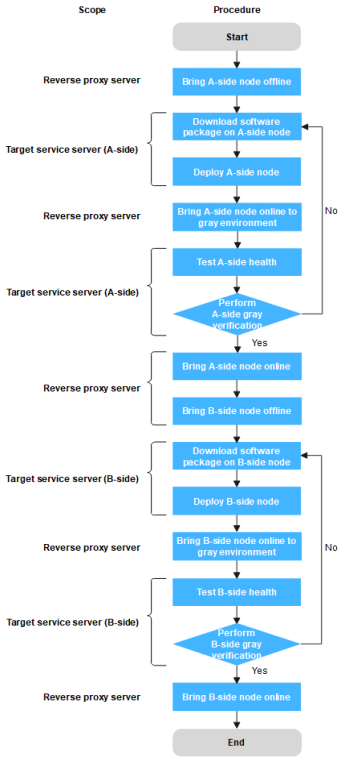
Solution Architecture

During system upgrade, if the blue-green deployment mode is used, developers bring the server on side A (original blue environment) offline and distribute all access traffic to the server on side B. In this case, the server on side A is upgraded. After the A-side server is upgraded, set the server as the gray test environment. A tester performs gray verification on the B-side server. After the gray verification is complete and the functions are normal, the A-side server (green environment) is officially released, and all traffic is distributed to the A-side server. In this case, the blue-green deployment is complete. If an emergency occurs on the A-side server during service running, perform a blue-green switchover to quickly restore services.

Figure 2-1 Gray release scheme



If you use canary release, repeat the preceding operations to upgrade the B-side server, complete the gray test, and release the system officially. In this case, the gray release of the new system is complete.



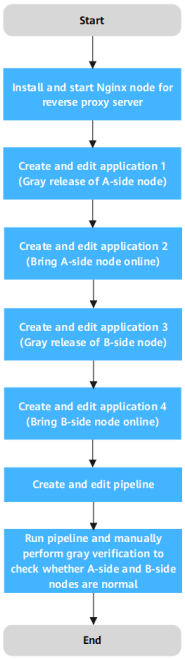
Prerequisites

- A project is available. If no project is available, **create a project** first.
- You have the permission to create applications. For details, see **Editing Permissions**.
- Target service servers **A_test** and **B_test** are available, and application services are running on the servers.
- A reverse proxy server **Gray_release** is available.
- A gray verification host is available. This host represents a gray tester.

NOTE

Ensure that servers can communicate with each other. For example, add all servers to the same VPC.

Procedure



Step 1 (Optional) Install and start an Nginx node for a reverse proxy server.

NOTE

If the Nginx node has been installed and started on your reverse proxy server, skip this step.

1. Create basic resources.
   a. In the target project, choose **Settings** > **General** > **Basic Resources**. The Host Cluster page is displayed.
   b. Click **Create Host Cluster**, enter basic information such as the cluster name, operating system, proxy access, execution host, and description, and click **Save**.
   c. Click **Create Target Host**, enter the host name (for example, A_test, B_test, or Gray_release), IP address, username, password/key, and SSH port, and click **OK**. Repeat the preceding steps to create the three target hosts and verify the connectivity.
2. Create an application.
   a. Choose **CICD** > **Deploy**.
   b. Click **Create Application**. On the **Set Basic Information** page that is displayed, modify the basic information such as **App Name**, **Description**, and **Execution Resource Pool** as required.
   c. After editing the basic application information, click **Next**. The deployment template selection page is displayed.
   d. Select **Blank Template** and click **OK**. The **Deployment Actions** tab page is displayed.
3. Edit the application.
   a. Switch to the **Environment Management** tab page and add and edit an environment.

- Click **Create Environment**, enter the environment name, for example, **Reverse proxy server group**, select the operating system corresponding to the server, and enter the description.
- Click **Save**. The environment is created.
- Click **Import Host**. The system automatically filters all clusters that meet the requirements of the current environment. In the dialog box that is displayed, select the target host cluster and click  in the Operation column of the target host to import the host to the environment.

b. Switch to the **Deployment Actions** tab page. Add and edit the following steps:

- Add the **Install Nginx** action and modify the parameters in the following table (Linux is used as an example).

Table 2-1 Parameter example

Parameter	Description
Host Group **Environment**	Select **Reverse_proxy_server_group**.
Nginx Version	Select a target version. Example: nginx-1.14.2.
Installation Path	Enter the installation path of the Nginx service in the target environment. Example: **/usr/local/nginx**.

- Add the **Start/Stop Nginx** action and modify the parameters in the following table (Linux is used as an example).

Table 2-2 Parameter example

Parameter	Description
Host Group **Environment**	Select **Reverse_proxy_server_group**.
Operation	Select **Start Nginx**.
Nginx Installation Path	Enter the installation path of the Nginx service in the target host group. Example: **/usr/local/nginx**.

c. Click **Save & Deploy** to deploy the application.

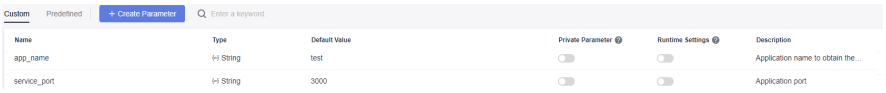
4. Deploy the application.

   After the deployment is complete, the application status bar changes to green and the message **Successful** is displayed, indicating that the application is successfully deployed.

If the application status bar turns red and displays **Failed**, the application fails to be deployed. In this case, click **View Solution**.

Step 2 Create and edit application 1 (Gray release of A-side node).

1. Create an application.
   a. Choose **CICD** > **CodeArts Deploy**.
   b. Click **Create Application**. On the **Set Basic Information** page that is displayed, modify the basic information such as **App Name**, **Description**, and **Execution Resource Pool** as required.
   c. After editing the basic application information, click **Next**. The deployment template selection page is displayed.
   d. Select the **Deploy a General Application** template and click **OK**.
2. Edit the application.
   a. Switch to the **Environment Management** tab page and add and edit an environment.
      - Click **Create Environment**, enter the environment name, for example, **Reverse proxy server group**, select the operating system corresponding to the server, and enter the description.
      - Click **Save**. The environment is created.
      - Click **Import Host**. The system automatically filters all clusters that meet the requirements of the current environment. In the dialog box that is displayed, select the target host cluster and click  in the Operation column of the target host to import the host to the environment.
      - Repeat the preceding steps to create target service server group **A_group** and add the **A_test** server.
   b. Switch to the **Parameters** tab page and add the following parameters:



   c. Switch to the **Deployment Actions** tab page. Add and edit the following steps:
      - Add the **Start/Stop Nginx** action and modify the parameters in the following table (Linux is used as an example).

Table 2-3 Parameter example

Parameter	Description
Action Name	Enter a name such as **Bring A-side node offline**.
Environment	Select the target environment. such as **Reverse_proxy_server_group**.

Parameter	Description
Operation	Specify the operation type such as **Reload configuration file**.
Nginx Installation Path	Enter the installation path of the Nginx service in the target environment. Example: **/usr/local/nginx**.
Modify configuration file before execution	Select this parameter.
Nginx Configuration File Path	Enter the path of the Nginx configuration file on the target host. Example: **/usr/local/nginx/conf/nginx.conf**.
Configuration File Backup Path	Enter the target path for backing up the original Nginx configuration file on the target host. Example: **/usr/local/nginx/conf/nginx_bak.conf**.
Configuration File Content	Enter content of the new configuration file. See **Example code to bring A-side node offline** in the appendix.

- Edit the **Download Software Package** action and change the parameter values to those listed in the following table (Linux is used as an example).

  Table 2-4 Parameter example

Parameter	Description
Action Name	Enter a name **Download software package on B-side node**.
Source	Select a source such as **Software package**.
Environment	Select the target environment. such as **A_group**.
Software package	Select a software package to be deployed in CodeArts Artifact.
Download Path	Enter the path for downloading the software package to the target host. Example: **/usr/local/**.

- Edit the **Run Shell Commands** action and modify the parameters as follows (Linux is used as an example):

Table 2-5 Parameter example

Parameter	Description
Action Name	Enter the action name **Deploy A-side node**.
Environment	Select the target environment. such as **A_group**.
Shell Commands	Enter the commands to be executed. Example: See **Example code to deploy a node** in the appendix.

- Add the **Start/Stop Nginx** action and modify the parameters in the following table (Linux is used as an example).

Table 2-6 Parameter example

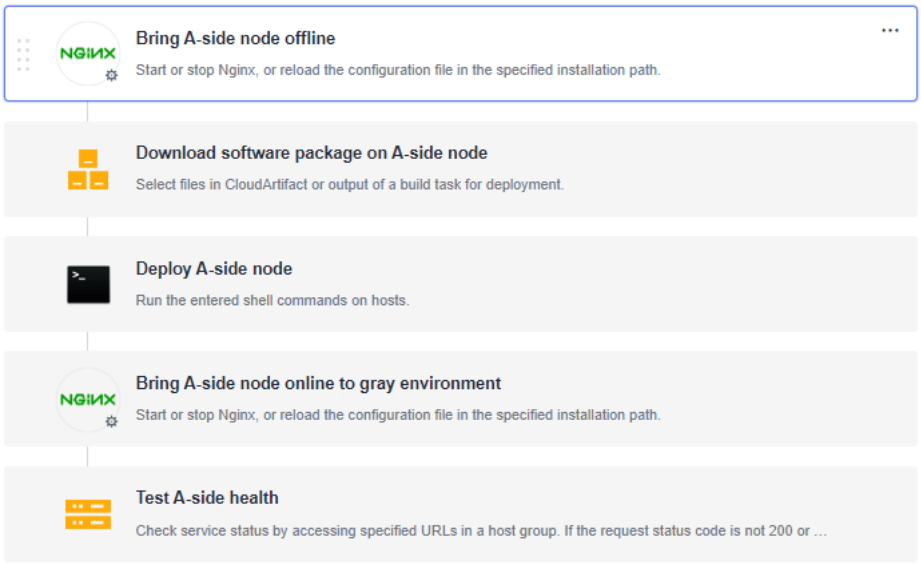
Parameter	Description
Action Name	Enter a name such as **Bring A-side node online to gray environment**.
Environment	Select the target environment. such as **Reverse_proxy_server_group**.
Operation	Specify the operation type such as **Reload configuration file**.
Nginx Installation Path	Enter the installation path of the Nginx service in the target host group. Example: **/usr/local/nginx**.
Modify configuration file before execution	Select this parameter.
Nginx Configuration File Path	Enter the path of the Nginx configuration file on the target host. Example: **/usr/local/nginx/conf/nginx.conf**.
Configuration File Backup Path	Enter the target path for backing up the original Nginx configuration file on the target host. Example: **/usr/local/nginx/conf/nginx_bak.conf**.
Configuration File Content	Enter content of the new configuration file. See **Example code to bring A-side node online to the gray environment** in the appendix.

- Edit the **Test Service** action and modify the parameters as follows (Linux is used as an example):

Table 2-7 Parameter example

Parameter	Description
Action Name	Enter a name such as **Test A-side health**.
Environment	Select the target environment. such as **A_group**.
Retries	If a service does not start up when the health test reaches the maximum retries, the service fails this test. Example: **1**
Interval (s)	Interval between two retries, in seconds. Example: **60**
Test Path	URL health test. You can add multiple URL health tests. Example: http://127.0.0.1:3000 (IP address and port number of the application service)

3. Click **Save**. The application is created.



Step 3 Create and edit application 2 (Bring A-side node online).

1. Create an application.
   a. Click **Create Application**. On the **Set Basic Information** page that is displayed, modify the basic information such as **App Name**, **Description**, and **Execution Resource Pool** as required.
   b. After editing the basic application information, click **Next**. The deployment template selection page is displayed.
   c. Select **Blank Template** and click **Next**.
2. Edit the application.
   a. Switch to the **Environment Management** tab page and add and edit an environment.

- Click **Create Environment**, enter the environment name, for example, **Reverse proxy server group**, select the operating system corresponding to the server, and enter the description.
- Click **Save**. The environment is created.
- Click **Import Host**. The system automatically filters all clusters that meet the requirements of the current environment. In the dialog box that is displayed, select the target host cluster and click in the Operation column of the target host to import the host to the environment.

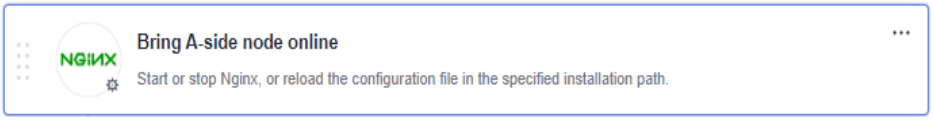
b. Switch to the **Deployment Actions** tab page. Add and edit the following steps:

Add the **Start/Stop Nginx** action and modify the parameters in the following table (Linux is used as an example).

Table 2-8 Parameter example

Parameter	Description
Action Name	Enter a name such as **Bring A-side node online**.
Environment	Select the target environment. such as **Reverse_proxy_server_group**.
Operation	Specify the operation type such as **Reload configuration file**.
Nginx Installation Path	Enter the installation path of the Nginx service in the target host group. Example: **/usr/local/nginx**.
Modify configuration file before execution	Select this parameter.
Nginx Configuration File Path	Enter the path of the Nginx configuration file on the target host. Example: **/usr/local/nginx/conf/nginx.conf**.
Configuration File Backup Path	Enter the target path for backing up the original Nginx configuration file on the target host. Example: **/usr/local/nginx/conf/nginx_bak.conf**.
Configuration File Content	Enter content of the new configuration file. See **Example code to bring a node online** in the appendix.

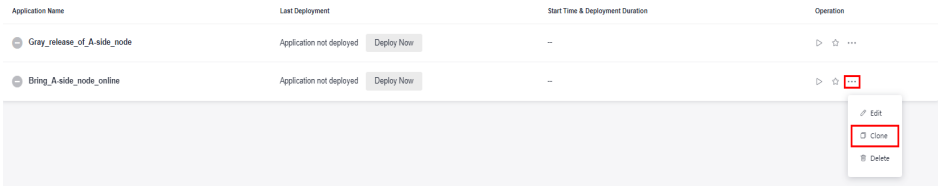
3. Click **Save**. The application is created.



Step 4 Clone and edit application 1. Create application 3 (gray release of B-side node).

1. Clone an application.

   Click ··· and choose **Clone**.



2. Edit the application.

   a. Switch to the **Environment Management** tab page and add and edit an environment.

      - Click **Create Environment**, enter the environment name, for example, **Reverse proxy server group**, select the operating system corresponding to the server, and enter the description.
      - Click **Save**. The environment is created.
      - Click Import Host. The system automatically filters all clusters that meet the requirements of the current environment. In the dialog box that is displayed, select the target host cluster and click the icon in the Operation column of the target host to import the host to the environment.
      - Repeat the preceding steps to create target service server group **B_group** and add the **B_test** server.

   b. Switch to the **Deployment Actions** tab page. Add and edit the following steps:

      - Edit the **Bring A-side node offline** action and modify the parameters as follows (Linux is used as an example):

Table 2-9 Parameter example

Parameter	Description
Action Name	Enter a name such as **Bring B-side node offline**.
Environment	Select the target environment. such as **Reverse_proxy_server_group**.
Operation	Specify the operation type such as **Reload configuration file**.
Nginx Installation Path	Enter the installation path of the Nginx service in the target host group. Example: **/usr/local/nginx**.

Parameter	Description
Modify configuration file before execution	Select this parameter.
Nginx Configuration File Path	Enter the path of the Nginx configuration file on the target host. Example: **/usr/local/nginx/conf/nginx.conf**.
Configuration File Backup Path	Enter the target path for backing up the original Nginx configuration file on the target host. Example: **/usr/local/nginx/conf/nginx_bak.conf**.
Configuration File Content	Enter content of the new configuration file. See **Example code to bring B-side node offline** in the appendix.

- Edit the **Download software package on A-side node** action and change the parameter values to those listed in the following table (Linux is used as an example).

  Table 2-10 Parameter example

Parameter	Description
Action Name	Enter a name **Download software package on B-side node**.
Source	Select a source such as **Software package**.
Environment	Select the target environment. such as **B_group**.
Software package	Select a software package to be deployed in CodeArts Artifact.
Download Path	Enter the path for downloading the software package to the target host. Example: **/usr/local/**.

- Edit the **Deploy A-side node** action and modify the parameters as follows (Linux is used as an example):

  Table 2-11 Parameter example

Parameter	Description
Action Name	Enter the action name **Deploy B-side node**.

Parameter	Description
Environment	Select the target environment. such as **B_group**.
Shell Commands	Enter the commands to be executed. Example: See **Example code to deploy a node** in the appendix.

- Edit the **Bring A-side node online to gray environment** action and modify the parameters as follows (Linux is used as an example):

  Table 2-12 Parameter example

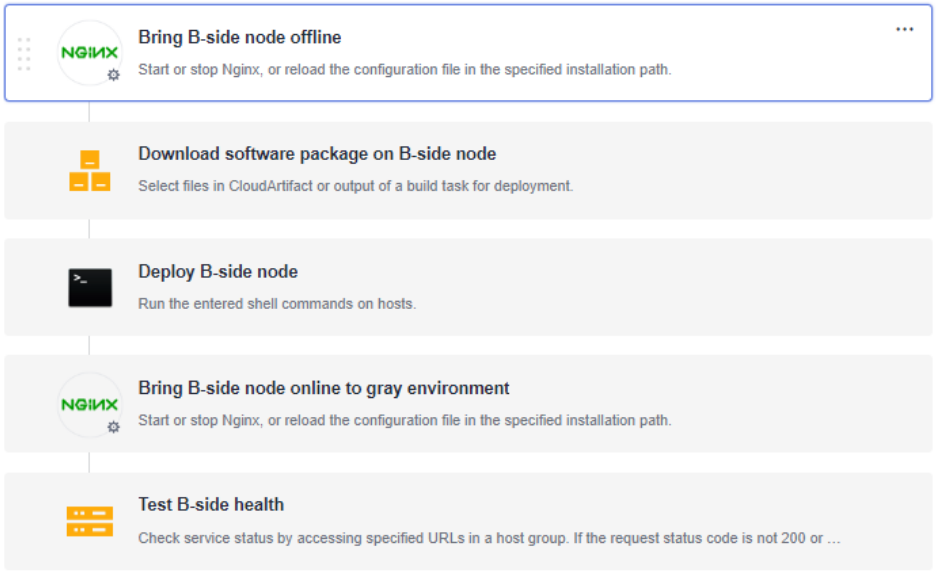
Parameter	Description
Action Name	Enter a name such as **Bring B-side node online to gray environment**.
Environment	Select the target environment. such as **Reverse_proxy_server_group**.
Operation	Specify the operation type such as **Reload configuration file**.
Nginx Installation Path	Enter the installation path of the Nginx service in the target host group. Example: **/usr/local/nginx**.
Modify configuration file before execution	Select this parameter.
Nginx Configuration File Path	Enter the path of the Nginx configuration file on the target host. Example: **/usr/local/nginx/conf/nginx.conf**.
Configuration File Backup Path	Enter the target path for backing up the original Nginx configuration file on the target host. Example: **/usr/local/nginx/conf/nginx_bak.conf**.
Configuration File Content	Enter content of the new configuration file. See **Example code to bring B-side node online to the gray environment** in the appendix.

- Edit the **Test A-side health** action and modify the parameters as follows (Linux is used as an example):

Table 2-13 Parameter example

Parameter	Description
Action Name	Enter a name such as **Test B-side health**.
Environment	Select the target environment. such as **B_group**.
Retries	If a service does not start up when the health test reaches the maximum retries, the service fails this test. Example: **1**
Interval (s)	Interval between two retries, in seconds. Example: **60**
Test Path	URL health test. You can add multiple URL health tests. Example: http://127.0.0.1:3000 (IP address and port number of the application service)

3. Click **Save**. The application is created.



Step 5 Clone and edit application 2. Create application 4 (Bring B-side node online).

1. Clone an application.

   Click ··· and choose **Clone**.

2. Edit the application.

   a. Switch to the **Environment Management** tab page and add and edit an environment.

   - Click **Create Environment**, enter the environment name, for example, **Reverse proxy server group**, select the operating system corresponding to the server, and enter the description.
   - Click **Save**. The environment is created.

- Click **Import Host**. The system automatically filters all clusters that meet the requirements of the current environment. In the dialog box that is displayed, select the target host cluster and click  in the Operation column of the target host to import the host to the environment.

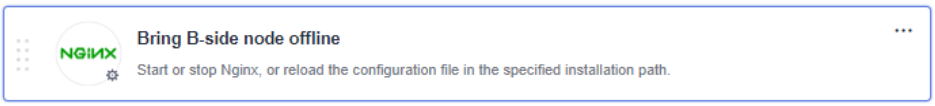
b. Switch to the **Deployment Actions** tab page. Add and edit the following steps:

Edit the **Bring A-side node online** action and modify the parameters as follows (Linux is used as an example):

Table 2-14 Parameter example

Parameter	Description
Action Name	Enter a name such as **Bring B-side node online**.
Environment	Select the target environment. such as **Reverse_proxy_server_group**.
Operation	Specify the operation type such as **Reload configuration file**.
Nginx Installation Path	Enter the installation path of the Nginx service in the target environment. Example: **/usr/local/nginx**.
Modify configuration file before execution	Select this parameter.
Nginx Configuration File Path	Enter the path of the Nginx configuration file on the target host. Example: **/usr/local/nginx/conf/nginx.conf**.
Configuration File Backup Path	Enter the target path for backing up the original Nginx configuration file on the target host. Example: **/usr/local/nginx/conf/nginx_bak.conf**.
Configuration File Content	Enter content of the new configuration file. See **Example code to bring a node online** in the appendix.

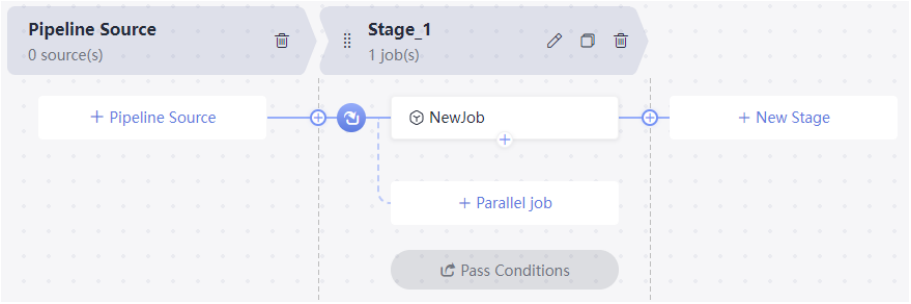
3. Click **Save**. The application is created.



Step 6 Create and edit a pipeline.

1. Create a pipeline.
   - Choose **CICD** > **Pipeline**.

- Click **Create Pipeline**, select a project, enter a name, set **Pipeline Source** to **None**, and click **Next**.
- Select **Blank Template** and click **OK**.



2. Edit job 1 (**Gray_release_of A-side_node**) in the pipeline stage.
   - Click  . In the dialog box that is displayed, set the parameters as follows and click **OK**.

     Table 2-15 Parameter example

Parameter	Description
Stage Name	Enter a name such as **Gray_release_of A-side_node**.
Always Run	Select **No**.

   - Click  . In the displayed dialog box, set **Entry Type** to **Automatic** and click **OK**.
   - Click **NewJob**, click the **Deploy** tab, select **CodeArts Deploy**, and click **Add**. In the dialog box that is displayed, set the parameters as follows and click **OK**.

     Table 2-16 Parameter example

Parameter	Description
Stage Name	Enter a name such as **Gray_release_of A-side_node**.
Select Task	Select **Gray_release_of A-side_node**.
Build Task	Leave it not configured.

3. Create and edit job 2 (**Bring_A-side_node_online**) in the pipeline stage.
   - Click  and  . In the dialog box that is displayed, set the parameters as follows and click **OK**.

Table 2-17 Parameter example

Parameter	Description
Stage Name	Enter a name such as **Bring_A-side_node_online**.
Always Run	Select **No**.

- Click  . In the displayed dialog box, set **Entry Type** to **Automatic** and click **OK**.
- Click **NewJob**. In the window that is displayed, click the **Normal** tab, select **ManualReview** and click **Add**, set the parameters as follows, and click **OK**.

Table 2-18 Parameter example

Parameter	Description
Name	Enter a name such as **Gray_release_of A-side_node**.
Reviewer	Select the service verification personnel.
Review Mode	Select **Review by all**.
Timeout Processing	Select **Review failed and pipeline terminated**.
Review Duration	Example: 4 hours.
Description	This parameter is optional.

- Click  , click the **Deploy** tab, select **CodeArts Deploy**, and click **Add**. In the dialog box that is displayed, set the parameters as follows and click **OK**.

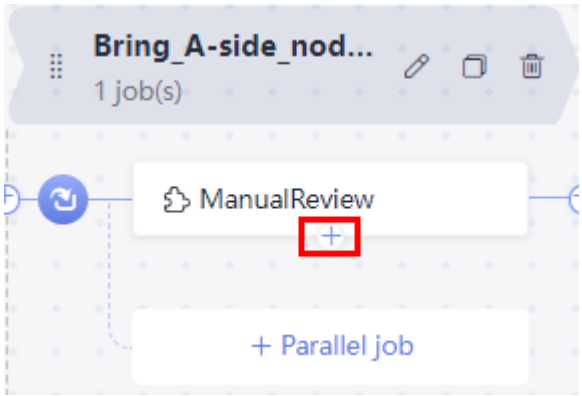


Table 2-19 Parameter example

Parameter	Description
Name	Enter a name such as **Bring_A-side_node_online**.
Select Task	Select **Bring_A-side_node_online**.
Build Task	Leave it not configured.

4. Edit job 3 (**Gray_release_of B-side_node**) in the pipeline stage.
   - Click  and  . In the dialog box that is displayed, set the parameters as follows and click **OK**.

     Table 2-20 Parameter example

Parameter	Description
Name	Enter a name such as **Gray_release_of B-side_node**.
Always Run	Select **No**.

   - Click  . In the displayed dialog box, set **Entry Type** to **Automatic** and click **OK**.
   - Click **NewJob**, click the **Deploy** tab, select **CodeArts Deploy**, and click **Add**. In the dialog box that is displayed, set the parameters as follows and click **OK**.

     Table 2-21 Parameter example

Parameter	Description
Name	Enter a name such as **Gray_release_of B-side_node**.
Select Task	Select **Gray_release_of B-side_node**.
Build Task	Leave it not configured.

5. Create and edit job 4 (**Bring_B-side_node_online**) in the pipeline stage.
   - Click  and  . In the dialog box that is displayed, set the parameters as follows and click **OK**.

     Table 2-22 Parameter example

Parameter	Description
Name	Enter a name such as **Bring B-side node online**.
Always Run	Select **No**.

- Click  . In the displayed dialog box, set **Entry Type** to **Automatic** and click **OK**.
- Click **NewJob**. In the window that is displayed, click the **Normal** tab, select **ManualReview** and click **Add**, set the parameters as follows, and click **OK**.

Table 2-23 Parameter example

Parameter	Description
Name	Enter a name such as **Gray_release_of B-side_node**.
Reviewer	Select the service verification personnel.
Review Mode	Select **Review by all**.
Timeout Processing	Select **Review failed and pipeline terminated**.
Review Duration	Example: 4 hours.
Description	This parameter is optional.

- Click  , click the **Deploy** tab, select **CodeArts Deploy**, and click **Add**. In the dialog box that is displayed, set the parameters as follows and click **OK**.

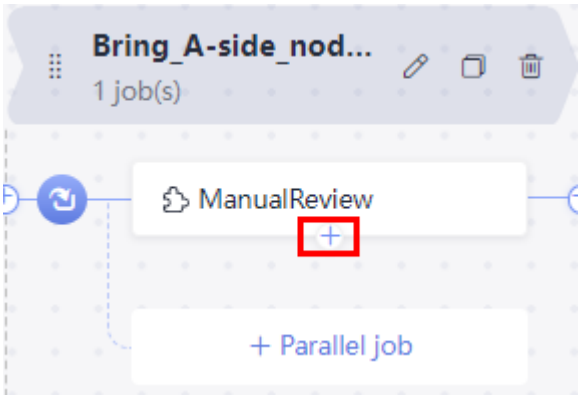
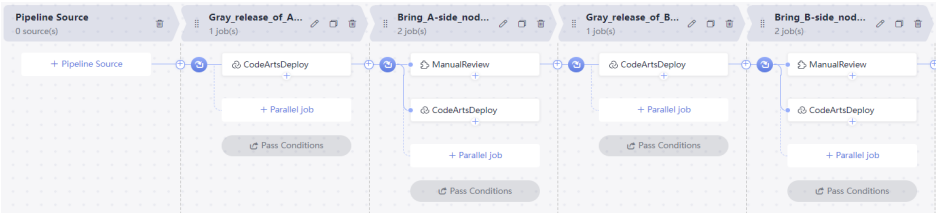


Table 2-24 Parameter example

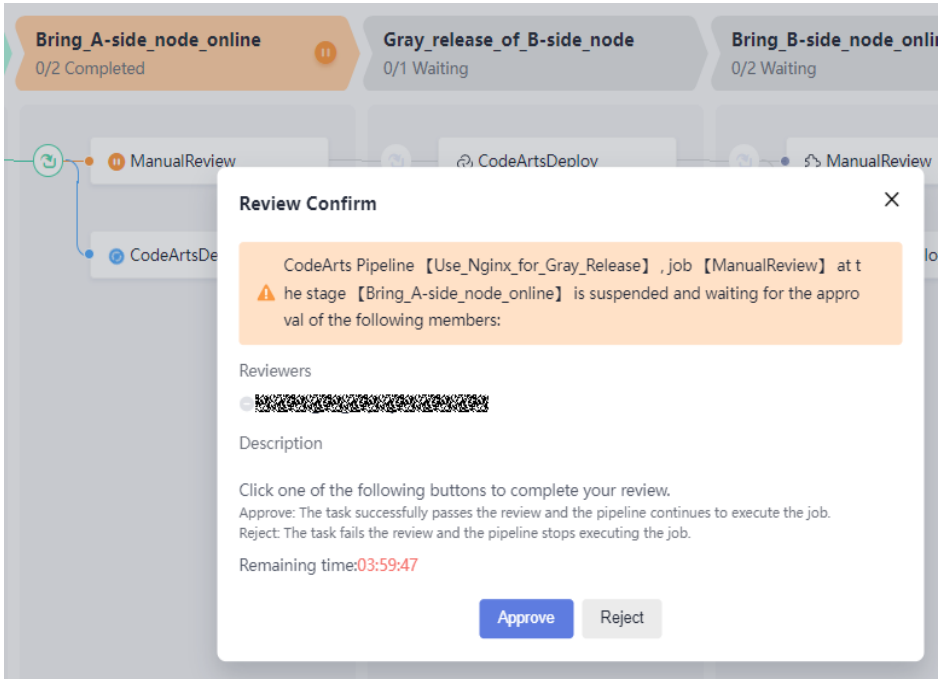
Parameter	Description
Name	Enter a name such as **Bring B-side node online**.
Select Task	Select **Bring_B-side_node_online**.
Build Task	Leave it not configured.

6. After the preceding operations are complete, click **Save and Run** to run pipeline jobs.



Step 7 Run the pipeline and manually perform gray verification to check whether A-side and B-side nodes are normal.

When CodeArts Pipeline is executed to bring node A or B online, pipeline execution is suspended. Gray users need to manually verify whether the servers on node A or B in the gray environment are working. Continue to run the pipeline if the servers are working.

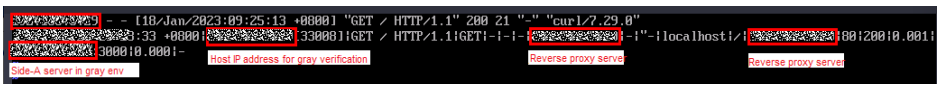


Gray users can run the **curl** command to check whether the gray environment is normal.

```
curl http://IP address of the reverse proxy server:Nginx port
```

NOTE

To check whether the gray user has accessed the target gray environment server, log in to the reverse proxy server and go to the path **logs/access.log** to view logs.



----End

Appendixes

- **Example code to bring A-side node offline**

```
worker_processes  1;
events {
    worker_connections  1024;
}
http {
    include       mime.types;
    default_type  application/octet-stream;
    log_format main  '$time_local|$remote_addr[$remote_port]|$request|$request_method|
$content_length|'
        '$content_type|$http_referer|$host|$http_x_forwarded_for|'
        '$http_true_client_ip|$server_name|$request_uri|$server_addr|$server_port|'
        '$status|$request_time|$upstream_addr|$upstream_response_time|$cookie_domain_tag';
    access_log logs/access.log main; # Access log: storage path and log level
    error_log logs/error.log; #Error log: storage path
    sendfile        on;
    keepalive_timeout  65;
    upstream portal {
        #Enter the IP address and application service port number of host A.
        #server X.X.X.X:X;      # Bring node A offline.
        #Enter the IP address and application service port number of host B.
        server X.X.X.X:X;
    }
    upstream portal_test {
        #Enter the IP address and application service port number of host A.
        server X.X.X.X:X;
        #Enter the IP address and application service port number of host B.
        server X.X.X.X:X;
    }

    server {
        listen       XXX;# Enter the Nginx port number.
        server_name  localhost;

        location / {
            set $backend portal;
            set $test portal_test;
            # Enter the IP address of the gray verification host.
            #if ( $remote_addr ~* "X.X.X.X") {
            #    set $backend $test;
            #}
            proxy_pass https://$backend;
        }
        error_page   500 502 503 504  /50x.html;
        location = /50x.html {
            root   html;
        }
    }
}
```

- **Deployment node**

```
# Obtain the application process ID.
pid=`ps -ef | grep app_name | grep -v grep | awk '{print $2}'`
if [ -z "$pid" ];
then
  echo "[app_name pid is not exist.]"
else
  echo "app_name pid: $pid "
  # End the process.
  kill -15 $pid
fi
# Restart the application. You can run the deployment script or commands to start the application.
# Method 1: Run the deployment script to start the application.
# sh startup.sh
# Method 2: Run the command to start the application. nohup is recommended for backend startup.
# nohup java -jar /usr/local/app/SpringbootDemo.jar &
```

- **Example code to bring A-side node online to the gray environment**


```
worker_processes  1;
events {
    worker_connections  1024;
}
http {
    include       mime.types;
    default_type  application/octet-stream;
    log_format main  '$time_local|$remote_addr[$remote_port]|$request|$request_method|
$content_length|'
        '$content_type|$http_referer|$host|$http_x_forwarded_for|'
        '$http_true_client_ip|$server_name|$request_uri|$server_addr|$server_port|'
        '$status|$request_time|$upstream_addr|$upstream_response_time|$cookie_domain_tag';
    access_log logs/access.log main; # Access log: storage path and log level
    error_log logs/error.log; #Error log: storage path
    sendfile        on;
    keepalive_timeout  65;
    upstream portal {
        #Enter the IP address and application service port number of host A.
        #server X.X.X.X:X;      # Bring node A offline.
        #Enter the IP address and application service port number of host B.
        server X.X.X.X:X;
    }
    upstream portal_test {
        #Enter the IP address and application service port number of host A.
        server X.X.X.X:X;       # Gray release of node A
        #Enter the IP address and application service port number of host B.
        #server X.X.X.X:X;
    }

    server {
        listen       XXX;# Enter the Nginx port number.
        server_name  localhost;

        location / {
            set $backend portal;
            set $test portal_test;
            # Enter the IP address of the gray verification host.
            if ( $remote_addr ~* "X.X.X.X") {
                set $backend $test;
            }
            proxy_pass https://$backend;
        }
        error_page   500 502 503 504  /50x.html;
        location = /50x.html {
            root   html;
        }
    }
}
```

- **Example code to bring B-side node offline**

```
worker_processes  1;
events {
    worker_connections  1024;
}
http {
    include       mime.types;
    default_type  application/octet-stream;
    log_format main  '$time_local|$remote_addr[$remote_port]|$request|$request_method|
$content_length|'
        '$content_type|$http_referer|$host|$http_x_forwarded_for|'
        '$http_true_client_ip|$server_name|$request_uri|$server_addr|$server_port|'
        '$status|$request_time|$upstream_addr|$upstream_response_time|$cookie_domain_tag';
    access_log logs/access.log main; # Access log: storage path and log level
    error_log logs/error.log; #Error log: storage path
    sendfile        on;
    keepalive_timeout  65;
    upstream portal {
        #Enter the IP address and application service port number of host A.
        server X.X.X.X:X;
        #Enter the IP address and application service port number of host B.
```

```
    #server X.X.X.X:X;      # Bring node B offline.
  }
  upstream portal_test {
    #Enter the IP address and application service port number of host A.
    server X.X.X.X:X;
    #Enter the IP address and application service port number of host B.
    server X.X.X.X:X;
  }

  server {
    listen       XXX;# Enter the Nginx port number.
    server_name  localhost;

    location / {
      set $backend portal;
      set $test portal_test;
      # Enter the IP address of the gray verification host.
      #if ( $remote_addr ~* "X.X.X.X") {
      #    set $backend $test;
      #}
      proxy_pass https://$backend;
    }
    error_page   500 502 503 504  /50x.html;
    location = /50x.html {
      root   html;
    }
  }
}
```

- **Example code to bring B-side node online to the gray environment**

```
worker_processes  1;
events {
  worker_connections  1024;
}
http {
  include       mime.types;
  default_type  application/octet-stream;
  log_format main  '$time_local|$remote_addr[$remote_port]|$request|$request_method|
$content_length|'
      '$content_type|$http_referer|$host|$http_x_forwarded_for|'
      '$http_true_client_ip|$server_name|$request_uri|$server_addr|$server_port|'
      '$status|$request_time|$upstream_addr|$upstream_response_time|$cookie_domain_tag';
  access_log logs/access.log main; # Access log: storage path and log level
  error_log logs/error.log; #Error log: storage path
  sendfile        on;
  keepalive_timeout  65;
  upstream portal {
    #Enter the IP address and application service port number of host A.
    server X.X.X.X:X;
    #Enter the IP address and application service port number of host B.
    #server X.X.X.X:X;      # Bring node B offline.
  }
  upstream portal_test {
    #Enter the IP address and application service port number of host A.
    #server X.X.X.X:X;
    #Enter the IP address and application service port number of host B.
    server X.X.X.X:X;       # Gray release of node B
  }

  server {
    listen       XXX;# Enter the Nginx port number.
    server_name  localhost;

    location / {
      set $backend portal;
      set $test portal_test;
      # Enter the IP address of the gray verification host.
      if ( $remote_addr ~* "X.X.X.X") {
        set $backend $test;
      }
```



```
            proxy_pass https://$backend;
        }
        error_page   500 502 503 504  /50x.html;
        location = /50x.html {
            root   html;
        }
    }
}
```

- **Example code to bring a node online**

```
worker_processes  1;
events {
    worker_connections  1024;
}
http {
    include       mime.types;
    default_type  application/octet-stream;
    log_format main  '$time_local|$remote_addr[$remote_port]|$request|$request_method|
$content_length|'
        '$content_type|$http_referer|$host|$http_x_forwarded_for|'
        '$http_true_client_ip|$server_name|$request_uri|$server_addr|$server_port|'
        '$status|$request_time|$upstream_addr|$upstream_response_time|$cookie_domain_tag';
    access_log logs/access.log main; # Access log: storage path and log level
    error_log logs/error.log; #Error log: storage path
    sendfile        on;
    keepalive_timeout  65;
    upstream portal {
        #Enter the IP address and application service port number of host A.
        server X.X.X.X:X;
        #Enter the IP address and application service port number of host B.
        server X.X.X.X:X;
    }
    upstream portal_test {
        #Enter the IP address and application service port number of host A.
        server X.X.X.X:X;
        #Enter the IP address and application service port number of host B.
        server X.X.X.X:X;
    }

    server {
        listen       XXX;# Enter the Nginx port number.
        server_name  localhost;

        location / {
            set $backend portal;
            set $test portal_test;
            # Enter the IP address of the gray verification host.
            #if ( $remote_addr ~* "X.X.X.X") {
            #    set $backend $test;
            #}
            proxy_pass https://$backend;
        }
        error_page   500 502 503 504  /50x.html;
        location = /50x.html {
            root   html;
        }
    }
}
```

