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1. Introduction

nBalance is a load-balancer/WAF that efficiently distributes application traffic across multiple servers and secures the system. Its primary purpose is to ensure that no single server bears too much load, preventing performance bottlenecks and improving the overall reliability and availability of a system. The key features are:

1. Bot Protection
2. IP Persistence
3. SSL Offloading
4. Session control.
5. Content Caching
6. Web acceleration
7. Cookie Persistence.
8. Connection Control
9. Session Persistence
10. DDOS attack protection.
11. L7 & L4 Load balancing
12. Open Relay Protection (SMTP).
13. GEO-Restrict (Geo based traffic control).
14. Block admin URLs exposed to the internet.
15. Block unused URLs exposed to the internet.
16. Block PowerShell scripts (remote execution)

1.1. Document Purpose

This document provides a comprehensive overview of the nBalance website user interface (WUI), offering detailed guidance on configuring the diverse functionalities of the nBalance system. Within these pages, you will find comprehensive instructions on how to optimize and tailor the nBalance settings through the intuitive Web User Interface. This resource serves as an invaluable reference for users seeking a thorough understanding of the configuration options available, empowering them to harness the full potential of the nBalance platform efficiently.

1.2. Intended Audience

This document is designed to assist individuals seeking guidance on configuring the nBalance system through the Web User Interface (WUI). Whether you are a novice or an experienced user, the information provided here serves as a helpful resource for anyone looking to customize and fine-tune the settings of the nBalance platform using the intuitive WUI.

2. Default Management IP Addresses

Please see the list of default IP addresses for nBalance ADC models.

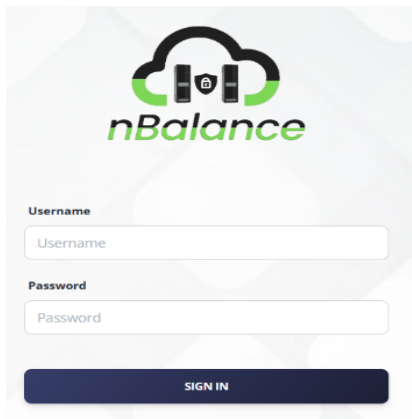
Model	Default IP
ADC Smart	192.168.50.100
ADC Smart Plus	192.168.60.100
ADC Enterprise	192.168.70.100

3. Default nBalance Login Information

Model	Default Username	Default Password
ADC Smart	adcsadmin	admin
ADC Smart Plus	adcspadmin	admin
ADC Enterprise	adcepadmin	admin

4. Login

Login page nBalance.



Steps To Follow:

1. Click > Login button will display the login page.
2. Enter the **“username”** for example **“admin_”**
3. Enter the **“password”** for example **“gthmaHJ1234”**.
4. Click the “Sign In” button. It will navigate user to nBalance Home page.

5. Top Bar Information



1. **System Uptime:** It shown in the right side of the navigation bar.
2. **Light/Dark mode:** In nBalance the user can change the colour mode into dark mode or light mode.
3. **Full screen icon:** clicking on the icon will help you to make full screen.

6. Dashboard

Selecting the "Dashboard" menu option reveals the home page, which presents the basic information about the nBalance.



Steps To Follow:

MENU

 Dashboard



 Logs

 Policy

 Configuration

 Domains

 GeoAccessControl

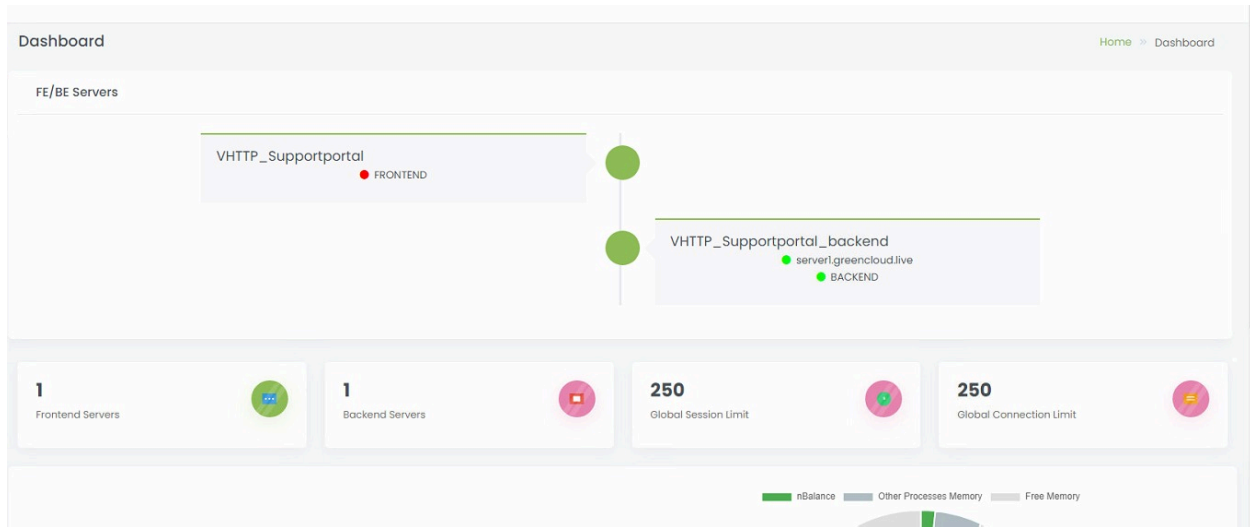
 Virtual IPs

 Certificates

1. From the menu list you will find Dashboard.
2. Click > **dashboard** menu. It will navigate dashboard page.
3. Dashboard page will list out some important information about the nBalance.

- **Total memory installed:** 7.79 Gb.
- **nBalance used memory:** 0.12 Gb.
- **Geo Access:** Geo Access is a feature that allows you to control access to your services based on the geographic location of the users. It enhances security.
- **FE/BE Servers:** This is the entry point for incoming traffic. The frontend is responsible for accepting client connections and passing them on to the appropriate backend server based on certain criteria, such as the requested domain or IP address, protocol, etc. In other words, it's the part that faces the clients.

Dashboard page



7. Logs

Logs provide valuable insights into the performance and behavior of your load balancing setup. These logs are essential for monitoring, troubleshooting, and ensuring the optimal functioning of your system.

Logs are key to maintaining a healthy and efficient load balancing environment and leverage logs for effective troubleshooting.



We provide three logs.

1. Traffic logs
2. Smtplib logs
3. Health check logs

MENU

Dashboard

Logs

Policy

Configuration

Domains



Steps To Follow:

1. Click on “**Logs**” menu from the list. It will navigate you to the logs page.
2. Logs page will display different logs. i.e., Traffic logs, SMTP logs

7.1. Traffic Logs

Traffic logs refer to records or data that capture information about the flow of network traffic through nBalance. These logs are crucial for monitoring, troubleshooting, and analyzing the performance and health of the load balancing infrastructure.

Purpose

1. **Monitoring:** Track incoming requests, response times, and server health.
2. **Troubleshooting:** Identify and resolve issues related to load balancing and server communication.
3. **Analysis:** Analyze traffic patterns and user behavior for optimization.

Logs Page » log

Traffic Logs

10

ID	Report Date	Report Time	Message
No data available in table			

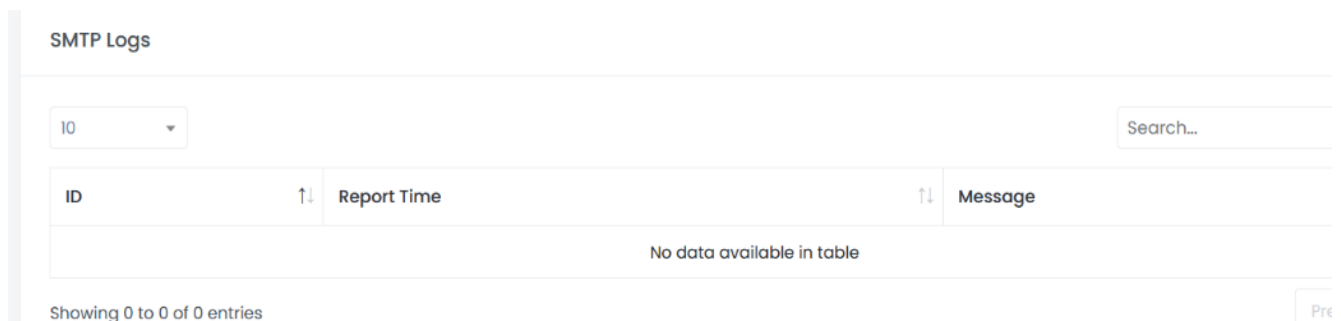
Showing 0 to 0 of 0 entries Previous Next

7.2. SMTP Logs

SMTP (Simple Mail Transfer Protocol) logs are records of the transactions and activities that occur during the transmission of email messages using SMTP. SMTP is a protocol used for sending emails between servers. SMTP logs provide detailed information about the email communication process, and they are crucial for monitoring, troubleshooting, and maintaining email server security. Key functionalities are,

Reliable Delivery of Emails:

Benefits: Optimizes resource utilization, ensures even distribution of email traffic, and prevents server overloads.



The screenshot shows a web interface for SMTP Logs. At the top left, it says "SMTP Logs". Below that is a dropdown menu with "10" selected and a search box with "Search...". The table has three columns: "ID", "Report Time", and "Message". The table is empty, and a message "No data available in table" is displayed in the center. At the bottom left, it says "Showing 0 to 0 of 0 entries" and at the bottom right, there is a "Pre" button.

ID	Report Time	Message
No data available in table		

7.3. Health check Logs

Health check logs in nBalance are records or entries that provide information about the status and results of health checks performed by the load balancer. These logs help monitor the health and availability of backend servers or services.

8. Policy

Policy will help you block and restrict URLs.



MENU

- Dashboard
- Logs
- Policy
- Configuration
- Domains



Steps to follow:

1. Click on > **Policy** from the menu bar. It will navigate you to the policy page.

Policy page

BLOCK URL: This will help the user to restrict or Block the URL.

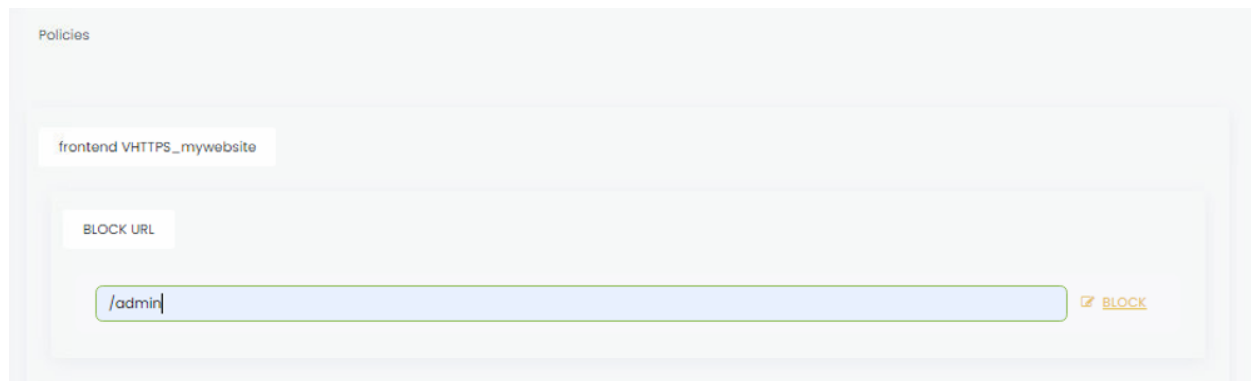
REDIRECT: This will help the user to redirect the URL.

BLOCK URL Except Few IPs: It blocks the URL and only the specified IPs get access.

Steps to follow:

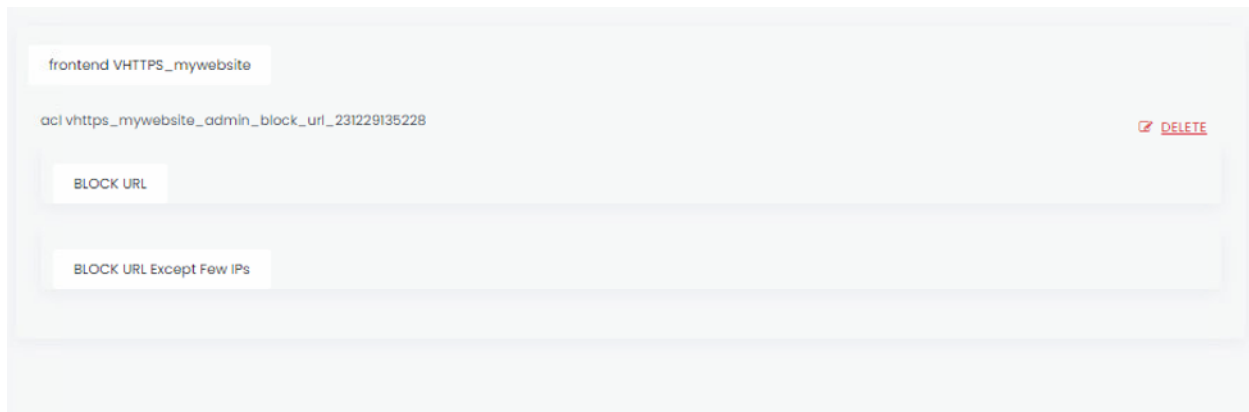
1. To **BLOCK URL**, we need to add frontend server first.
2. Then add the pages or URL that you want to block inside the text box.
3. Click on > **Block** button will block that page or URL.

After blocking the URL



It will show the blocked URL.

DELETE button will delete the blocked URL.



In Redirect

1. select http/https from the drop-down menu and add URL name and Click on **Redirect** will redirect the URL.

2. **Remove Redirect** will remove the URL.

Redirect

HTTPS Remove Redirect Redirect

http

In **BLOCK URL Except Few IPs**

1. Enter the URL and add IP address inside the box.
2. Then click on **BLOCK** will all the URL except specific IPs.

BLOCK URL Except Few IPs

BLOCK

Add IP Separated by space

9. Virtual IP

This is the IP address that is presented to clients. Any packet arriving at the nBalance with that IP address and port number will be forwarded to the Real Servers associated with the Virtual Service. It is a virtual representation of a service or application distributed across multiple backend servers.



MENU

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- Geo Restrict
- Virtual IPs



Steps to follow:

Click > Virtual IP will navigate you to Virtual IP page.

9.1. Add Virtual IP

Steps to follow:

1. Enter the IP address in to the add virtual IP text box. Click on the **ADD** button.
2. It will display the IP address That you entered.

Virtual IP

Add Virtual IP

Virtual IP List

10. Configuration

Configuring a front-end server and a backend server in a load balancing environment involves setting up the necessary components to distribute incoming traffic among multiple servers to improve performance, scalability, and reliability.

In configuration page we must configure two types of servers.

- **Frontend server**

Frontend server typically refers to the component that handles incoming network traffic from clients (such as web browsers) and manages the initial processing of requests before distributing them to backend servers. The front-end server plays a crucial role in load balancing by acting as the entry point for client requests and optimizing the distribution of traffic to multiple backend servers.

- **Backend server**

The backend servers/real servers typically host the application logic, process database queries, and handle other tasks necessary to fulfill client requests. When a client makes a request to a web application, the nBalance forwards that request to one of the backend servers in a way that balances the load across all available servers. This ensures that each server shares the load, optimizing resource utilization and preventing any single server from becoming a bottleneck.



Steps To Follow:

MENU

 Dashboard

 Logs

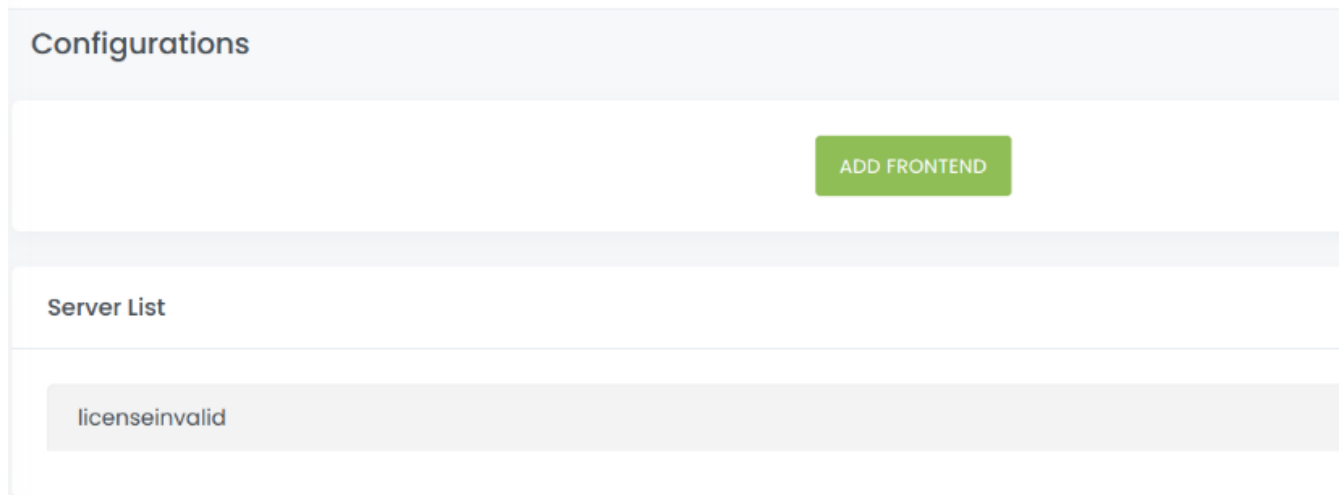
 Policy

 Configuration 

 Domains

1. Click > Configuration to navigate to Configuration page.

10.1. Frontend Server



Before setting up the front end of nBalance, the first step is to add a Virtual IP (VIP). This VIP serves as the special address that clients use to connect to our servers. It's like the entry point for clients.

After adding Virtual IP follow the below steps:

Click on > FRONTEND button.

When frontend is added, it will display under the corresponding tab under the same page.

The tab contains following fields:

Service/Frontend Server: Give a name to your frontend server (Ex: - EXCHANGE)

Protocol: click here to select a protocol/service of the real/backend servers (e.g. – http, https)

Bind: Select the Virtual IP Address you added to the Frontend Server.

Balance Method: Here you can select the balancing method. e.g. DNS Round Robin, Least Connection.

If you select *Round Robin*, it will give the IP Address from the group separately from one by one. In Least Connection, it directs incoming network traffic to the server with the fewest active connections at any given time.

Interval: Load Balancer sends a heartbeat to the server in every specific interval. By default, it is 5 sec.

Fall: Specifies the number of failed counts that a heartbeat check failed to send a failure report that the server is down.

Rise: No. of success counts that a heartbeat check occurred to activate the server and send an active message.

Advanced http check (optional): active frontend and real/backend servers added by the user.

Active health checks: You can proactively check the health of your backend servers and remove them from the load balancer rotation until they're up and running again. ALOHA provides a way to monitor the health of your servers using the HTTP protocol.

HTTP URL: It will help the user to send and receive a code request.

Expected Response: The option advance health check sends an HTTP request to the server and expects to get a successful response. The response status code should be in the 2xx/3xx/4xx to consider it as successful.

Session Limit: It restricts the number of concurrent or active sessions that can be maintained on a particular server.

Screenshot for add frontend server.

ADD FRONTEND SERVER ×

Server Name	Protocol
<input type="text" value="exch"/>	<input type="text" value="http"/>
<input type="text" value="192.168.0.48"/>	<input type="text" value="80"/>
<input type="text" value="Round Robin"/>	<input type="text" value="4"/>

Health Check

Interval	Rise	Fall
<input type="text" value="5"/>	<input type="text" value="2"/>	<input type="text" value="1"/>

Advanced http check (optional)

HTTP URL	Excepted Response
<input type="text" value="/test.html"/>	<input type="text" value="200"/>

Session Limit

Redirect toHTTP toHTTPS

Block Traffic from Blacklisted IPs.

ADD

Frontend Added

Below shows the added frontend server. The page also provides an **UPDATE** button.

to update any changes in the added frontend.

DELETE button provided to delete the added server.

The screenshot shows a configuration page for a VHTTP frontend. At the top, there is a header 'VHTTP' and a sub-header 'frontend VHTTP_exch' with a 'Delete' link. Below this, there are three configuration rows: 'bind' with a text input field containing '192.168.0.48:80' and an 'UPDATE' button; 'Geo Access' with an 'ENABLE' button; and 'Bot Protection' with an 'ENABLE' button.

The Geo Access **ENABLE** button will enable the location for the specific Frontend.

Bot Protection will **ENABLE** the bot protection for the specific Frontend.

10.2. Backend Server

Backend server contains the following fields:

Balance: Specify which load balancing method can be used in this Backend Server.

Timeout: To specify the Session timeout between the nBalance and the Backend Server.

IP Persistence: IP persistence, also known as session persistence or sticky sessions, is a feature in nBalance that ensures that a user's requests are consistently directed to the same backend server during a session. This is important for applications that store session data on the server side and need to maintain continuity for a specific user throughout their interaction.

Cookie Persistence: Cookie persistence ensures that a user's requests are consistently directed to the same backend server during a session. We use these applications to store session information in cookies and need to maintain continuity for a specific user throughout their interaction.

Server name: server name is the FQDN of the real/backend servers and the IP address is the real/backend servers. The port which is active on the real server.

The screenshot shows a configuration form with the following elements:

- Input field: ex2019.gt.kw
- Input field: 192.168.0.57:80
- Buttons: UPDATE (with a checkmark icon), DELETE (in red), MAINTENANCE (with a wrench icon), and + ADD SERVER (in green).
- Input field: Server_name
- Input field: 127.0.0.1
- Input field: 80

Steps to follow:

1. Add server name.
2. Give IP address.
3. Click on ADD SERVER

Click on> **UPDATE** button will provide to change each field with new or changed content.

Click on> **DELETE** will delete the backend server

The screenshot shows the configuration page for 'backend VHTTP_exch_backend' with a 'Delete' link. The settings are as follows:

Setting	Value	Action
balance	roundrobin	UPDATE
timeout	25s	UPDATE
IP Persistence		ENABLE
Cookie Persistence	Expire Time	ENABLE

Click on the **ENABLE** button will enable **IP Persistence**

Cookie Persistence

Add Expire time on the text box and click on **ENABLE** button will enable Cookie Persistence.

11. Domain

Domain in nBalance plays a crucial role in routing, configuration, and ensuring that incoming requests are directed to the appropriate backend servers.



Steps to follow:

1. Click on > Domain will navigate to Domain page.

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Domains

Geo Restrict

Virtual IPs



Add Domain

Steps to follow:

1. Add Domain name on the field.
2. Add Target Delivery Host name on the specific field.
3. Click on> ADD button.

Domains

Domain Name

gtsms.online

Target Delivery Host

smtp.gt-kw.com

ADD

Service Status Activate

Steps to follow:

1. Click on > **Activate** button will activate the Service Status.
2. Click on > **Deactivate** button will deactivate the Service Status.

Domains

MTA (SMTP)

Service Status: Active

Activate

Deactivate

SMTP Banner

Domains

Pages > |

MTA (SMTP)

Service Status: Active

SMTP Banner :

mail.contoso.com

Add system/service name

ADD

DELETE

Add system/service name into the text box. Click on **ADD** will add banner. DELETE button will delete banner.

Add Domain

Add Domain name into the text box and add Target delivery host name into the text box. Clicking on **ADD** button will add the domain name.

Domains

Domain Name	Target Delivery Host	
<input type="text" value="gtsms.online"/>	<input type="text" value="smtp.gt-kw.com"/>	<input type="button" value="ADD"/>

After Adding Domain

Domain Name	Target Delivery Host	Action
gtsms.online	smtp.gt-kw.com	<input type="button" value="Delete"/>

12. Geo Restrict

Geo-restriction is controlling or restricting access to a service or content based on the geographical location of the client or user. This functionality is often employed to comply with legal requirements, licensing agreements, or to optimize the user experience based on regional considerations. nBalance can analyse the IP address of incoming requests to determine the geographical location of the client.



Steps to follow:

1. Click on > Geo Restrict link. It will navigate to the Geo Restrict page.

MENU

- Dashboard
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- Policy
- Configuration
- Domains
- Geo Restrict
- Virtual IPs



Geo Restrict Page

Steps to follow:

Select country from the dropdown menu.

Click on > ADD button will add the location into restricted location.

Geo Restrict Pages » geo-access

Select country

▼

Geo Restrict

Select country

ADD

afghanistan

alandislands

albania

algeria

americansamoa

andorra

angola

anguilla

antarctica

antiguaandbarbuda

argentina

armenia

aruba

australia

austria

azerbaijan

bahamas

bahrain

bangladesh

Action

Update

After adding the country in to Geo Restrict

Steps to follow:

1. **Remove** button will remove the country added.

Country List

10 Search...

Country	Action
albania	Remove

Showing 1 to 1 of 1 entries

Previous 1 Next

Clicking on **Update GEO IP DB** will update the Database.

Activate New Geo-Access **i**

Update GEO IP DB

Internal Subnets: It is used to add internal networks in your organization.

13. Certificates

Certificate Management in nBalance provide tools for managing SSL certificates. This includes the ability to upload, renew, or replace certificates. Our nBalance also support automated certificate renewal through integration with certificate authorities.



MENU

- Dashboard
- Logs
- Policy
- Configuration
- Domains
- Geo Restrict
- Virtual IPs
- Certificates
- Services



Steps to follow:

Click on > Certificate will navigate you to certificate page.

Add Certificate

CERTIFICATES

Add Certificate

SSL Certificate(.pem)

Browse... mail.gt-kw.com2023.pem

Upload

Steps to follow:

1. Browse SSL certificate from the system.
2. Click on > Upload

After Adding the Certificate

Uploaded Certificates

10

No	Certificate	Expiry	Action
0	2023-10-04-mail.gt-kw.com2023.pem	Jul 6 23:59:59 2024 GMT	Delete

Showing 1 to 1 of 1 entries

Previous 1 Next

This image shows the added certificate. The **Delete** button will help you to delete the certificate.

Note: You cannot delete a certificate if it is used by any front-end server.

14. Services

This section provides information on the status of the Load Balancer, MTA (Mail Transfer Agent), logging and DNS services. You can use this interface to initiate actions such as starting, stopping, or restarting these services as needed.



Steps To Follow:

















Click on >Services will navigate to Service page.

- Logs
- Policy
- Configuration
- Domains
- Geo Restrict
- Virtual IPs
- Certificates
- Services
- Settings



Service Page

Services Pages » Services

<div style="text-align: center;"> Load Balancer</div> <div style="text-align: center;">  </div>	<div style="text-align: center;"> MTA</div> <div style="text-align: center;">  </div>	<div style="text-align: center;"> Logging</div> <div style="text-align: center;">  </div>	<div style="text-align: center;"> DNS</div> <div style="text-align: center;">  </div>
---	---	---	---

In service page we have

1. **Load Balancer:** Load balancer is a software tool that distributes incoming network traffic across multiple servers or resources to ensure efficient utilization, high availability, and optimal performance. It acts as an intermediary between clients and backend servers, forwarding client requests to the most appropriate server based on predefined algorithms and policies.
2. **MTA:** MTA stands for Mail Transfer Agent. It is a software application or component responsible for the reliable transmission of email messages over a computer network.
3. **Logging:** Is a tool used in nBalance to be auditing monitoring etc.
4. **DNS:** DNS stands for Domain Name System. It will allow users to access memorable names instead of IP addresses.

The user can **START**, **STOP** and **RESTART** using the buttons given inside the tab.

START button will start the process.

STOP button will stop the process. It will change the green color to red.

RESTART button will restart the process.

15. Settings

Settings will help you to set or update Server Time Zone, Global Max Session Limit, Global Max Connection Limit and Management IP



Steps to follow:

Click on > Setting button will navigate to settings page.

- Logs
- Policy
- Configuration
- Domains
- Geo Restrict
- Virtual IPs
- Certificates
- Services
- Settings
- License



Setting Page

Settings		
Server Time Zone	<input type="text" value="Asia/Kuwait"/>	<input type="button" value="Update"/>
Global Max Session Limit	<input type="text" value="1000"/>	<input type="button" value="Update"/>
Global Max Connection Limit	<input type="text" value="1000"/>	<input type="button" value="Update"/>

The form contains following fields:

1. **Server Time Zone:**
2. **Global Max Session Limit:**
3. **Global Max Connection Limit:**
4. **Management IP:**

Click on> **UPDATE** button will update or change the content in the specific field.

Management IP

IP Address	<input type="text" value="192.168.0.52/24"/>	<input type="button" value="Update"/>
Gateway	<input type="text" value="192.168.0.1"/>	<input type="button" value="Update"/>
DNS Server	<input type="text" value="x.x.x.x."/>	<input type="button" value="Add"/>

DNS Server 1	192.168.0.222	<input type="button" value="Delete"/>
DNS Server 2	192.168.0.221	<input type="button" value="Delete"/>

Management IP

- **IP Address:** IP addresses serve the purpose of identifying and locating devices on a network.
- **Gateway:** It will help to connect different networks
- **DNS Server:** It will help to convert the domain name into IP address.

Click on> **Update** button will update the specific field.

Click on> Add button will add the DNS server.

Click on> **Delete** icon Button will delete the DNS server.

16. License

In nBalance, we provide 30-days of trial. A license key is required after the trial period for the nBalance to work.



- Policy
- Configuration
- Domains
- Geo Restrict
- Virtual IPs
- Certificates
- Services
- Settings
- License

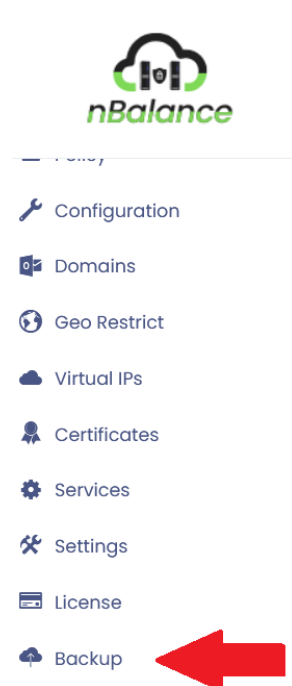


Steps To Follow:

Click on >License will navigate you to License page

17. Backup

Backups in nBalance involve creating and storing copies of the configuration settings and, potentially, other critical data associated with the nBalance system. Backups are essential for several reasons, including disaster recovery, system upgrades, and ensuring that a previous, known-good configuration can be restored in case of issues. Here's how backups are typically managed in nBalance:



Steps To Follow:

1. Click on>Backup will navigate you to Backup page.

How to Backup

Steps to follow:

1. Click on> Backup Now button will back up the data.
2. It will also display the backup file with the date and time as a cfg file.

Backup

Pages » Backup

Backups

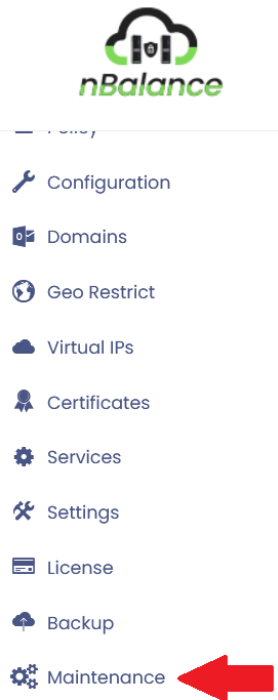
Backup Now

2023-12-26 18:11:50.378887.cfg



18. Maintenance

Maintenance in nBalance involves a series of tasks and activities aimed at keeping the load balancing system running smoothly, efficiently, and securely. Regular maintenance helps prevent issues, ensures optimal performance, and allows for the implementation of updates and improvements. Here are common maintenance tasks associated with nBalance:



Steps To Follow:

Click on> Maintenance will navigate you to Maintenance page.

Maintenance will provide the following:

Reset: Reset the server completely.

Restart: Helps to restart the server.

Shutdown: Completely shut down the server.

1. Reset server configuration: Click on the **>RESET CONFIG** button will reset the configuration.
2. Restart Server: Click on **> RESTART SERVER** will restart the server.
3. Shut Down Server: Click on **> SHUT DOWN SERVER** will shut down the server.

Maintenance

Reset Server Configuration

RESET CONFIG

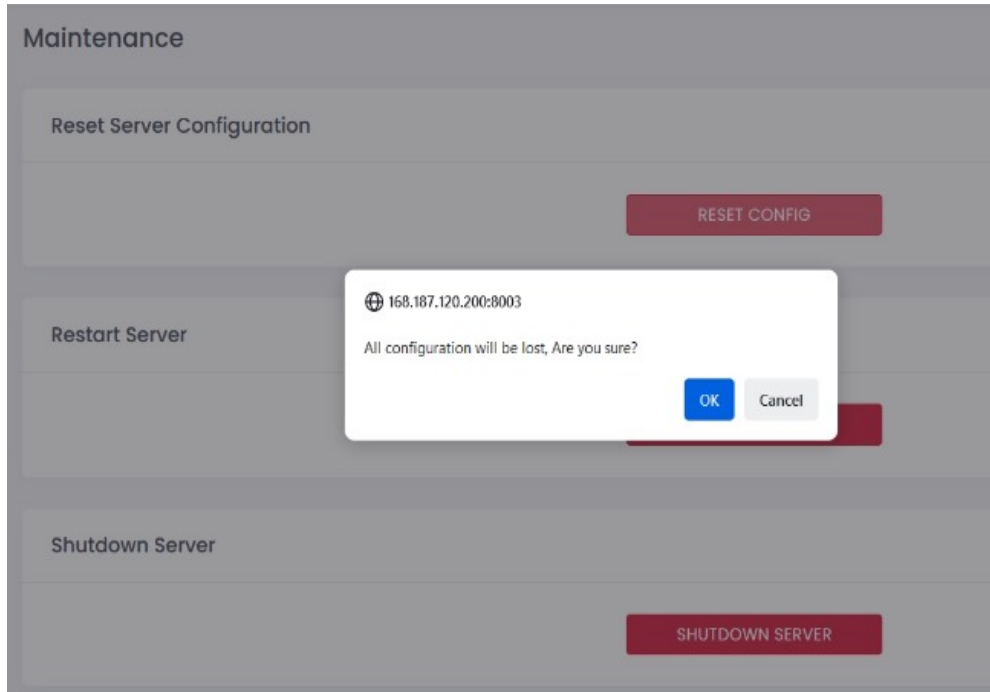
Restart Server

RESTART SERVER

Shutdown Server

SHUTDOWN SERVER

Following figure will show a message box while clicking on RESET CONFIG



19. About

 License

 Backup

 Maintenance

ACCOUNT PAGES

 About



Steps To Follow:

1. Click on About will navigate to About tab.

About page will display the following:

Current Version of nBalance installed.

About

x

Current Version : 10.3



Key: EA00A0-2A4637-4310AF-8467CB-B619BA-36A7F5