Load Balancing Iternity iCAS FS

Version 1.0.0
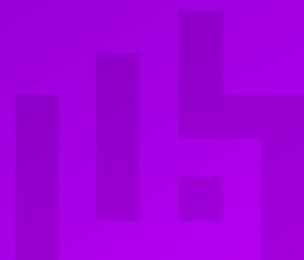
Table of Contents

1. About this Brief

This brief outlines the steps required to configure a load balanced iCAS FS environment utilizing Loadbalancer.org appliances. It covers the configuration of the load balancers and also any iCAS FS configuration changes that are required to enable load balancing.

For more information about initial appliance deployment, network configuration and using the Web User Interface (WebUI), please also refer to the Administration Manual.

2. Loadbalancer.org Appliances Supported

All our products can be used for load balancing iCAS FS. For full specifications of available models please refer to https://www.loadbalancer.org/products/enterprise.

Some features may not be available or fully supported in all cloud platforms due to platform specific limitations. For more details, please refer to the "Main Differences to our Standard (Non-Cloud) Product" section in the appropriate cloud platform Quick Start Guide or check with Loadbalancer.org support.

3. Software Versions Supported

3.1. Loadbalancer.org Appliance

- V8.13.0 and later

> ⓧ **Note**   The screenshots used throughout this document aim to track the latest Loadbalancer.org software version. If you're using an older version, or the very latest, the screenshots presented here may not match your WebUI exactly.

3.2. iCAS FS

- All versions

4. iCAS FS

iCAS FS is a scale-out platform for archive, backup and business critical data of all kinds. The software-defined storage platform scales without limits and impresses with low TCO, great ease of use and high flexibility.

5. Load Balancing iCAS FS

> ⓧ **Note**   It's highly recommended that you have a working iCAS FS environment first before implementing the load balancer.

5.1. Load Balancing & HA Requirements

Using a load balancer with ICAS FS helps deliver maximum performance and availability by evenly distributing workload across all ICAS FS nodes. It also ensures that requests are only sent to healthy nodes.

5.2. Virtual Service (VIP) Requirements

To provide load balancing and HA for ICAS FS, the following VIPs are required:

Ref.	VIP Name	Mode	Port(s)	Persistence Mode	Health Check
VIP 1	iCAS-FS-S3	L7 SNAT (HTTP)	80	None	HTTP (GET)
VIP 2	iCAS-FS-SMB	L7 SNAT (TCP)	445	None	Connect to Port
VIP 3	iCAS-FS-NFS	L7 SNAT (TCP)	111,2049	None	Connect to Port

5.3. TLS/SSL Termination

SSL Termination is configured on the load balancer for the following VIPs:

- VIP1 - **iCAS-FS-S3**

This provides a corresponding HTTPS Virtual Service on port 443 for this VIP. Certificates in PEM or PFX format can be uploaded to the load balancer.

6. Deployment Concept

Once the load balancer is deployed, clients connect to the Virtual Services (VIPs) rather than connecting directly to one of the iCAS FS servers. These connections are then load balanced across the iCAS FS servers to distribute the load according to the load balancing algorithm selected.
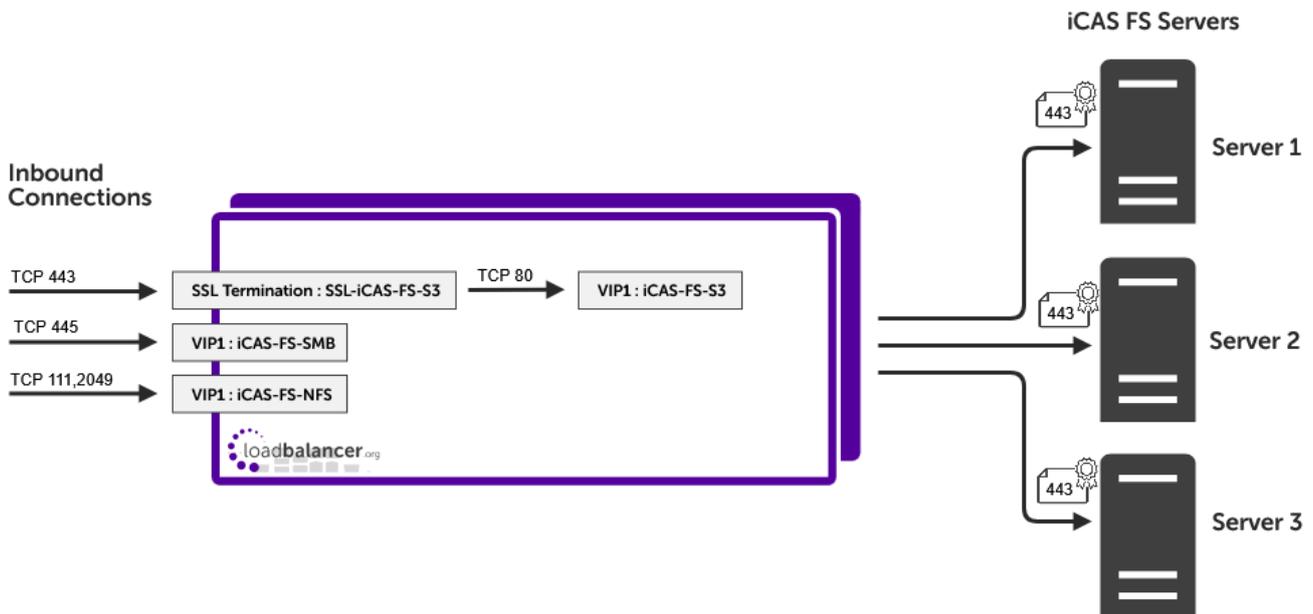
> ⚸ **Note**
> The load balancer can be deployed as a single unit, although Loadbalancer.org recommends a clustered pair for resilience & high availability. Please refer to the section Configuring HA - Adding a Secondary Appliance in the appendix for more details on configuring a clustered pair.

7. Load Balancer Deployment Methods

The load balancer can be deployed in 4 fundamental ways: *Layer 4 DR mode*, *Layer 4 NAT mode*, *Layer 4 SNAT mode*, and *Layer 7 SNAT mode*.

For iCAS FS, layer 7 SNAT mode is recommended. This mode is described below and is used for the configuration presented in this brief.

7.1. Layer 7 SNAT Mode

Layer 7 SNAT mode uses a proxy (HAProxy) at the application layer. Inbound requests are terminated on the load balancer and HAProxy generates a new corresponding request to the chosen Real Server. As a result, Layer 7 is typically not as fast as the Layer 4 methods. Layer 7 is typically chosen when either enhanced options such as SSL termination, cookie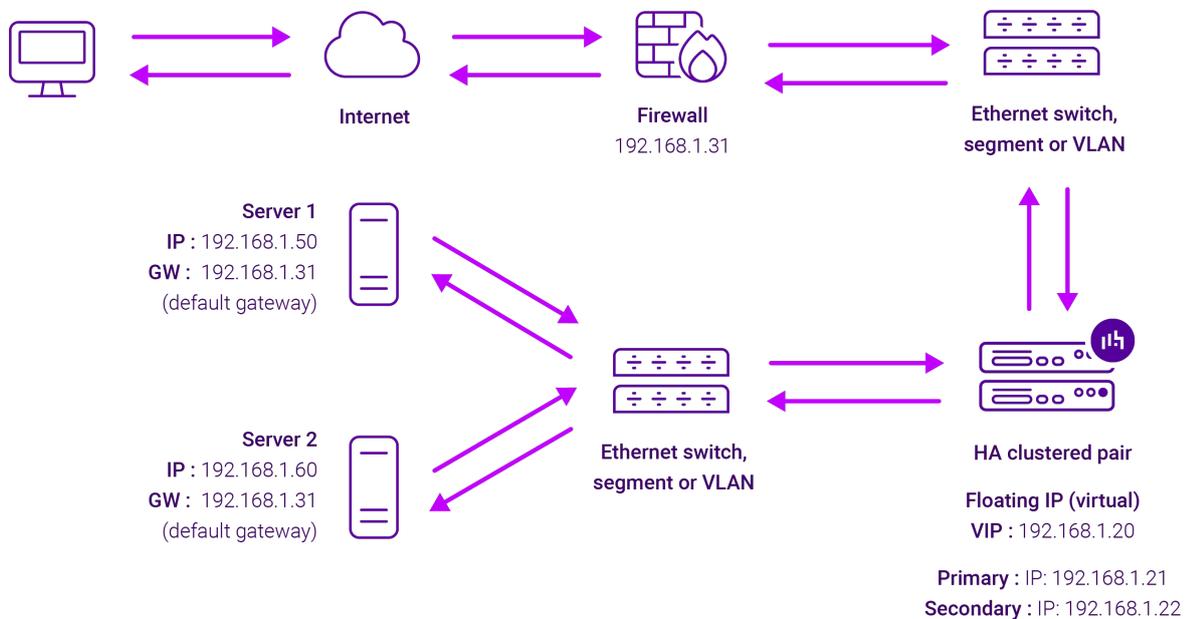 based persistence, URL rewriting, header insertion/deletion etc. are required, or when the network topology prohibits the use of the layer 4 methods. The image below shows an example network diagram for this mode.

- Because layer 7 SNAT mode is a full proxy, Real Servers in the cluster can be on any accessible network including across the Internet or WAN.

- Layer 7 SNAT mode is not transparent by default, i.e. the Real Servers will not see the source IP address of the client, they will see the load balancer's own IP address by default, or any other local appliance IP address if preferred (e.g. the VIP address). This can be configured per layer 7 VIP. If required, the load balancer can be configured to provide the actual client IP address to the Real Servers in 2 ways. Either by inserting a header that contains the client's source IP address, or by modifying the Source Address field of the IP packets and replacing the IP address of the load balancer with the IP address of the client. For more information on these methods please refer to Transparency at Layer 7.

- Layer 7 SNAT mode can be deployed using either a one-arm or two-arm configuration. For two-arm deployments, **eth1** is typically used for client side connections and **eth0** is used for Real Server connections, although this is not mandatory since any interface can be used for any purpose.

- Requires no mode-specific configuration changes to the load balanced Real Servers.

- Port translation is possible with Layer 7 SNAT mode, e.g. VIP:80 → RIP:8080 is supported.

- You should not use the same RIP:PORT combination for layer 7 SNAT mode VIPs and layer 4 SNAT mode VIPs because the required firewall rules conflict.

8. Loadbalancer.org Appliance – the Basics

8.1. Virtual Appliance

A fully featured, fully supported 30 day trial is available if you are conducting a PoC (Proof of Concept) deployment. The VA is currently available for VMware, Virtual Box, Hyper-V, KVM, XEN and Nutanix AHV and has been optimized for each Hypervisor. By default, the VA is allocated 2 vCPUs, 4GB of RAM and has a 20GB virtual disk. The Virtual Appliance can be downloaded here.

> ⚬ **Note**   The same download is used for the licensed product, the only difference is that a license key file (supplied by our sales team when the product is purchased) must be applied using the appliance's WebUI.

> ⚬ **Note**   Please refer to Virtual Appliance Installation and the ReadMe.txt text file included in the VA download for additional information on deploying the VA using the various Hypervisors.

> ⚬ **Note**   The VA has 4 network adapters. For VMware only the first adapter (**eth0**) is connected by default. For HyperV, KVM, XEN and Nutanix AHV all adapters are disconnected by default. Use the network configuration screen within the Hypervisor to connect the required adapters.

8.2. Initial Network Configuration

After boot up, follow the instructions on the appliance console to configure the management IP address, subnet mask, default gateway, DNS servers and other network and administrative settings.

> (①) **Important**   Be sure to set a secure password for the load balancer, when prompted during the setup routine.

8.3. Accessing the Appliance WebUI

The WebUI is accessed using a web browser. By default, users are authenticated using Apache authentication. Users can also be authenticated against LDAP, LDAPS, Active Directory or Radius - for more information, please refer to External Authentication.

> ⚬ **Note**   There are certain differences when accessing the WebUI for the cloud appliances. For details, please refer to the relevant Quick Start / Configuration Guide.

1. Using a browser, navigate to the following URL:

   https://<IP-address-configured-during-the-network-setup-wizard>:9443/lbadmin/

> 🔒 **Note**   You'll receive a warning about the WebUI's SSL certificate. This is due to the default self signed certificate that is used. If preferred, you can upload your own certificate - for more information, please refer to Appliance Security Features.

> 🔒 **Note**   If you need to change the port, IP address or protocol that the WebUI listens on, please refer to Service Socket Addresses.

2. Log in to the WebUI using the following credentials:

   Username: loadbalancer
   Password: <configured-during-network-setup-wizard>

> 🔒 **Note**   To change the password, use the WebUI menu option: *Maintenance > Passwords.*

Once logged in, the WebUI will be displayed as shown below:

Primary | Secondary   Active | Passive   Link   8 Seconds

- System Overview
- Local Configuration
- Cluster Configuration
- Maintenance
- View Configuration
- Reports
- Logs
- Support
- Live Chat

WARNING: YOUR TRIAL IS DUE TO EXPIRE IN 30 DAYS.

Buy with confidence. All purchases come with a 90 day money back guarantee.
Already bought? Enter your license key **here**

Buy Now

System Overview   ⑦   2025-05-08 12:37:21 UTC

Would you like to run the Setup Wizard?

Accept   Dismiss

VIRTUAL SERVICE ⬍	IP ⬍	PORTS ⬍	CONNS ⬍	PROTOCOL ⬍	METHOD ⬍	MODE ⬍

No Virtual Services configured.

Network Bandwidth

RX	28 Min, 2713 Avg, 27344772 Total,
TX	0 Min, 13777 Avg, 138872181 Total,

System Load Average

1m average	0.00 Min, 0.08 Avg, 0.68 Max
5m average	0.00 Min, 0.04 Avg, 0.30 Max
15m average	0.00 Min, 0.02 Avg, 0.12 Max

Memory Usage

3. You'll be asked if you want to run the Setup Wizard. Click **Dismiss** if you're following a guide or want to configure the appliance manually. Click **Accept** to start the Setup Wizard.

> 🔒 **Note**   The Setup Wizard can only be used to configure Layer 7 services.

8.3.1. Main Menu Options

System Overview - Displays a graphical summary of all VIPs, RIPs and key appliance statistics

Local Configuration - Configure local host settings such as IP address, DNS, system time etc.

Cluster Configuration - Configure load balanced services such as VIPs & RIPs

Maintenance - Perform maintenance tasks such as service restarts and creating backups

View Configuration - Display the saved appliance configuration settings

Reports - View various appliance reports & graphs

Logs - View various appliance logs

Support - Create a support download, contact the support team & access useful links

Live Chat - Start a live chat session with one of our Support Engineers

8.4. Appliance Software Update

We recommend that the appliance is kept up to date to ensure that you benefit from the latest bug fixes, security updates and feature improvements. Both online and offline update are supported.

> 🔋 **Note**   For full details, please refer to Appliance Software Update in the Administration Manual.

> 🔋 **Note**   Services may need to be restarted/reloaded after the update process completes or in some cases a full appliance restart may be required. We therefore recommend performing the update during a maintenance window.

8.4.1. Online Update

The appliance periodically contacts the Loadbalancer.org update server (**update.loadbalancer.org**) and checks for updates. This is the default behavior and can be disabled if preferred. If an update is found, a notification similar to the example below will be displayed at the top of the WebUI:

Information: Update 8.13.5 is now available for this appliance.

Online Update

Click **Online Update**. A summary of all new features, improvements, bug fixes and security updates included in the update will be displayed. Click **Update** at the bottom of the page to start the update process.

> ⚠️ **Important**   Do not navigate away whilst the update is ongoing, this may cause the update to fail.

The update can take several minutes depending on download speed and upgrade version. Once complete, the following message will be displayed:

Information: Update completed successfully. Return to **system overview**.

If services need to be reloaded/restarted or the appliance needs a full restart, you'll be prompted accordingly.

8.4.2. Offline Update

If the appliance does not have access to the Internet, offline update can be used.

To check for the latest version, please refer to our product roadmap page available here. To obtain the latest offline update files contact support@loadbalancer.org.

To perform an offline update:

1. Using the WebUI, navigate to: *Maintenance > Software Update*.

2. Select **Offline Update**.

3. The following screen will be displayed:

4. Select the *Archive* and *Checksum* files.

5. Click **Upload and Install**.

6. If services need to be reloaded/restarted or the appliance needs a full restart, you'll be prompted accordingly.

8.5. Ports Used by the Appliance

By default, the appliance uses the following TCP & UDP ports:

Protocol	Port	Purpose
TCP	22	SSH
TCP & UDP	53	GSLB
TCP & UDP	123	NTP
TCP & UDP	161	SNMP
UDP	6694	Heartbeat between Primary & Secondary appliances in HA mode
TCP	7778	HAProxy persistence table replication
TCP	9000	Gateway service for ADC Portal comms
TCP	9080	WebUI - HTTP (disabled by default)
TCP	9081	Nginx fallback server
TCP	9443	WebUI - HTTPS
TCP	25565	Shuttle service for ADC Portal comms

> 🔒 **Note** All ports listed above except port 123 (NTP) can be changed if required.

- To change the port used for heartbeat, refer to Configuring High Availability

- To change the port used for HAProxy replication, refer to Layer 7 - Advanced Configuration

- To change other ports, refer to Service Socket Addresses

8.6. HA Clustered Pair Configuration

Loadbalancer.org recommend that load balancer appliances are deployed in pairs for high availability. In this brief a single unit is deployed first, adding a secondary unit is covered in Configuring HA - Adding a Secondary Appliance.

9. Appliance Configuration for iCAS FS

9.1. VIP 1 - iCAS-FS-S3

9.1.1. Virtual Service (VIP) Configuration

1. Using the WebUI, navigate to *Cluster Configuration > Layer 7 − Virtual Services* and click on **Add a new Virtual Service**.

2. Enter the following details:

Virtual Service		[Advanced +]	
Label	iCAS-FS-S3		❓
IP Address	192.168.110.65		❓
Ports	80		❓
Protocol		**[Advanced +]**	
Layer 7 Protocol	HTTP Mode ⌄		❓

<div align="right">Cancel   Update</div>

3. Enter a suitable *Label* (name) for the Virtual Service, e.g. **iCAS-FS-S3**.

4. Set the *Virtual Service IP* address field to the required IP address, e.g. **192.168.110.65**.

5. Set the *Virtual Service Ports* field to **80**.

6. Set the *Layer 7 Protocol* to **HTTP Mode**.

7. Click **Update**.

8. Now click **Modify** next to the newly created VIP.

9. Scroll down to the *Persistence* section.

   - Set *Persistence Mode* to **None**.

10. Scroll down to the *Health Checks* section.

    - Set the *Health Check* to **Negotiate HTTP (GET)**.

- Set *Request to Send* to **/minio/health/cluster**.

- Leave *Response Expected* blank (this will configure the load balancer to look for a 200 OK response).

11. Scroll down to the *SSL* section.

- Enable (check) the *Enable Backend Encryption* checkbox.

12. Scroll down to the *Other* section and click **[Advanced]**.

- Enable (check) the *Timeout* checkbox.

- Set *Client Timeout* to **10m** (10 minutes).

- Set *Real Server Timeout* to **10m**.

13. Click **Update**.

9.1.2. Configure the Associated Real Servers (RIPs)

1. Using the WebUI, navigate to *Cluster Configuration > Layer 7 – Real Servers* and click on **Add a new Real Server** next to the newly created VIP.

Label	iCAS-FS-1	❓
Real Server IP Address	192.168.110.70	❓
Real Server Port	443	❓
Re-Encrypt to Backend	☑	❓
Redirect URL		❓
Weight	100	❓

Cancel Update

2. Enter a suitable *Label* (name) for the Real Server, e.g. **iCAS-FS-1**.

3. Change the *Real Server IP Address* field to the required IP address, e.g. **192.168.110.70**.

4. Set the *Real Server Port* field to **443**.

5. Ensure that *Re-Encrypt to Backend* is enabled (checked).

6. Click **Update**.

7. Now repeat these steps to add the other iCAS FS nodes.

9.1.3. Upload the Certificate

> 👤 **Note**   A certificate in either PEM or PFX format can be uploaded to the load balancer.

1. Using the WebUI, navigate to: *Cluster Configuration > SSL Certificates*.

2. Click **Add a new SSL Certificate** and select *Upload prepared PEM/PFX file*.

I would like to:	● **Upload prepared PEM/PFX file**	
	○ **Create a new SSL Certificate Signing Request (CSR)**	❓
	○ **Create a new Self-Signed SSL Certificate.**	
Label	iCAS-FS-Cert	❓
File to upload	Choose File iCAS-FS-Cert.pfx	❓
PFX File Password	●●●●●●●●●●●●	❓

Upload Certificate

3. Enter a suitable *Label* for the certificate, e.g. **iCAS-FS-Cert**.

4. Browse to and select the certificate file to upload (PEM or PFX format).

5. For PFX files specify the password if required.

6. Click **Upload Certificate**.

9.1.4. Configure SSL Termination

1. Using the WebUI, navigate to: *Cluster Configuration > SSL Termination* and click **Add a new Virtual Service**.

Label	SSL-iCAS-FS-S3	❓
Associated Virtual Service	iCAS-FS-S3 ▾	❓
Virtual Service Port	443	❓
SSL Operation Mode	High Security ▾	❓
SSL Certificate	icas-fs-s3 ▾	❓
Source IP Address		❓
Enable Proxy Protocol	☑	❓
Bind Proxy Protocol to L7 VIP	iCAS-FS-S3 ▾	❓

Cancel **Update**

2. Set the *Associated Virtual Service* to the appropriate VIP, e.g. **iCAS-FS-S3**.

> 🔒 **Note** Once the VIP is selected, the Label field will be auto-populated with **SSL-iCAS-FS-S3**. This can be changed if preferred.

3. Leave *Virtual Service Port* set to **443**.

4. Leave *SSL operation Mode* set to **High Security**.

5. Select the required certificate from the *SSL Certificate* drop-down, e.g. **iCAS-FS-Cert**.

6. Click **Update**.

9.2. VIP 2 - iCAS-FS-SMB

9.2.1. Virtual Service (VIP) Configuration

1. Using the WebUI, navigate to *Cluster Configuration > Layer 7 – Virtual Services* and click on **Add a new Virtual Service**.

2. Enter the following details:

Virtual Service		[Advanced +]	
Label	iCAS-FS-SMB		❓
IP Address	192.168.110.65		❓
Ports	445		❓
Protocol		**[Advanced +]**	
Layer 7 Protocol	TCP Mode ▾		❓

<div align="right">

Cancel   Update

</div>

3. Enter a suitable *Label* (name) for the Virtual Service, e.g. **iCAS-FS-SMB**.

4. Set the *Virtual Service IP Address* field to the required IP address, e.g. **192.168.110.65**.

5. Set the *Ports* field to **445**.

6. Set the *Layer 7 Protocol* to **TCP Mode**.

7. Click **Update** to create the virtual service.

8. Now click **Modify** next to the newly created VIP.

9. Scroll down to the *Persistence* section.

   ▪ Set *Persistence Mode* to **None**.

10. Scroll down to the *Other* section and click **Advanced**.

    ▪ Enable (check) the *Timeout* checkbox.

    ▪ Set *Client Timeout* to **5m** (5 minutes).

    ▪ Set *Real Server Timeout* to **5m**.

11. Click **Update**.

9.2.2. Configure the Associated Real Servers (RIPs)

1. Using the WebUI, navigate to *Cluster Configuration > Layer 7 – Real Servers* and click on **Add a new Real Server** next to the newly created VIP.

Label	iCAS-FS-1	❓
Real Server IP Address	192.168.110.70	❓
Real Server Port	445	❓
Re-Encrypt to Backend	☐	❓
Weight	100	❓

<div align="right">Cancel   Update</div>

2. Enter a suitable *Label* (name) for the Real Server, e.g. **iCAS-FS-1**.

3. Set the *Real Server IP Address* field to the required IP address, e.g. **192.168.110.70**.

4. Set the *Real Server Port* field to **445**.

5. Click **Update**.

6. Now repeat these steps to add the other iCAS FS nodes.

9.3. VIP 3 - iCAS-FS-NFS

9.3.1. Virtual Service (VIP) Configuration

1. Using the WebUI, navigate to *Cluster Configuration > Layer 7 – Virtual Services* and click on **Add a new Virtual Service**.

2. Enter the following details:

Virtual Service		[Advanced +]
Label	iCAS-FS-NFS	❓
IP Address	192.168.110.65	❓
Ports	111,2049	❓
Protocol		**[Advanced +]**
Layer 7 Protocol	TCP Mode ⌄	❓

<div align="right">Cancel   Update</div>

3. Enter a suitable *Label* (name) for the Virtual Service, e.g. **iCAS-FS-NFS**.

4. Set the *Virtual Service IP Address* field to the required IP address, e.g. **192.168.110.65**.

5. Set the *Ports* field to **111,2049**.

6. Set the *Layer 7 Protocol* to **TCP Mode**.

7. Click **Update** to create the virtual service.

8. now click **Modify** next to the newly created VIP.

9. Scroll down to the *Persistence* section.

   ▪ Set *Persistence Mode* to **None**.

10. Scroll down to the *Other* section and click **Advanced**.

    ▪ Enable (check) the *Timeout* checkbox.

    ▪ Set *Client Timeout* to **5m** (5 minutes).

    ▪ Set *Real Server Timeout* to **5m**.

11. Click **Update**.

9.3.2. Configure the Associated Real Servers (RIPs)

1. Using the WebUI, navigate to *Cluster Configuration > Layer 7 – Real Servers* and click on **Add a new Real Server** next to the newly created VIP.

Label	iCAS-FS-1	❓
Real Server IP Address	192.168.110.70	❓
Real Server Port		❓
Re-Encrypt to Backend	☐	❓
Weight	100	❓

<div align="right">Cancel   Update</div>

2. Enter a suitable *Label* (name) for the Real Server, e.g. **iCAS-FS-1**.

3. Set the *Real Server IP Address* field to the required IP address, e.g. **192.168.110.70**.

4. Leave the *Real Server Port* field blank.

5. Click **Update**.

6. Now repeat these steps to add the other iCAS FS nodes.

9.4. Finalizing the Configuration

To apply the new settings, HAProxy and STunnel must both be reloaded. This can be done using the buttons in the "Commit changes" box at the top of the screen or by using the *Restart Services* menu option:

1. Using the WebUI, navigate to: *Maintenance > Restart Services*.

2. Click **Reload HAProxy**.

3. Click **Reload STunnel**.

10. Testing & Verification

> 🔒 **Note**   For additional guidance on diagnosing and resolving any issues you may have, please also refer to Diagnostics & Troubleshooting.

10.1. Accessing the Application via the Load Balancer

Verify that you're able to successfully access all load balanced applications and services via the Virtual Services on the load balancer.

> 🔒 **Note**   Ensure that DNS is updated so that any FQDNs used point to the VIPs rather than individual servers.

10.2. Using System Overview

The System Overview can be viewed using the WebUI. It shows a graphical view of all VIPs & RIPs (i.e. the iCAS FS nodes) and shows the state/health of each node as well as the state of the cluster as a whole. This can be used to ensure all servers are up and available (green).

System Overview ❓
                                                                            2025-09-30 14:57:43 UTC

	VIRTUAL SERVICE ⬍	IP ⬍	PORTS ⬍	CONNS ⬍	PROTOCOL ⬍	METHOD ⬍	MODE ⬍	
⬆	iCAS-FS-S3	192.168.110.65	9000	0	HTTP	Layer 7	Proxy	📊
	REAL SERVER	IP	PORTS	WEIGHT	CONNS			
⬆	iCAS-FS-1	192.168.110.70	9000	100	0	Drain	Halt	📊
⬆	iCAS-FS-2	192.168.110.71	9000	100	0	Drain	Halt	📊
⬆	iCAS-FS-SMB	192.168.110.65	445	0	TCP	Layer 7	Proxy	📊
⬆	iCAS-FS-NFS	192.168.110.65	111,2049	0	TCP	Layer 7	Proxy	📊

11. Technical Support

For more details about configuring the appliance and assistance with designing your deployment please don't hesitate to contact the support team using the following email address: support@loadbalancer.org.

12. Further Documentation

For additional information, please refer to the Administration Manual.

13. Appendix

13.1. Configuring HA - Adding a Secondary Appliance

Our recommended configuration is to use a clustered HA pair of load balancers to provide a highly available and resilient load balancing solution. We recommend that the Primary appliance is fully configured first, then the Secondary appliance can be added to create an HA pair. Once the HA pair is configured, load balanced services must be configured and modified on the Primary appliance. The Secondary appliance will be automatically kept in sync.

> 🔒 **Note**   For Enterprise Azure, the HA pair should be configured first. For more information, please refer to the Azure Quick Start/Configuration Guide available in the documentation library

The clustered HA pair uses Heartbeat to determine the state of the other appliance. Should the active device (normally the Primary) suffer a failure, the passive device (normally the Secondary) will take over.

13.1.1. Non-Replicated Settings

A number of settings are not replicated as part of the Primary/Secondary pairing process and therefore must be manually configured on the Secondary appliance. These are listed by WebUI menu option in the table below:

WebUI Main Menu Option	Sub Menu Option	Description
Local Configuration	Hostname & DNS	Hostname and DNS settings
Local Configuration	Network Interface Configuration	Interface IP addresses, bonding configuration and VLANs
Local Configuration	Routing	Default gateways and static routes
Local Configuration	System Date & time	Time and date related settings
Local Configuration	Physical – Advanced Configuration	Various appliance settings
Local Configuration	Portal Management	Portal management settings
Local Configuration	Security	Security settings
Local Configuration	SNMP Configuration	SNMP settings
Local Configuration	Graphing	Graphing settings
Local Configuration	License Key	Appliance licensing
Maintenance	Backup & Restore	Local XML backups
Maintenance	Software Updates	Appliance software updates
Maintenance	Firewall Script	Firewall (iptables) configuration
Maintenance	Firewall Lockdown Wizard	Appliance management lockdown settings

> **(!) Important** Make sure that where any of the above have been configured on the Primary appliance, they're also configured on the Secondary.

## 13.1.2. Configuring the HA Clustered Pair

> **(!) Important** During HA pairing, all WebUI users and passwords are synchronized from the Primary to the Secondary. After clustering completes (you will be logged out of the Secondary when this occurs), the Primary's credentials should be used to login to both nodes.

> **🔒 Note** If you have already run the firewall lockdown wizard on either appliance, you'll need to ensure that it is temporarily disabled on both appliances whilst performing the pairing process.

1. Deploy a second appliance that will be the Secondary and configure initial network settings.

2. Using the WebUI on the Primary appliance, navigate to: *Cluster Configuration > High-Availability Configuration*.

Create a Clustered Pair
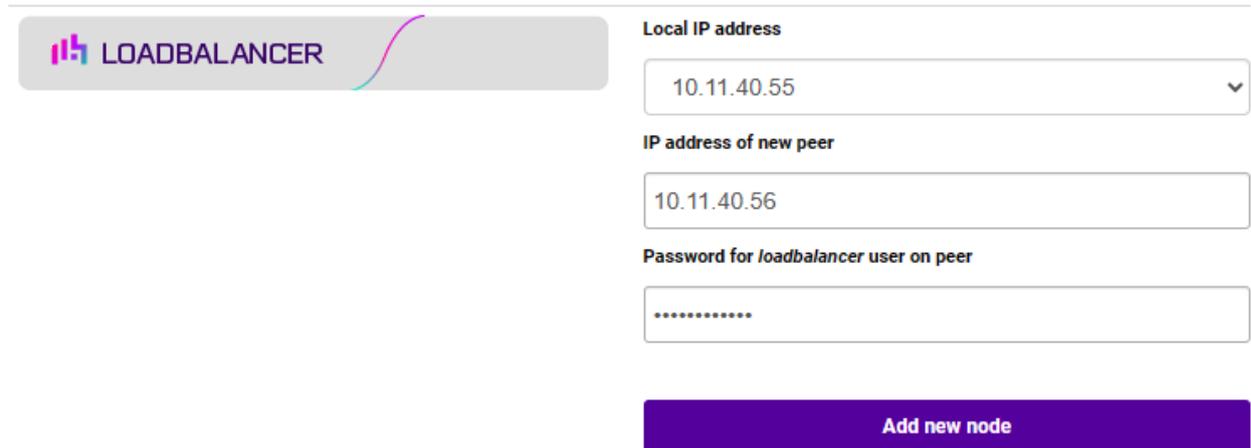
ılı LOADBALANCER	**Local IP address**
	10.11.40.55
	IP address of new peer
	10.11.40.56
	Password for *loadbalancer* user on peer
	••••••••••••
	Add new node

3. Specify the IP address and the *loadbalancer* user's password for the Secondary (peer) appliance as shown in the example above.

4. Click **Add new node**.

5. The pairing process now commences as shown below:

Create a Clustered Pair

Local IP address

10.11.40.55

IP address of new peer

10.11.40.56

Password for *loadbalancer* **user on peer**

············

LOADBALANCER Primary

IP: 10.11.40.55

Attempting to pair..

LOADBALANCER Secondary

IP: 10.11.40.56

configuring

6. Once complete, the following will be displayed on the Primary appliance:

High Availability Configuration - primary

LOADBALANCER Primary

IP: 10.11.40.55

LOADBALANCER Secondary

IP: 10.11.40.56

Break Clustered Pair

7. To finalize the configuration, restart heartbeat and any other services as prompted in the "Commit changes" message box at the top of the screen.

⸸ **Note**   Clicking the **Restart Heartbeat** button on the Primary appliance will also automatically restart heartbeat on the Secondary appliance.

⸸ **Note**   For more details on configuring HA with 2 appliances, please refer to Configuring High Availability.

⸸ **Note**   For details on testing and verifying HA, please refer to Clustered Pair Diagnostics.

14. Document Revision History

Version	Date	Change	Reason for Change	Changed By
1.0.0	3 March 2026	Initial version		RJC

About Loadbalancer.org

Loadbalancer.org's mission is to ensure that its clients' businesses are never interrupted. The load balancer experts ask the right questions to get to the heart of what matters, bringing a depth of understanding to each deployment. Experience enables Loadbalancer.org engineers to design less complex, unbreakable solutions - and to provide exceptional personalized support.