

High Availability

27 Apr 2024



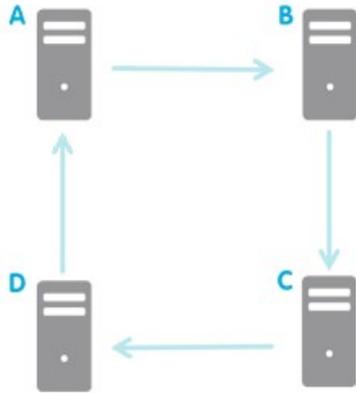
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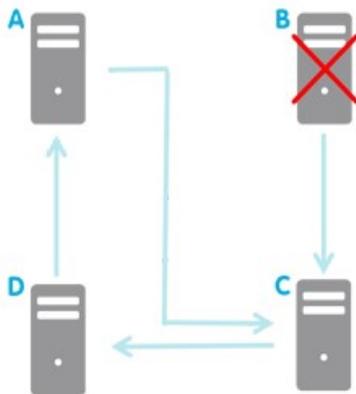
High Availability

Introduction to HA Configuration

An Application Suite cluster is a set of two or more IAS installations (**cluster nodes**) that have been configured to work together in order to grant continued service even when some of them fail. Each node in the cluster synchronises its data with another one. In a normal situation the information tend to be exchanged in a ring to ensure that every node is updated as soon as possible.



If one of the nodes fails, the data synchronization service can detect it and automatically bypass it by changing its topology **without any administrative intervention**. In the same way, when the failed node is restored, the cluster will reintegrate it automatically.



This section of the Administrator Guide explains how to create, manage and monitor an Application Suite Cluster to provide high availability.

Creating a new Cluster

Before starting

Before creating a new cluster or joining a node to an existing cluster, keep in mind the following restrictions:

- It's strongly suggested to configure all UC Suite nodes to send email notifications
- **Ensure that all UC Suite nodes clocks are up-to-date and synchronized**
- All nodes in the same cluster must have the **same UC Suite version**. If they have not, upgrade them to the latest UC Suite version before creating the cluster
- It's highly recommended that all nodes use the same SQL server version
- At the beginning, all nodes in the cluster will get the configuration and data from the first node. A node that joins an existing cluster will completely lose both its configuration and data. So, choose carefully the first node that will be used to create a cluster.
- Joining a node to a cluster requires to **stop all applications** on that node. Once added, a **server restart of all other nodes** is required, too.

Network considerations

- TCP port 52700 will be allocated to the communication between the nodes
- A set of TCP ports above 52700 is used for data synchronization between the nodes (the number of ports depends on the number of nodes)

Creating a new cluster

Before creating an UC Suite cluster, you have to choose the node that will be used as the first source of data (i.e. the node that contains the data that will be shared in the cluster). Notice that this is a critical decision, since **all the data in the other nodes will be lost**. Also, before continuing, ensure that the node is already configured to use the desired database server (you can check this through the Support web page).

Once you've chosen the node, log in as administrator in that node's web portal and click on *Admin -> High Availability*.

You are asked to choose whether you want to create a new cluster or to add this node to an existing cluster.

High Availability Cluster
Step 1 of 2

This server does not belong to any high availability cluster.



Add to existing Cluster

Choose this option if you have already created an high availability cluster, which you want to join this node to. This node will be completely reconfigured with the destination cluster's configuration. Please, pay attention that this node's local data will be overwritten.



New Cluster

Choose this option to create a new high availability cluster, using this server's current configuration as master source for all other nodes that will be joined later. All cluster's nodes must have the same Imagicle Application Suite versions.

Next

On the first node choose *New Cluster* and click *Next*.

In the next page you choose one of the IP addresses of the machine. This is the address used by the other nodes of the cluster to communicate with this node.

Starting from 2022.Spring.1 release, Imagicle High Availability supports IPv6 addressing too. If you choose this addressing type, please remember that all nodes should be added with same IPv6 addressing.

You also have to specify if every node leverages its own database instance (*Replicated Database*), so the cluster synchronizes data among all of them, or if the cluster leverages a single database instance (*Shared Database*).

Create New High Availability Cluster
Step 2 of 2

Choose this node's IP address which will be used by other cluster nodes to communicate with:

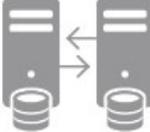
192.168.1.110
▼

192.168.1.110

fd00::99b2:a140:9439:991e

fe80::99b2:a140:9439:991e%9

synchronization:



Replicated Database (recommended)

Each node connects to its own SQL database. UC Suite will automatically synchronize data among all cluster nodes.



Shared Database

All cluster nodes will use the same Microsoft SQL Server database that is currently configured within this server.

Database's high availability relies on the external database server's availability, such as Microsoft SQL Server Clustering.

If you choose to use multiple database instances, **it's highly recommended that all of them have the same SQL Server version.**

Once you've made your choices, click *Next*.

If you confirm your choices, the cluster creation procedure begins and it may take a long time. While the cluster is being prepared, all the applications run as usual.

As soon as the procedure is accomplished and cluster has been successfully created, the local node sends a *success notification*. If the creation fails, it sends a *failure notification*.

Cluster creation completed



The Cluster containing the local node has been successfully created.
To add more nodes, follow the steps described in the [Imagicle guide](#).

Close

From now on, every time you open the following web page, you can see the list of all the nodes in the cluster.

Of course, when the cluster is prepared, it contains just the local node. Other nodes will appear when they'll be added.

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Local node belongs to a high availability cluster.

[+ Add a new node to this cluster](#)

NODE	IP ADDRESS
WIN-HL6MT1DL3N4 (Local Node)	192.168.150.132

Database Synchronization Strategy: **Replicated** 

Replication Service Management

The service is **Started**

Adding a node to an existing cluster

Before starting

Warning: when you add a node to a cluster you will lose all the data that is on that node.

Before you try to add a node to a cluster, ensure that:

- The new node has **the same UC Suite version of the other nodes** in the cluster, otherwise you won't be able to complete the procedure
- The node is already configured to use the desired database server (you can check this through Support web page)
- If the cluster is using the *Replicated Database* strategy, there's enough free disk space on the machine to contain at least twice the size of the database of a node that already belongs to the cluster.

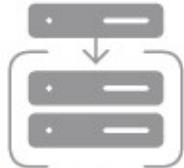
You should notice also that **during this procedure all the applications of the Suite will be stopped and unavailable on this node.**

Procedure

To add a node to a cluster, log in as administrator in that node's UC Suite and click on *Admin -> High Availability*.

High Availability Cluster Step 1 of 2

This server does not belong to any high availability cluster.


Add to existing Cluster

Choose this option if you have already created a high availability cluster, which you want to join this node to. This node will be completely reconfigured with the destination cluster's configuration. Please, pay attention that this node's local data will be overwritten.


New Cluster

Choose this option to create a new high availability cluster, using this server's current configuration as master source for all other nodes that will be joined later. All cluster's nodes must have the same Imagicle Application Suite versions.

Choose *Add to existing Cluster* and click *Next*.

On the next page you choose one of the IP addresses of the machine. This becomes the address used by the other nodes of the cluster to communicate with this node.

Starting from 2022.Spring.1 release, Imagicle High Availability supports IPv6 addressing too. If you choose this addressing type, please remember that all nodes should be added with same IPv6 addressing.

Join an Existing Cluster
Step 2 of 2

Choose this node's IP address which will be used by other cluster's nodes to communicate with:

192.168.150.133 ▼

Enter the IP address of a node that belongs to the cluster you want to join. All nodes must have the same Application Suite version.

192.168.150.132

Back

Next

Then you must enter the IP address of an existing node (chosen from the displayed nodes list) of the cluster you want to join. **That node must remain up and running until the end of this procedure.**

When you click *Next* and confirm your choices, the node addition procedure starts. It may take a long time, depending on the amount of data contained at that moment in the cluster (this procedure automatically creates a backup of source node's database, download and restore it to the node to be added). As a coarse idea, the first node that joins an existing cluster could take 16 minutes per GB of database size. Nodes that join later, could take 3 minutes per GB.

Joining cluster...



Downloading configuration from the cluster. The operation may take a long time, please wait...



! Applications are currently stopped and must not be used until the operation is complete. Upon completion, they will be automatically started.

When the procedure is complete, the node displays a *success notification*, but if the addition fails it displays a *failure notification*.

Join to cluster completed

This node has successfully joined the cluster and local applications are already running in high availability mode.

To apply the new configuration, restart all the other Imagicle servers that belong to the cluster.

To manage the nodes, follow the steps described in the [Imagicle guide](#).

Close

From now on, the summary page shows the list of all the nodes in the cluster (including the node that you just added). IP addresses are shown in IPv4 or IPv6 format, as they were added in the cluster.

Local node belongs to a high availability cluster.

[+ Add a new node to this cluster](#)

NODE	IP ADDRESS
WIN-6CMR208EMS7	fd00::99b2:a140:9439:991e
WIN-NODO2 (Local Node)	fd00::99b2:a140:9439:995e

Database Synchronization Strategy: **Replicated**

Pls. keep in mind that above cluster's NODE ID corresponds to Imagicle server's host name. You can later change host name, if required; just beware that NODE ID will remain unchanged (with initial host name).

Now, in order to propagate the topology change to all the other nodes, you should **restart all of them, one by one**.

Next, please be aware you must re-configure some node-specific parameters:

- PBX connection(s), like SIP/H.323 trunks, FTP/Telnet, Routing rules, etc.
- Proxy settings
- Launch a DB maintenance, if required, from Support web page
- SMTP parameters
- Monitoring parameters, including email and SNMP notifications configuration
- Numbering plan settings
- VoiceMail pilot
- Contact Manager's custom fields
- Email templates related to Digital Fax, VoiceMail and Call Recording applications

Known limitations

There are some actions an administrator won't be able to do on a cluster:

- On UC Suite versions lower than Summer 2015, you can't remove a node from a cluster.
- Once a node is part of a cluster, you can't change its IP Address.
- You can't change cluster's NODE IDs. To change NODE ID, please contact Imagicle Support.
- You can't restore a UC Suite backup to a cluster node: data integrity is granted by the cluster itself.



For any problem regarding one of the activities above, you can contact [Imagicle Technical Support](#).

Cluster Management

Updating a cluster

All nodes of an high availability cluster must run exactly the same Imagicle suite version. Therefore, if you need to update the suite version, you must update **all nodes** to the same version.

The software update must be done node by node, starting from the first one (the one with lowest position number visible in the support web page). The setup will warn you if you try to upgrade a slave node without having upgraded the master node first.

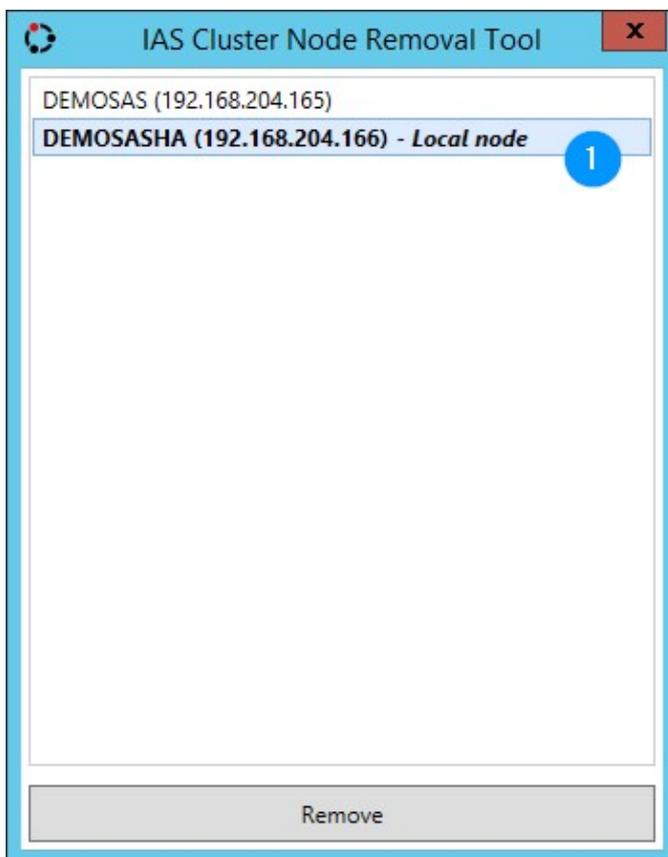
Wait the update process has completed on the current node before updating the next node.

Notice that, in this way, the cluster availability won't suffer any disruption during the update.

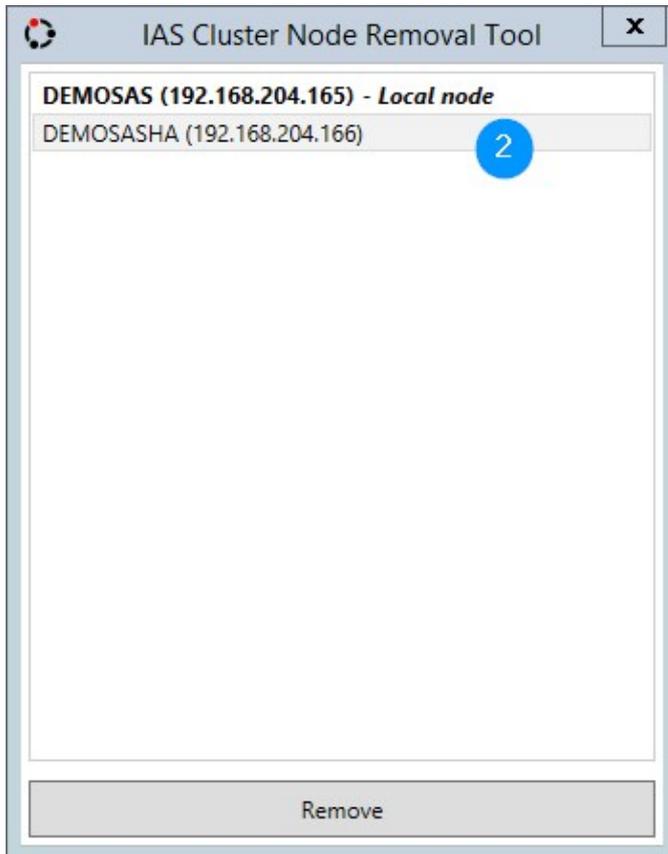
Removing a node from the cluster

To remove a node from an existing cluster, use the following procedure.

1. Upgrade all the cluster nodes to AppSuite 2015 Summer build 3 or later
2. Stop "Imagicle Replication Service" on all nodes
3. On the node you want to remove, run the following program:
`%IASROOT%\Apps\Replication\Component\Assembly\Replication.NodeRemovalTool.exe`
On the tool user interface, choose the **local node**.



4. Run the same tool on all the remaining cluster nodes. On the tool user interface, choose the **IP of the node you removed**.



For any problem regarding one of the activities above, you'll need to contact Imagicle technical support.

Backup of a cluster

Following the correct procedure to backup a cluster of at least two nodes:

- 1) Take a **full backup** of the Imagicle Suite on one server only, using the Imagicle Backup tool and selecting the option "[X] Include historical data". Normally the first (available) node is chosen for this purpose.
This backup can be used in case **all** the servers of the cluster went permanently lost or damaged.
- 2) Take a **light backup** (without historical data) of the Imagicle Suite on every other server of the cluster, using the Imagicle Backup tool. Such backup is recommended to save the node specific configurations that are not replicated across the cluster.
- 3) Save all the backup files in a safe location.

Restoring a cluster

Restoring a single node

If you need to restore a single node of a cluster that went permanently lost or damaged:

- 1) On every other node of the cluster, remove the damaged/lost node from the cluster using the integrated NodeRemoval tool mentioned above.
- 2) Build/deploy a new suite machine from scratch ensuring the installed suite version is exactly the same of the cluster.
- 3) On the new machine, restore the latest backup taken from the unavailable/damaged node. Please, notice that if you took a full backup of the node, you'll need more time.

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- 4) If you see this file **MyDbBackup_*** in "[StonevoiceAS]\Var" folder,(check it in both server) delete it before join the node.
- 5) Join the new machine to the cluster.

Restoring the whole cluster

Use the following procedure if you need to rebuild the whole cluster from a backup (normally because all servers went lost or damaged):

- 1) Restore an Imagicle suite backup on a node.
- 2) Rebuild the whole cluster starting from such node.

Depending on the available backup (including or not historical data) you'll be able or not to restore the historical data.

Detailed steps:

- a) Choose a server X to be the new cluster's first node.
- b) On node X:
 1. Install the latest available Suite version (it can be higher than the previous one).
 2. Restore the available suite backup B1. If B1 includes historical data, you'll be able to restore such data on the new cluster.
- c) On every other node Y:
 1. Install the exactly the same suite version of node X.
 2. If you have an Imagicle suite backup of each node, restore on each server the proper backup to restore the node-specific configurations. Otherwise, apply to node Y the node-specific configurations that are not replicated across the cluster (IP Telephony parameters, SMTP settings, Monitoring settings).
 3. Join the node Y to the cluster using the usual procedure and using the node X as "master" node.

Monitoring a Cluster

Alarms

The operation of the replication service can be monitored by the administrator of the cluster through the status of the following alarms visible in the specific section:

- **Synchronisation Readiness:** represents whether local node is ready to synchronise its data. A node could be not ready to synchronise if, during its addition to the cluster or during the last update, it couldn't complete the [re]initialisation ([re]provisioning) procedure. In this case the only way to restore its operation is to run the IAS setup package again, which will complete the initialisation of the node.
- **Synchronisation Activity:** represents the status of synchronisation operations in the local node. If a node is not ready to synchronise, this alarm isn't evaluated as it would be meaningless. Otherwise, it shows if the node is synchronising with the expected remote node (green), with a different node (yellow), or with no other node at all (red).
- **Time Alignment:** shows whether local node and its expected remote node have the same time configuration, and their system time is the same. All the nodes times must be aligned in order to allow the cluster to work correctly. If local and remote times are aligned the alarm will be green, otherwise it will be red.

Event notifications

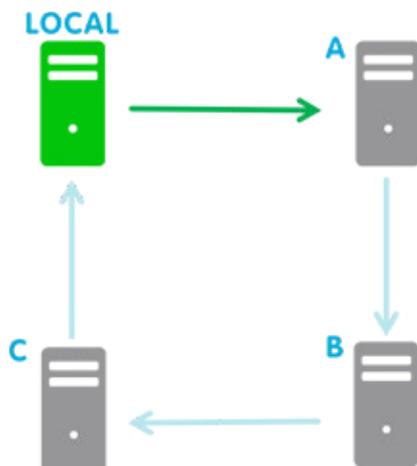
While the Replication Service is running, some events are notified to the cluster administrator to let him identify any potential issue.

Readiness events

When a node is not ready to synchronise its data, it reports the problem with a **sync not ready notification** that contains the problem that prevents its readiness.

When that problem is solved, the node notifies that it's back to normal with a **sync ready notification**.

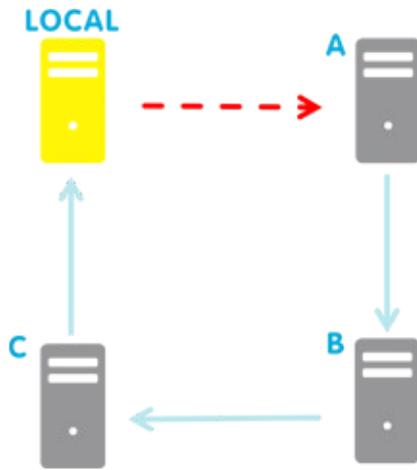
Synchronisation events



In normal conditions any cluster node will synchronise with its successor in the cluster topology.

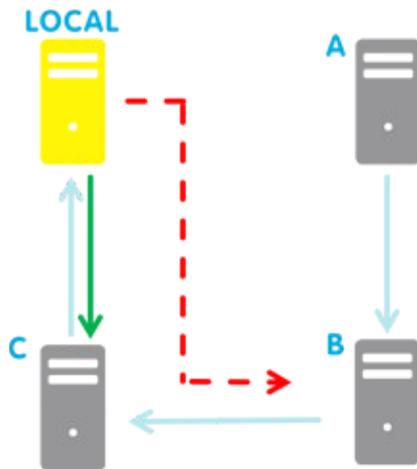
No notification is reported until any event changes this situation.

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If local node fails the synchronisation with its successor, a *failure notification* is sent.

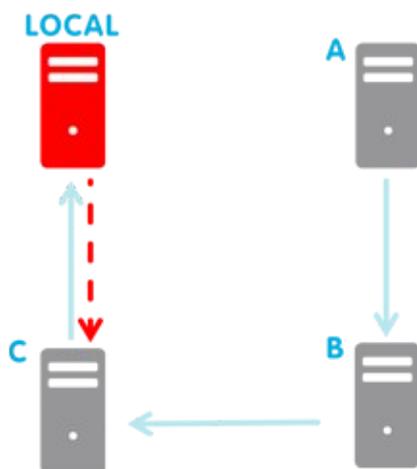
Then the node tries to synchronize with the other nodes of the cluster and, if successful, it sends a *failover notification*.



In this situation the remote node used for the synchronisation will not change unless a new failure occurs.

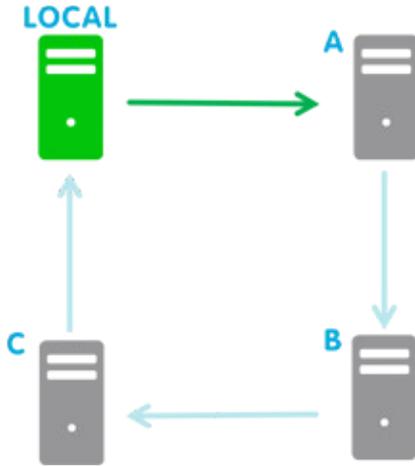
A new *failure notification* is sent for each synchronisation failure with a remote node, and it will report the failure reason.

A new *failover notification* is sent for each successful remote node change.



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If local node fails to synchronise with every other node in the cluster, it sends a *no available node* notification.



After any failure, local node tries periodically to synchronise with its successor and, whenever it succeeds, it sends a *failback notification* to signal that its normal behaviour has been restored.

Time alignment events



When time difference between a node and its successor is too high (i.e. over *15 seconds*), data replication is inhibited to prevent unexpected behaviours, and a *time not aligned* notification is sent.



A *time aligned notification* will then signal when time difference is back to normal.

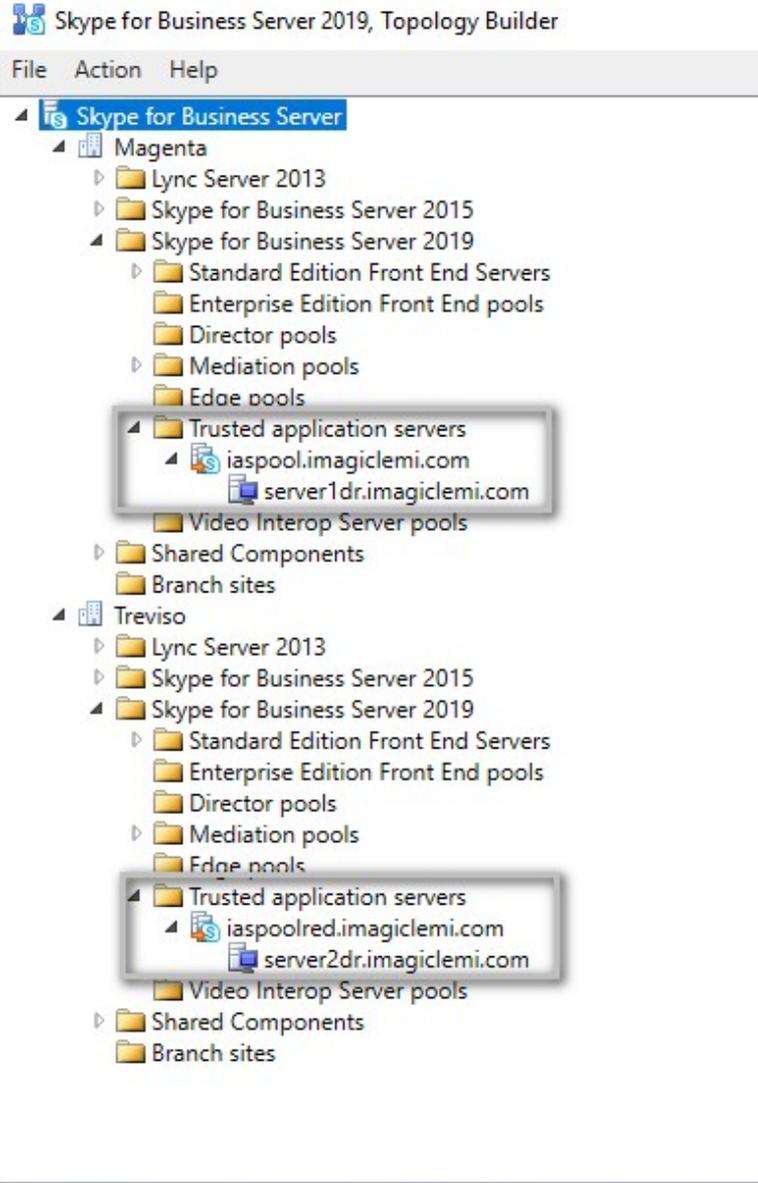
Disaster Recovery HA Configuration for UCMA-based Queue Manager Enterprise

Skype for Business Standard Front-End pools in Disaster Recovery

Imagicle High Availability applies also when S4B environment implements a redundant DR architecture, including two front-end pools installed in different data centers. See following paragraph to apply a configuration which allows to properly route QME calls to active Imagicle server, from active S4B FE pool.

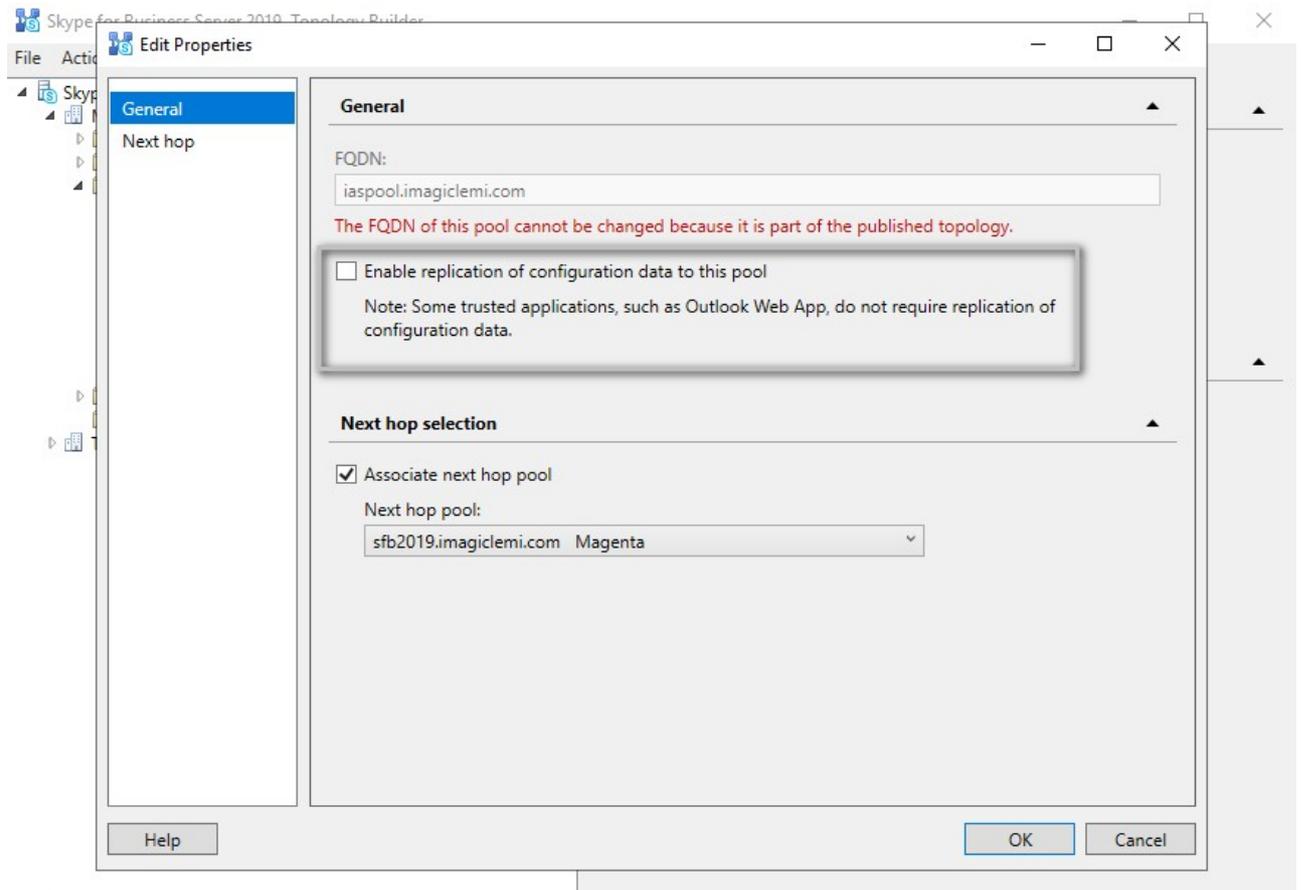
Skype for Business DR pools

See below S4B topology sample, involving two FE pools in different branches: Magenta and



Disabling replication on both TrustedApplicationPool

While configurations are different between two application servers, you first need to disable data replication by unflagging below option:



Trusted Application Pools definition

Please define two Trusted Application Pools, pointing respectively to each Imagicle HA node, by following the standard procedure explained [here](#).

Once done, you can enter PowerShell command: ***Get-CsTrustedApplicationPool*** to check correct T.A.P. creation:

```

PS C:\Users\Administrator.IMAGICLEMI> Get-CsTrustedApplicationPool

Identity           : TrustedApplicationPool:iaspool.imagiclemi.com
Registrar          : Registrar:sfb2019.imagiclemi.com
FileStore          :
ThrottleAsServer   : True
TreatAsAuthenticated : True
OutboundOnly       : False
RequiresReplication : False
AudioPortStart     :
AudioPortCount     : 0
AppSharingPortStart :
AppSharingPortCount : 0
VideoPortStart     :
VideoPortCount     : 0
Applications       : {urn:application:imagicleqme}
DependentServiceList : {}
ServiceId          : 2-ExternalServer-2
SiteId             : Site:Magenta
PoolFqdn           : iaspool.imagiclemi.com
Version            : 8
Role               : TrustedApplicationPool

Identity           : TrustedApplicationPool:iaspoolred.imagiclemi.com
Registrar          : Registrar:sfb2019red.imagiclemi.com
FileStore          :
ThrottleAsServer   : True
TreatAsAuthenticated : True
OutboundOnly       : False
RequiresReplication : False
AudioPortStart     :
AudioPortCount     : 0
AppSharingPortStart :
AppSharingPortCount : 0
VideoPortStart     :
VideoPortCount     : 0
Applications       : {urn:application:imagicleqme}
DependentServiceList : {}
ServiceId          : 3-ExternalServer-4
SiteId             : Site:Treviso
PoolFqdn           : iaspoolred.imagiclemi.com
Version            : 8
Role               : TrustedApplicationPool
  
```

Trusted Applications definition

Please define two Trusted Applications, pointing respectively to each Imagicle HA node on port 14002, by following the standard procedure explained [here](#).

Once done, you can enter PowerShell command: **Get-CsTrustedApplication** to check correct Trusted Apps creation:

```
PS C:\Users\Administrator.IMAGICLEMI> Get-CsTrustedApplication

Identity           : iaspool.imagiclemi.com/urn:application:imagicleqme
ComputerGruus      : {server1dr.imagiclemi.com sip:server1dr.imagiclemi.com@imagiclemi.com;gruu;opaque=svr:ima
                    gicleqme:kZ-uUB4zyVKcfdHRsJ8DkwAA}
ServiceGruu        : sip:iaspool.imagiclemi.com@imagiclemi.com;gruu;opaque=svr:imagicleqme:Vv2dFXSpx1G28sj80ic
                    JVAAA
Protocol           : Mtls
ApplicationId       : urn:application:imagicleqme
TrustedApplicationPoolFqdn : iaspool.imagiclemi.com
Port               : 14002
LegacyApplicationName : imagicleqme

Identity           : iaspoolred.imagiclemi.com/urn:application:imagicleqme
ComputerGruus      : {server2dr.imagiclemi.com sip:server2dr.imagiclemi.com@imagiclemi.com;gruu;opaque=svr:ima
                    gicleqme:k4Mi8Y2Yal-JbjWvCj36DwAA}
ServiceGruu        : sip:iaspoolred.imagiclemi.com@imagiclemi.com;gruu;opaque=svr:imagicleqme:kt6Bh2jme10G1N2m
                    xh5ijQAA
Protocol           : Mtls
ApplicationId       : urn:application:imagicleqme
TrustedApplicationPoolFqdn : iaspoolred.imagiclemi.com
Port               : 14002
LegacyApplicationName : imagicleqme
```

Trusted Application Endpoint definition

Please define a single Trusted Application Endpoint, pointing to primary Imagicle HA node **sfb2019.imagiclemi.com**, by following the standard procedure explained [here](#). Don't forget to enter the command **Enable-CsTopology** to enable applied configurations.

Once done, you can enter PowerShell command: **Get-CsTrustedApplicationEndpoint** to check correct T.A.E. creation:

```
PS C:\Users\Administrator.IMAGICLEMI> Get-CsTrustedApplicationEndpoint

Identity           : CN={8dd5e090-509c-4521-8096-f2854be66d08},CN=Application Contacts,CN=RTC Service,CN=Services,CN=Configuration,DC=imagiclemi,DC=com
RegistrarPool      : sfb2019.imagiclemi.com
HomeServer         : CN=Lc Services,CN=Microsoft,CN=2:1,CN=Pools,CN=RTC Service,CN=Services,CN=Configuration,DC=imagiclemi,DC=com
OwnerUrn           : urn:application:ImagicleQME
SipAddress          : sip:qme@imagiclemi.com
DisplayName         : Imagicle ACD
DisplayNumber      :
LineURI            : tel:72000
PrimaryLanguage    : 0
SecondaryLanguages : {}
EnterpriseVoiceEnabled : True
ExUmEnabled        : False
Enabled            : True
```

Imagicle ApplicationSuite configurations

Please access to primary Imagicle ApplicationSuite web portal, using administrator credentials, and select the following web menu: Queue Manager > Skype for Business Settings. Enter the following data:

- Skype for Business Server: FQDN of S4B DC1 Front-End
- Application Contact URI: Application SIP URI, as defined in above T.A.E.
- Application GRUU: Service GRUU, displayed with **Get-CsTrustedApplication** command
- Certificate name: OCSCconnector
- Application host: FQDN of primary Imagicle server
- Application port: 14002



Microsoft Skype for Business settings

Trusted Application EndPoint Configuration [View online documentation](#)

Skype for Business server	sfb2019.imagiclemi.com
Application Contact Uri	sip:qme@imagiclemi.com
Application GRUU	sip:iaspool.imagiclemi.com@imagiclemi.com;
MSPL routing script	<input type="button" value="Download"/>

Advanced Trusted Application EndPoint Configuration

Certificate Name	OCSCconnector
Application Host	server1dr.imagiclemi.com
Application Port	14002

Repeat same configuration on secondary Imagicle ApplicationSuite web portal, as shown below:



Microsoft Skype for Business settings

Trusted Application EndPoint Configuration [View online documentation](#)

Skype for Business server:

Application Contact Uri:

Application GRUU:

MSPL routing script:

Advanced Trusted Application EndPoint Configuration

Certificate Name:

Application Host:

Application Port:

PowerShell command to swap service to the other S4B pool

In case of DC operations switchover (Disaster Recovery), you must manually enter the following command, from either primary or secondary S4B Front End, to allow Trusted Application Endpoint move from primary Trusted Application Pool to secondary one:

Move-CsApplicationEndpoint -Identity [TrustedApplicationEndPointSipAddress]

As per our sample environment, the command becomes:

Move-CsApplicationEndpoint -Identity sip:qme@imagiclemi.com

Installing Imagicle SimpleFailover

Applies to:

Imagicle UC Suite any release on Windows Server 2012 and above.

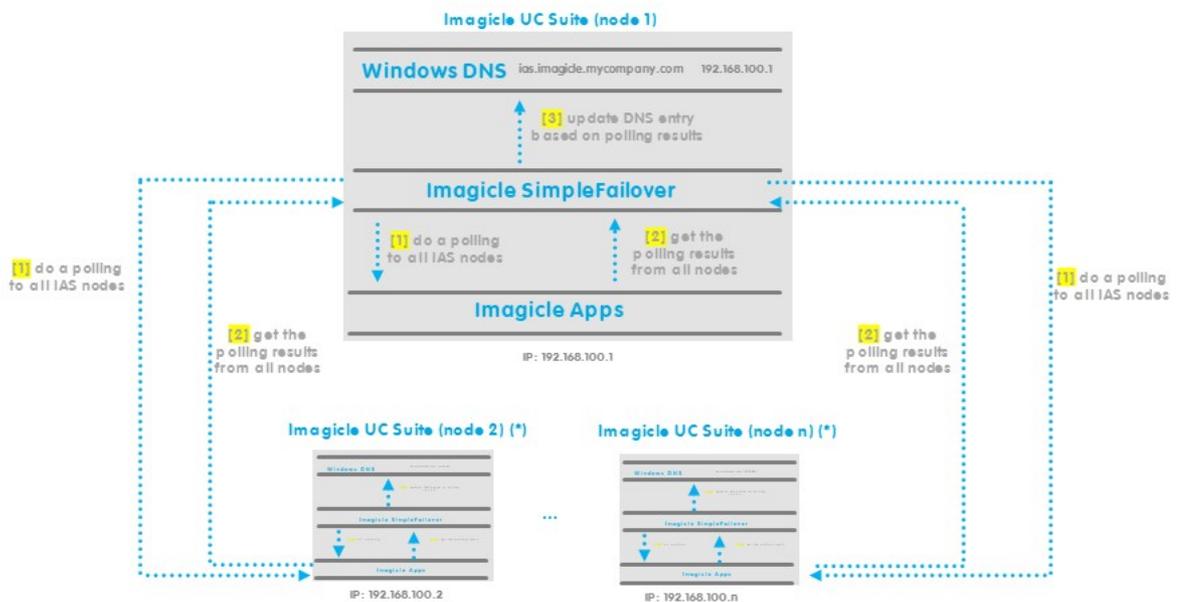
Description:

This article explains what is the Imagicle SimpleFailover application and the necessary steps to install it on every node belonging to an Imagicle cluster.

What is the Imagicle SimpleFailover

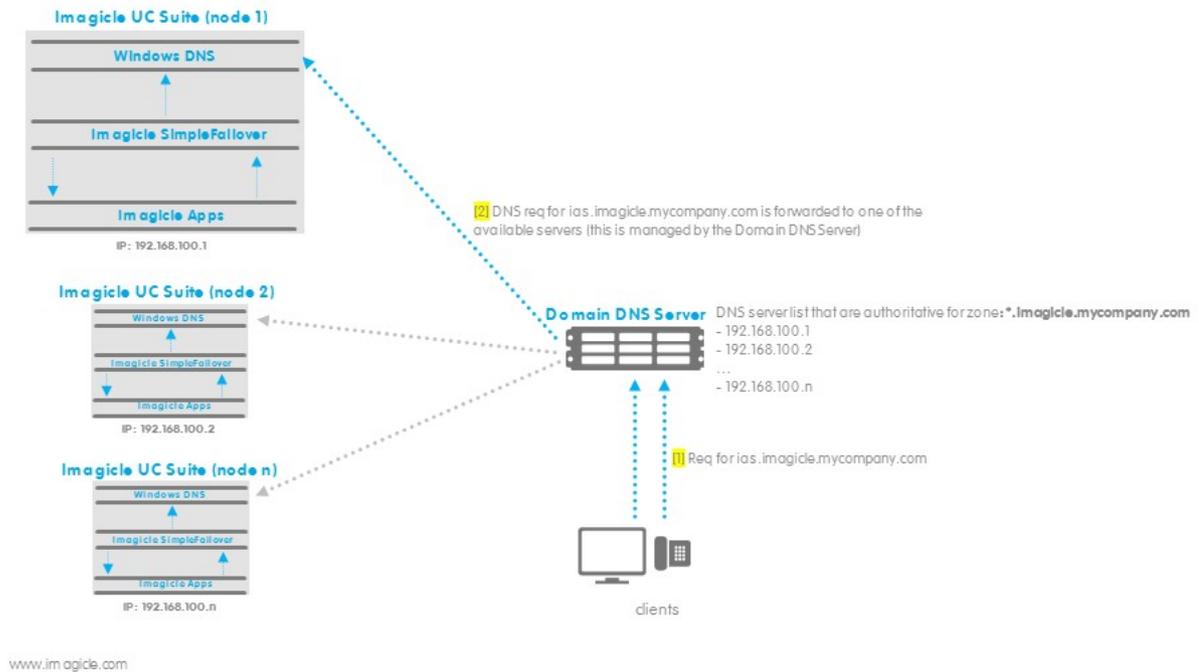
Imagicle SimpleFailover is an application that does one or more polling requests (e.g. HTTP Get to a specific page) in order to verify if one or more services are up or not on different Imagicle UC nodes (typically all nodes belonging to a cluster). Based on the results of these polls, it updates the IP of one or more DNS entries in the Windows DNS service. It leverages Windows DNS to manage DNS requests from remote clients, so it is not itself a DNS server.

In the image below, is it possible to see requests flow within a single Imagicle node:



(*) Imagicle SimpleFailover must be installed on all Imagicle nodes and all instances do the same operations. For sake of clarity, this schema shows the interactions from a single Imagicle node's point of view
www.imagicle.com

Instead, this is the general schema:



Known Limitations

Web browsers implement an internal DNS cache that may be up to 30 minutes. Such cache makes the client insensitive to the failover mechanism above described, so a connection attempt might be sent to the unavailable server. The client can connect to the available server only when its internal DNS cache has expired.

To override this problem on web browser or Jabber/Webex/MS-Teams gadgets, please restart the client to clean DNS cache.

How to install it

To install the Imagicle SimpleFailover, there some tasks we need to complete:

- configuration of the Domain DNS Server: we need this to forward DNS requests for a specific sub-domain (e.g., *.imgicle.mycompany.com) to one of the nodes in the Imagicle cluster
- on every Imagicle node:
 - ◆ (two steps below are done automatically through the installation script)
 - ◆ installation and configuration of the Windows DNS Server role
 - ◆ installation and startup of the Imagicle SimpleFailover

Before to proceed with the installation/configuration, be sure these these configurations have been already done:

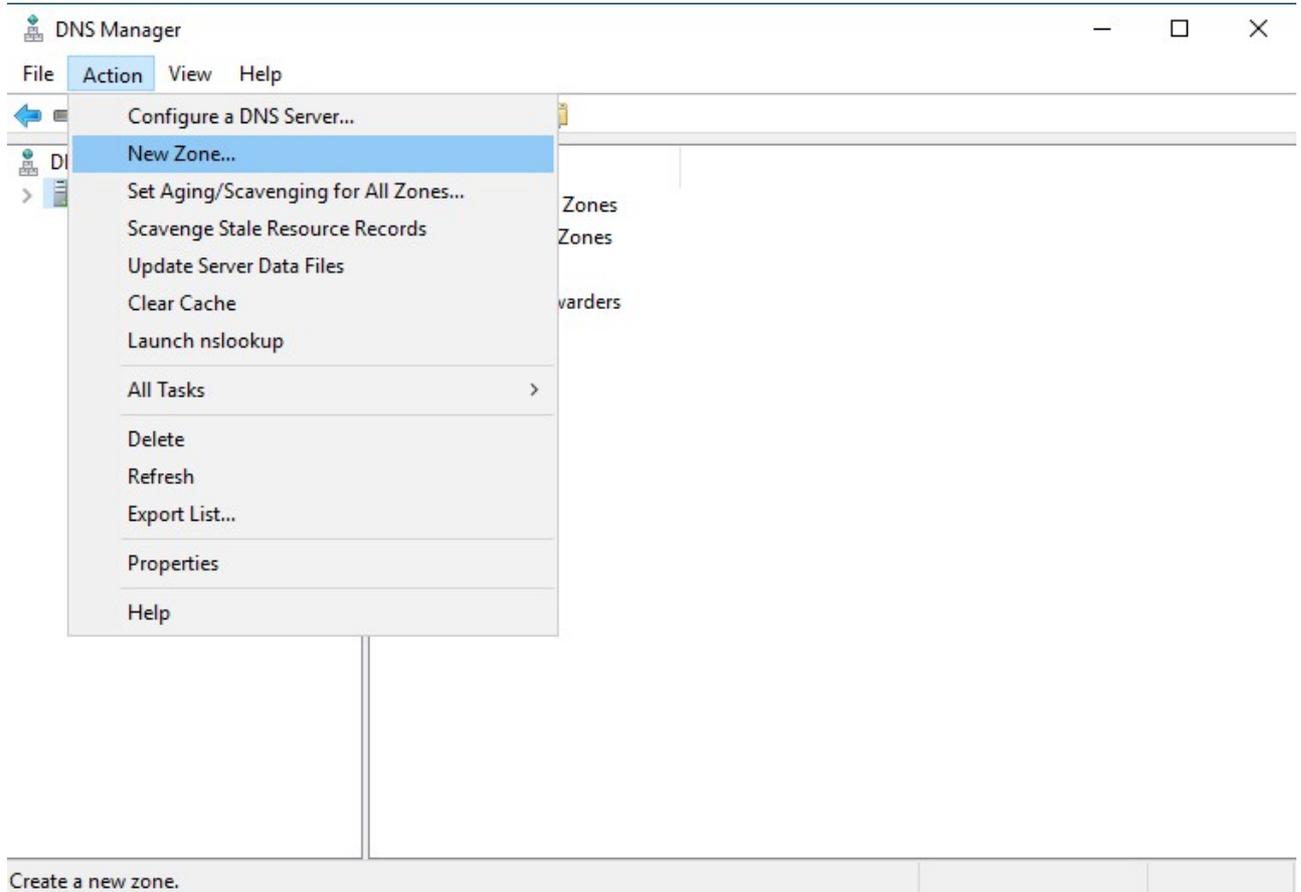
- installation of all IAS nodes
- configuration of all IAS nodes
- configuration of the Imagicle cluster

Domain DNS Server configuration

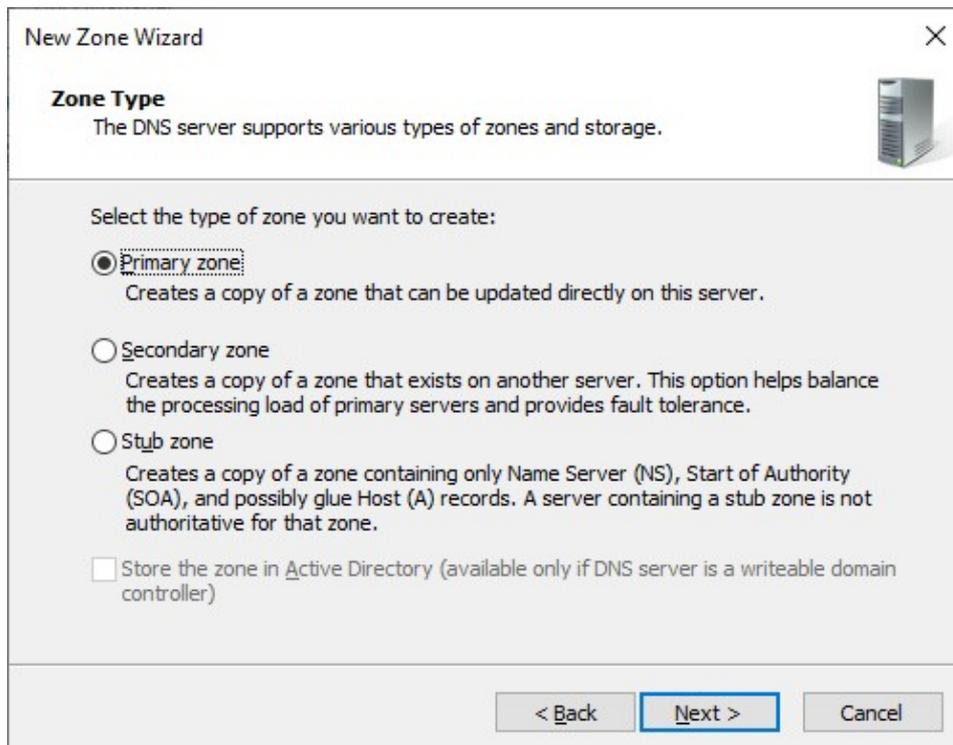
We have to configure the Domain DNS Server in order to forward relevant DNS requests (like ias.imgicle.mycompany.com) to the local DNS Servers available on Imagicle nodes.

On the Domain DNS Server, open the DNS application and create a new Zone dedicated for Imagicle (e.g. imgicle.mycompany.com)

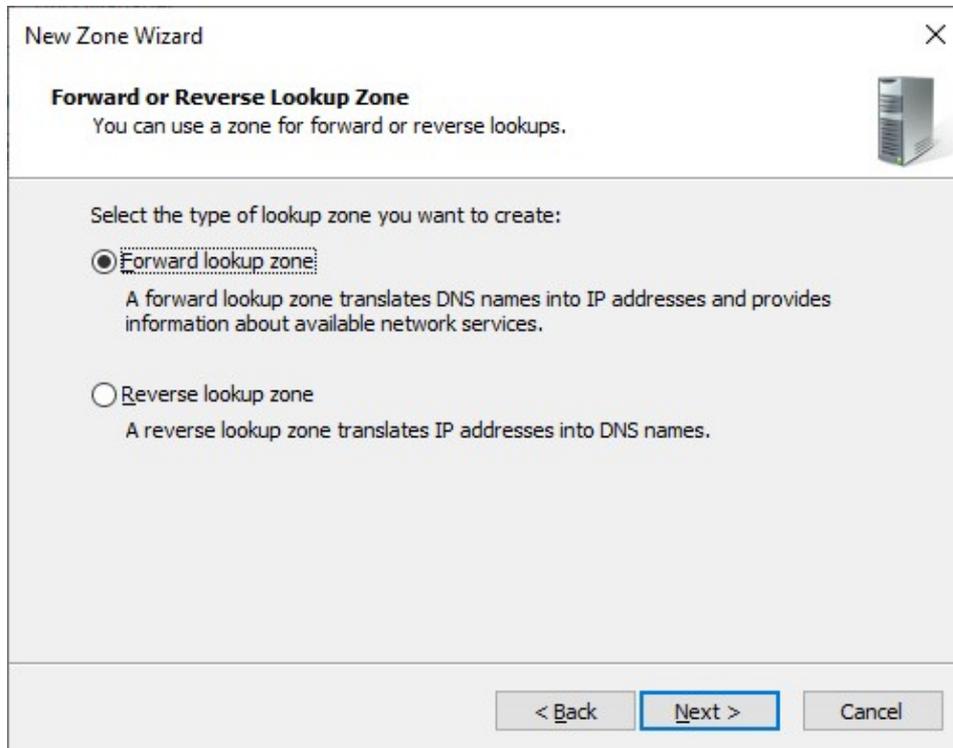
Open the DNS Manager and click on Action --> New Zone



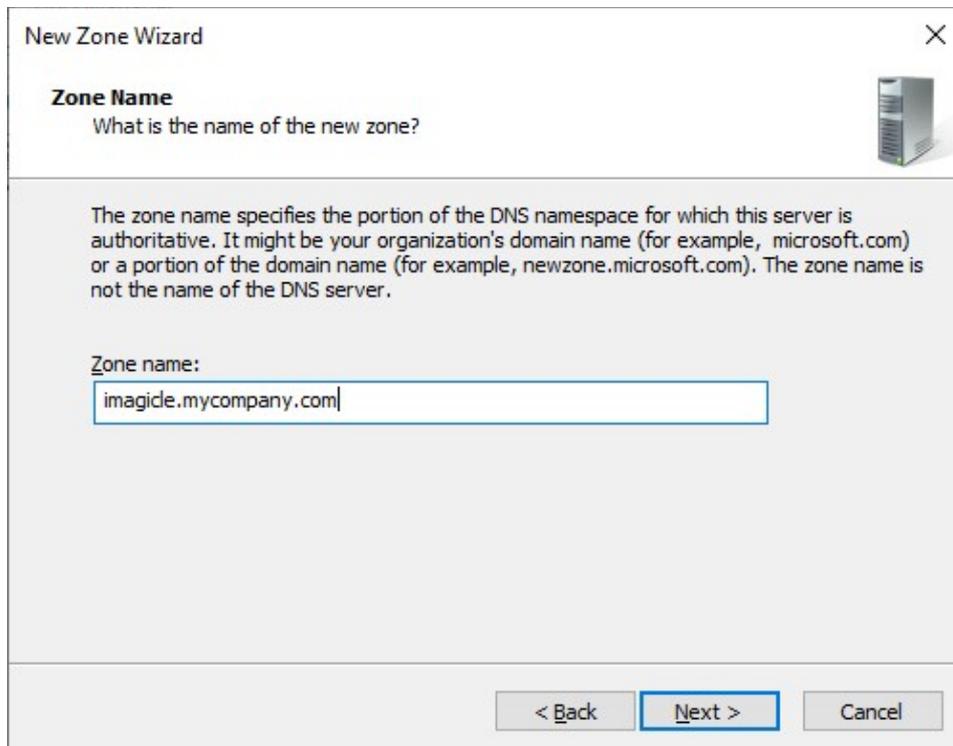
then select "Primary zone"



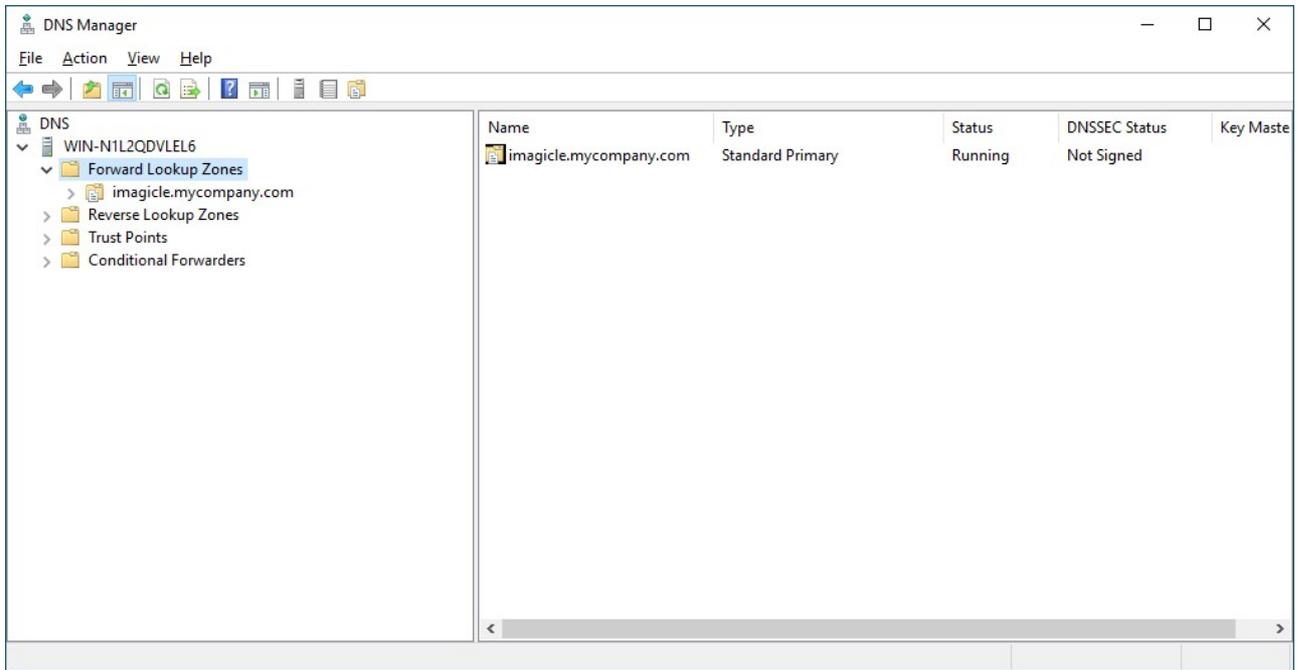
and "Forward lookup zone"



now enter the relevant Zone Name (e.g. imgicle.mycompany.com)



then confirm the default settings and complete the zone's creation. At the end you should have the new zone listed under the Forward Lookup Zones:



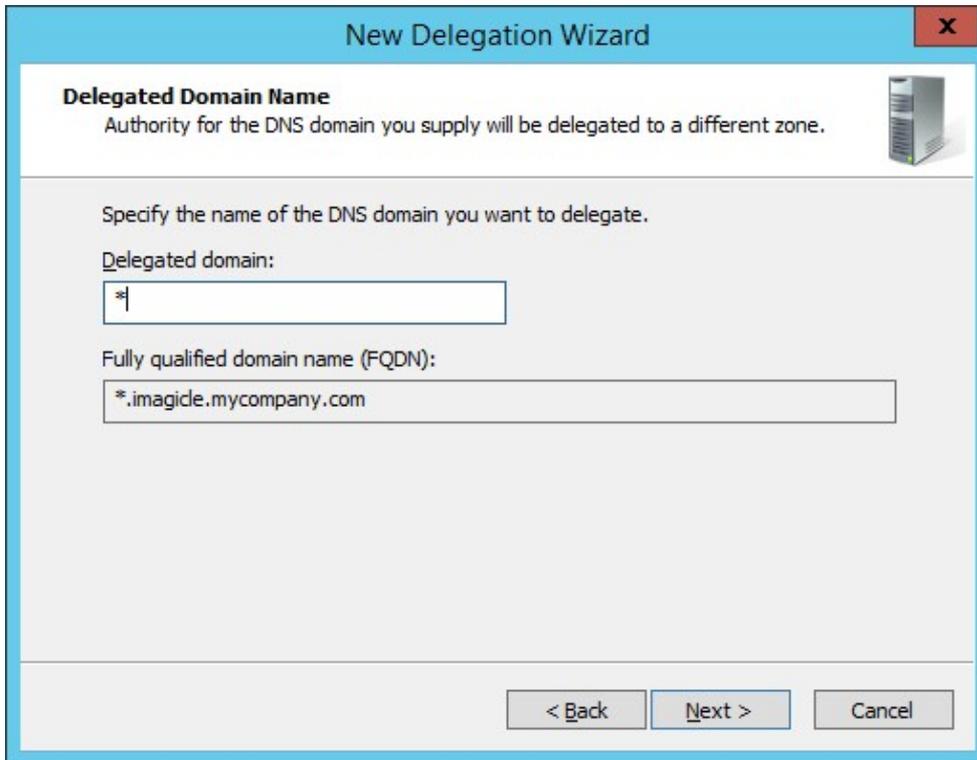
Now right-click on the created Zone and select "New Delegation"

imagicle

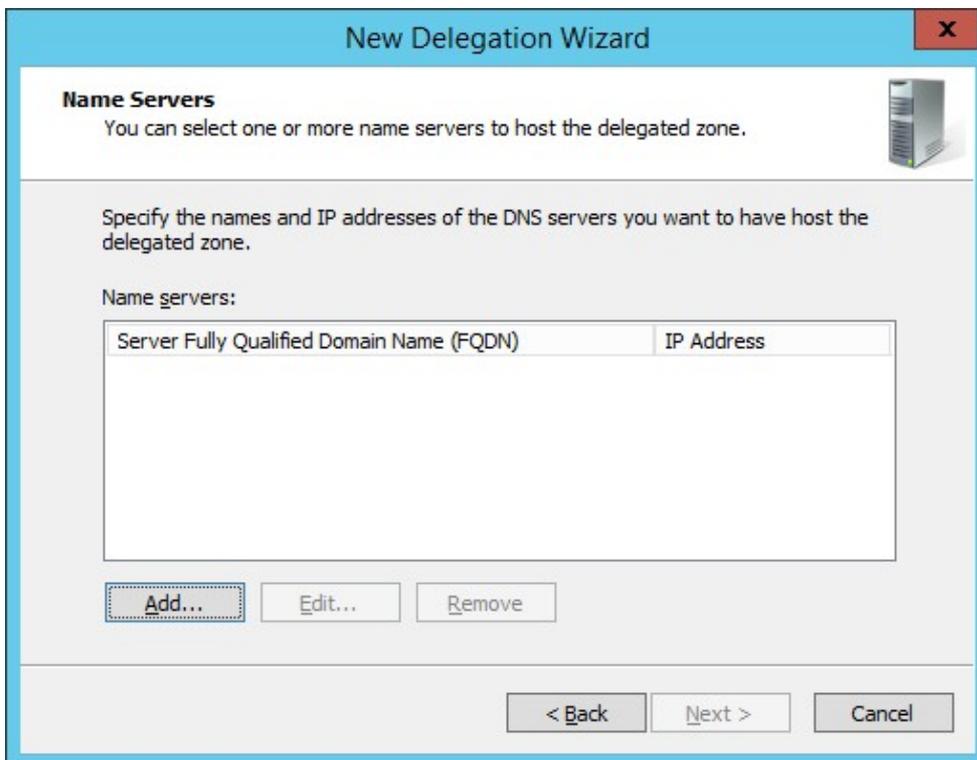
The screenshot shows the Windows DNS console. On the left, a tree view displays the hierarchy: DNS > DC > *.imagicle.com > Forward Lookup Zones > imagicle.mycompany.com. The 'imagicle.mycompany.com' folder is selected, and a context menu is open over it. The menu items are: Update Server Data File, Reload, New Host (A or AAAA)..., New Alias (CNAME)..., New Mail Exchanger (MX)..., New Domain..., **New Delegation...** (highlighted), Other New Records..., DNSSEC, All Tasks, View, Delete, Refresh, Export List..., Properties, and Help. On the right, a table shows the current records for the selected zone:

Name	Type
(same as parent folder)	Start of Aut
(same as parent folder)	Name Servi

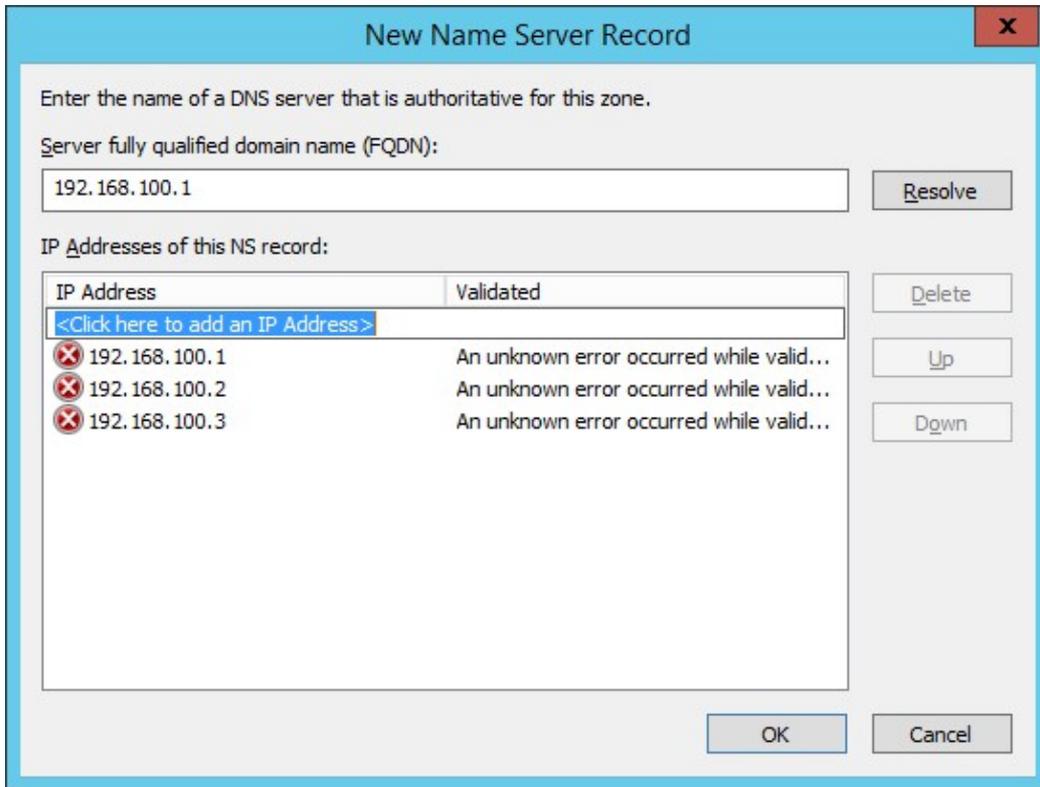
as a Delegated Domain Name add *, because we want to delegate the resolution of the whole *.imagicle.mycompany.com sub-domain



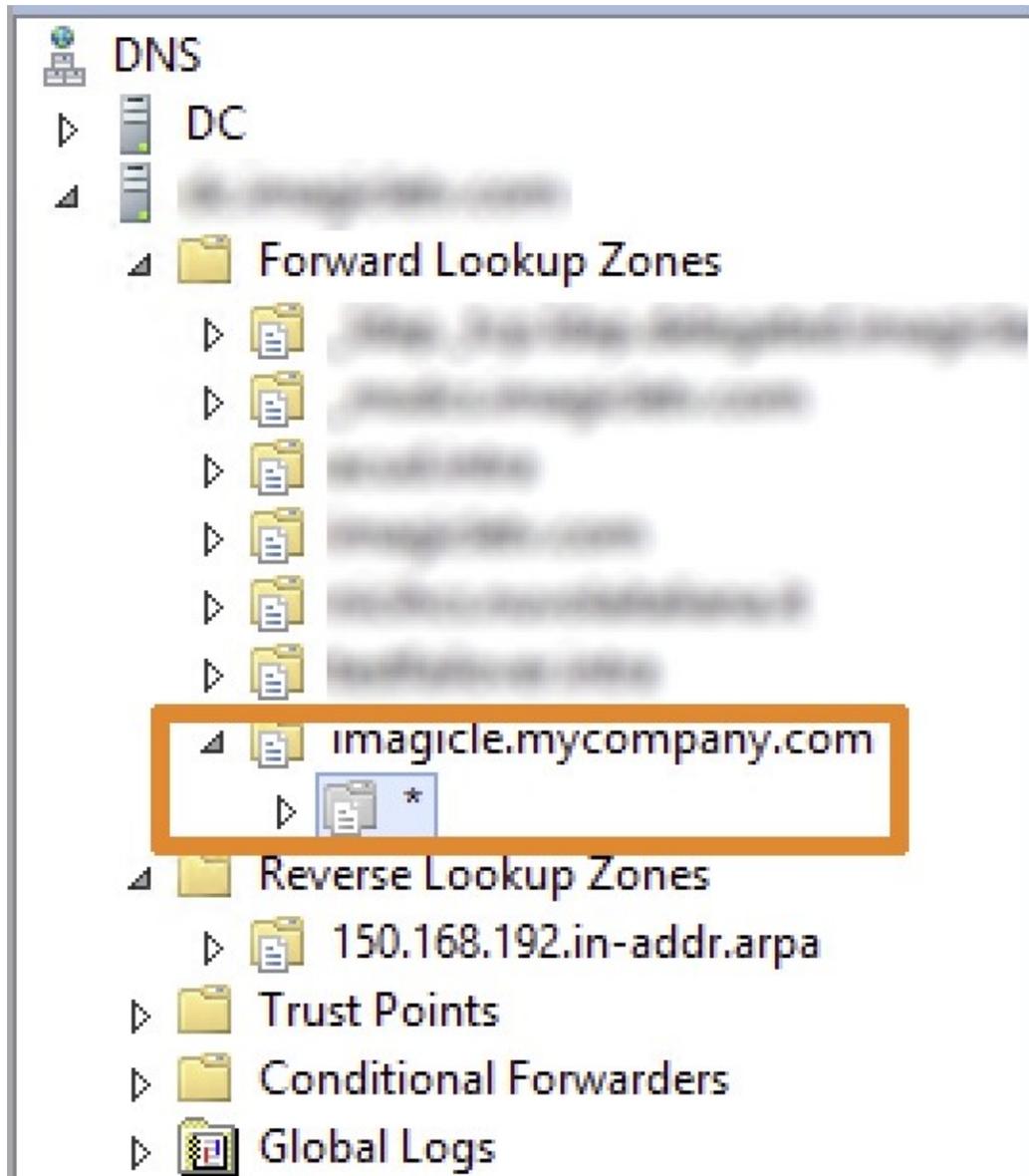
on the next screen, we have to add IPs of the servers delegated to resolve *.imagicle.mycompany.com sub-domain. So, click on Add



add all the UC Suite nodes' IPs and then click OK and confirm the configuration



Finally, confirm all the settings and complete the configuration. At the end you should have something like this:



Now, the Domain DNS Server is configured.

Imagicle SimpleFailover installation

The procedure below must be done all Imagicle nodes belonging to the cluster.

In order to install the tool we have to:

- install Nodejs
- unzip application folders
- execute a couple of Powershell scripts

All needed tools are available [here](#). Before to start, copy the Imagicle SimpleFailover zip file to the Imagicle node.

Let's start with the Nodejs installation, so extract from the zip archive the file node-<version>.msi and execute it. Installation is pretty straightforward, just next, next, next.

Now, create the "custom" folder within the UC Suite installation folder. Default is C:\Program Files (x86)\StonevoiceAS):

imagicle

```
<UCS_FOLDER>\custom
```

and unzip the archive into it. At the end, you should have this situation:

```
<UCS_FOLDER>\custom\ImagicleSimpleFailover  
<UCS_FOLDER>\custom\pm2-installer-main
```

Now open Powershell as an administrator and execute this command:

```
cd "<UCS_FOLDER>\custom\pm2-installer-main\service_scripts\"
```

Now we have to run the installation script, passing these 3 mandatory arguments:

- **zoneName**: Zone Name to be configured on the local DNS Server (e.g. imagicle.mycompany.com)
- **hostname**: name of the host on the local DNS Server to modify (e.g. ias)
- **domainDNSServer**: Domain DNS Server's IP

this is the installation script:

```
.\install.ps1 -zoneName imagicle.mycompany.com -hostname ias -domainDNSServer 192.168.1.2
```

if one of them is missing, the installation process will ask you to do the "Standard installation", in that case you have to abort it, entering "n" or pressing "ctrl+c". **Don't proceed the "Standard installation"**, because it supposes to do some configurations manually.

If everything is ok, you will be prompted to confirm the "Smart installation", just press Enter (default is yes)

```
Params zoneName, hostname and domainDNSServer are available. Do you want to proceed with  
Smart Installation? [y/n][default:y]: y
```

The installation process will start, executing all the required operations. For your information, the installation doesn't need internet connection.

When the process terminates, execute this script to start the Imagicle SimpleFailover:

```
.\startApp.ps1
```

You should see an output like below sample:

Contact Manager Service

URL: <http://ucs.imagicle.mycompany.com/fw/Apps/Speedy/xml/directories/default.aspx>

Finally, please ensure that Cisco IP Phones are configured to leverage customer's DNS server.

Configuration

Dashboard

Imagicle SimpleFailover has a built-in web dashboard, that can be used to see the status of the all the nodes, based on the results of the configured pollings. The dashboard is accessible only form localhost, pointing to <http://localhost:81>.



Zone Name: **imagicle.local**

Current DNS:

ias1.imagicle.local → 192.168.4.242
ias2.imagicle.local → 10.0.0.0

Node priority	Node ID	Node IP	Polling ID	Polling Method	Hostname	Status
10	node1	192.168.4.242	poll1	http	ias1	OK
10	node1	192.168.4.242	poll2	telnet	ias2	OK
5	node2	192.168.4.241	poll1	http	ias1	OK
5	node2	192.168.4.241	poll2	telnet	ias2	OK

The web page is automatically refreshed every 60s.

Email notifications

Email notifications are enabled by default and they are sent when one of these events happens:

- polling failure: when the polling fails and the previous polling was successful
- polling success: when the polling succeed and the previous polling was failed
- DNS update failure: when there is a failure in DNS updating

The SMTP configuration is taken from the UC Suite. You can see how to configure it [here](#).

The recipient list is taken from the Monitoring service configuration on the UC Suite. More information are available [here](#).

If you change the SMTP parameters or the recipient list, you have to restart the Imagicle SimpleFailover:

- access every Imagicle nodes through a Remote Desktop session
 - open Powershell
 - execute these commands
- ```
cd "<IAS_FOLDER>\custom\pm2-installer-main\service_scripts\
./restartApp.ps1
```

## Configuration tests

1. From any user's PC, please open the web browser and enter the URL including DNS name:  
<https://ucs.imagicle.mycompany.com> The Imagicle UC Suite login page should appear.
2. From any IP Phone, access to Imagicle Phone Services. Verify the service is properly working.
3. Turn off the Imagicle primary server or disconnect it from the network. Wait a couple of minutes.
4. Restart web browser and repeat test #1. The UC Suite login page should still be reachable

5. Repeat test #2 (IP Phone Service access)