Wavestore

Failover for Wavestore version 6

Reference: Failover for Wavestore version 6 – WST-0073-01

Overview

Failover is a feature of Wavestore version 6 and it requires Enterprise licencing on all the servers in the system. To support Failover, the Wavestore servers require one (or more) extra machines which acts as standby server. The Standby servers monitor the logical servers and take over if any one fails. This leads to a brief interruption in recording and the recording while down is on another server. When the original server comes back up, it takes over again, and Wavestore will redirect (or copy) the footage recorded by the standby machine which appears onto the original server so it's all in the same place.

The Standby machine must be identical hardware to the machines which it's taking over from, including network interfaces, but disk arrangement and IP addresses and licence are specific to the Standby server. We do not support failover on machines which are not identical.

Benefits of failover

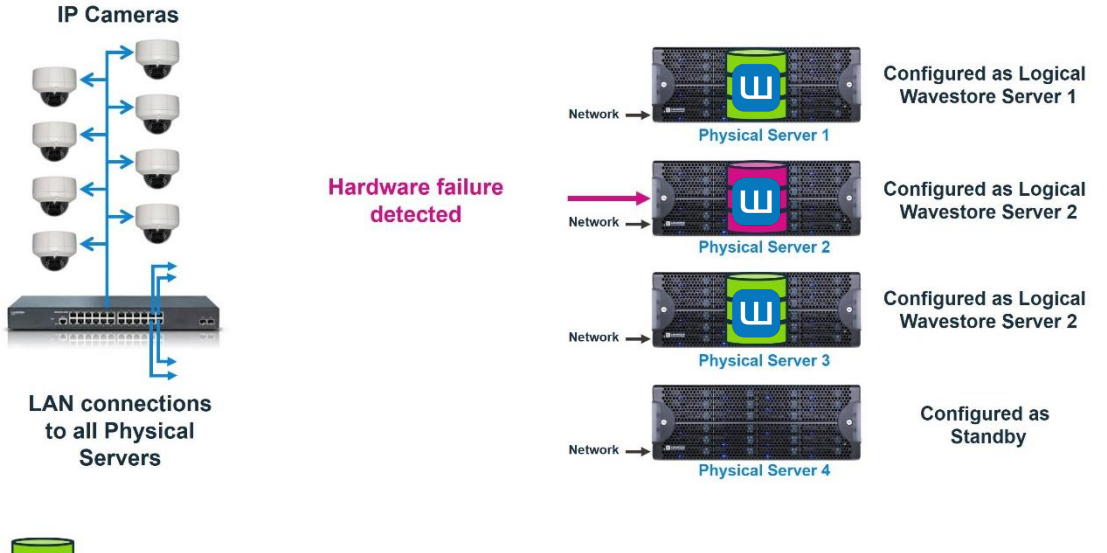
- Recording will continue, even in the event of a hardware failure on one of the physical servers
- There will only be a short interval when recording is not happening
- Typically, only 10 seconds of recording will be missed
- Operators viewing cameras will have near-continuous viewing
- The WaveView client will automatically switch to the correct server
- No user operation is required
- Playback is seamless
- The WaveView client will automatically switch to the correct server when playing back the recording when a failure occurred

Hardware Requirements for Failover

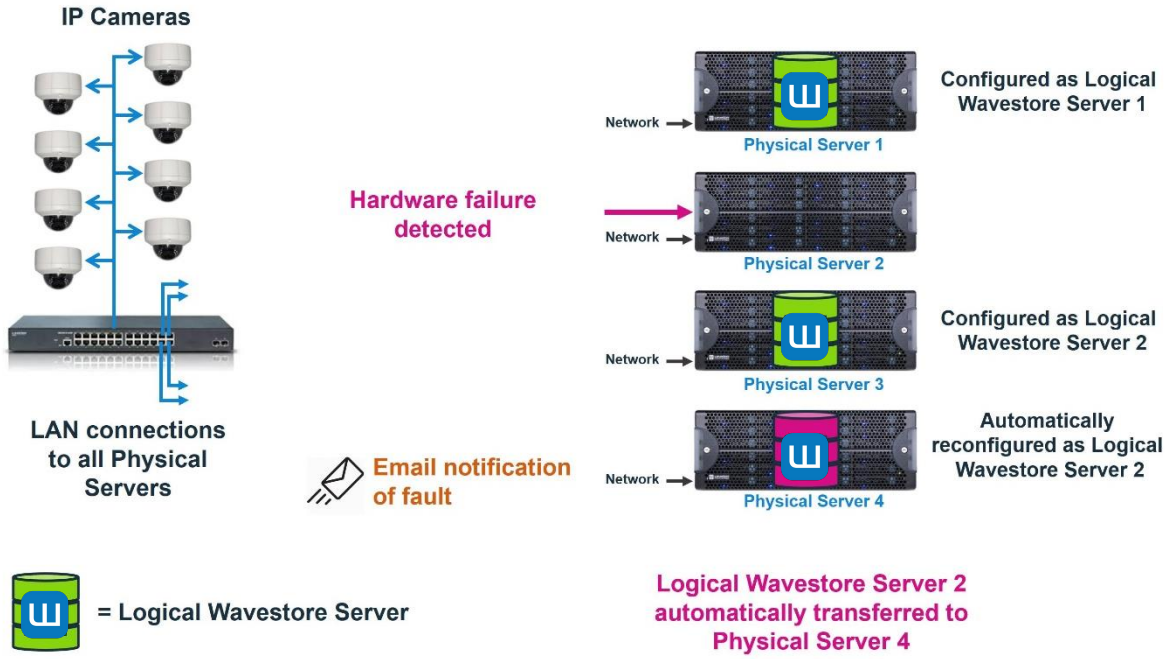
- The Physical Server configured as the Standby must have similar hardware to the Physical Servers being protected
- All Physical Server hardware should be identical in the following respects:
  - Must have the same number of disk letters
  - Must have the same tracks recorded to the same disk letters
  - Must have the same network interfaces
- The Standby server can have smaller disks (or fewer disks in a disk array), but it must have the same number of disk letters (logical volumes)
- It is not possible to failover the analogue cameras in hybrid systems (only the IP cameras will failover to the Standby Server)
- The Wavestore servers may have different numbers of cameras
- The Wavestore servers may have different tracks configured for each camera but when one is configured it should have the same disk letter as any other camera/ track as the other Wavestore servers
- It is essential to configure all of them on the Standby server or they can't be seen later (e.g. a 2+1 server system might have 12 cameras on the first server and 11 on the second, but the Standby server must be configured for all 12 cameras)
- Things which are not used don't need to be identical (e.g. additional disks without disk letters and NICs which are turned off)

How does failover work

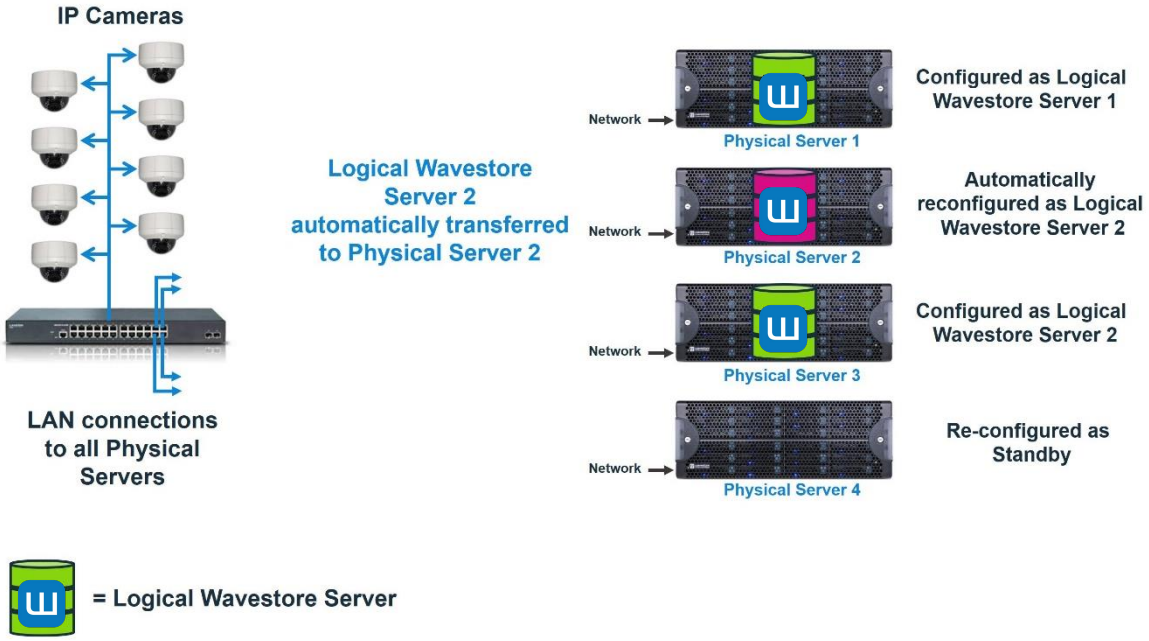
1. The Standby server constantly monitors the logical servers. If a failure is detected then the Standby will take over the functions of that server. Due to the server failure, there will be a brief interruption in recording (usually less than 10 seconds).



1. The logical Wavestore server is automatically transferred to the spare physical server. Recording continues on the Standby as long as the original server is down.
2. An email notification of the fault is sent to the admin.
3. The failed server is sent for repair.



4. The failed server is replaced. When the original server comes back up, it takes over recording again. The system redirects the footage recorded by the standby machine so it instantly appears onto the original server. the spare Failover server is re-configured as a Standby. Playback is seamless for the user.



Licensing Failover

- Failover requires Enterprise licencing on all the servers in the system.
- Each server in the system must be licensed for the number of channels being recorded
- The Failover server must be licensed for the maximum number of channels on the servers being protected

Configuring Failover

Step 1. Connect the servers to the network

Step 2. Use WaveView to configure the physical IP addresses

- Do NOT put these servers into a group at this time

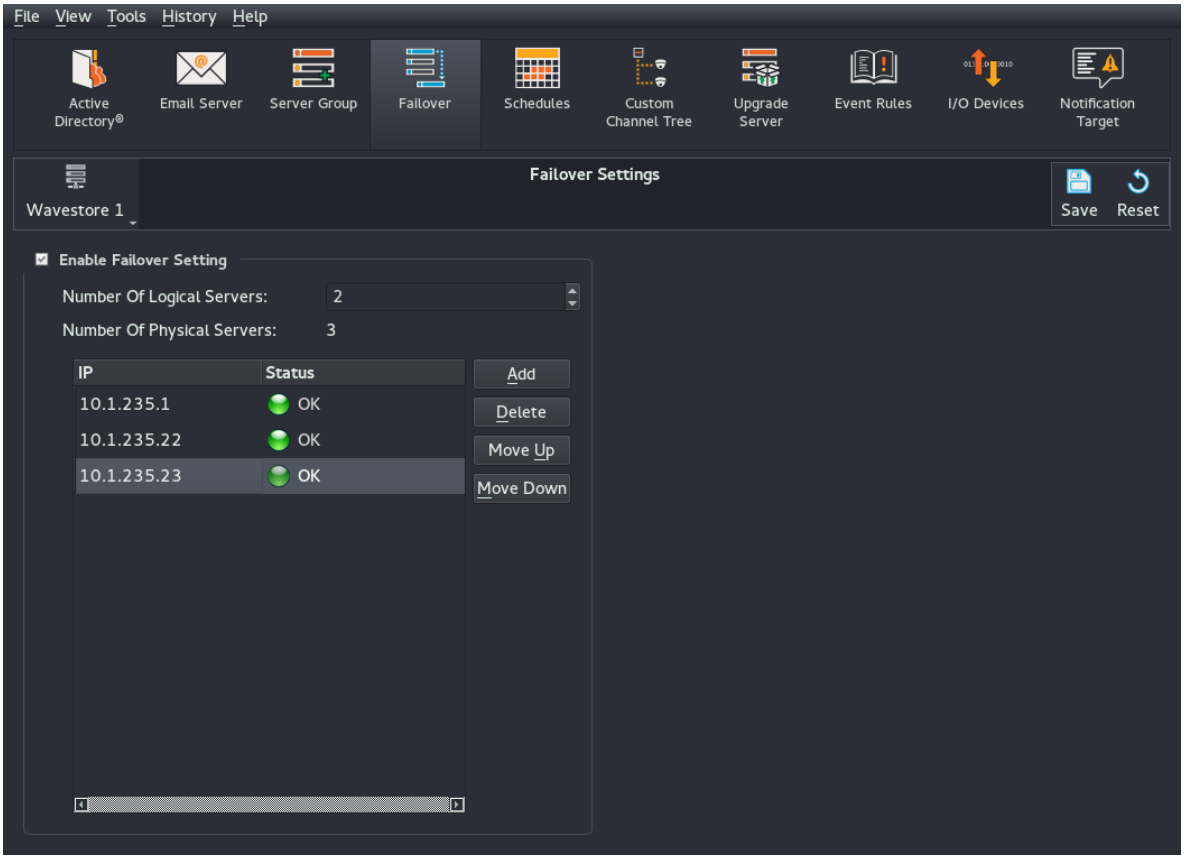
Step 3. Add a user called failoverserver to all DVRs

- This should be user level and can have any password (but make it hard to guess if you do not want other users using it)

Step 4. Log into one Physical server

Step 5. Go to View → Setup → Failover

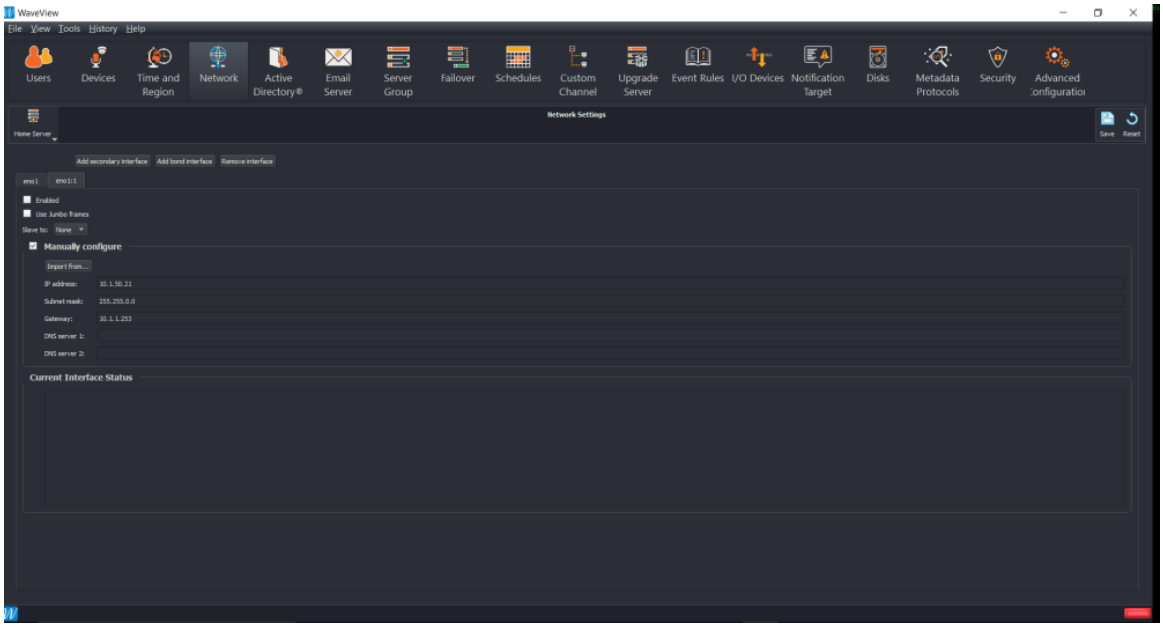
Step 6. Configure the list of Physical servers



Step 7. Add Logical network addresses to the first physical machines, to allow the WaveView client to follow the logical server even when it fails over

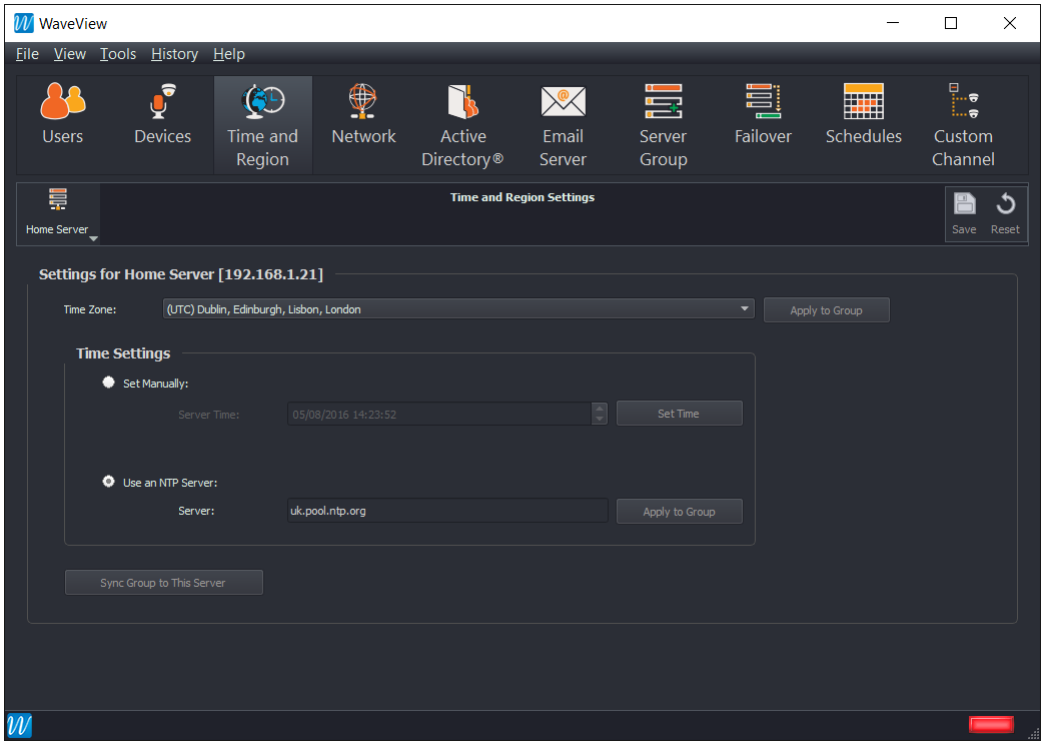
Step 8. Use WaveView Network setup to do this using the Add Secondary button

Step 9. This is an optional step but it makes the system very easy to use



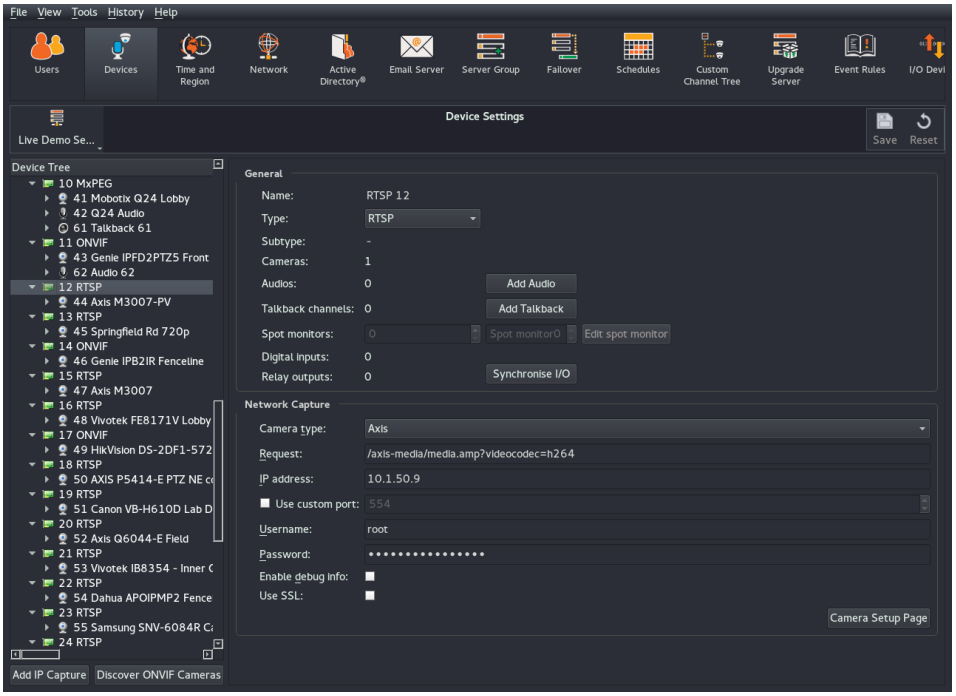
Step 10. Set all servers to sync time to an NTP server

Step 11. If one isn't available, all can sync to logical server 1



Setting up Cameras on their Physical Servers

Step 1. Configure Cameras and recording on their initial Physical Server as normal You can do this using either the Physical Server IP address or the Logical Server IP Address if it has been configured.



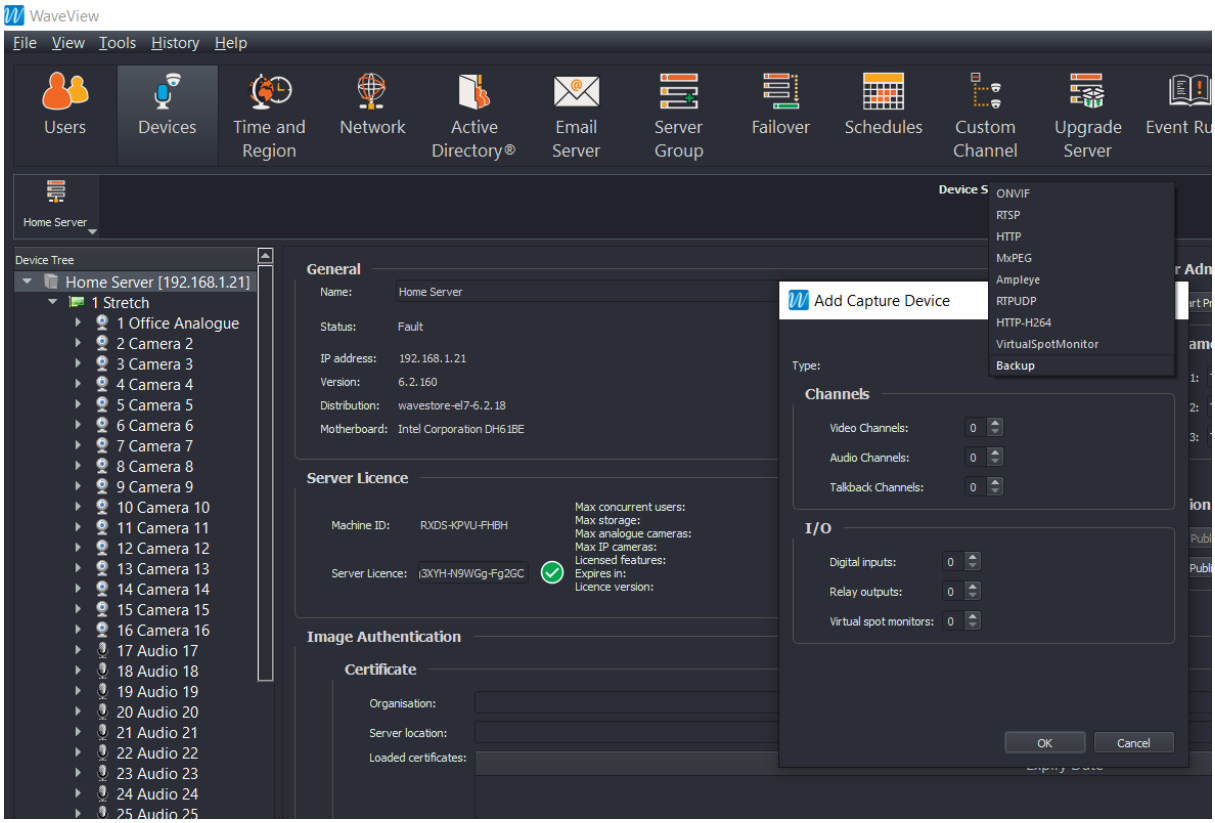
Setting up Cameras on the Standby Server

Step 1. Log into the Standby machine using its Physical address

Step 2. Set up the cameras using a backup capture device to create dummy cameras

Step 3. Configure them as normal.

- You won't be able to configure their names
- Leave them as default Camera 1, 2, etc
- Set up recording for each camera to be the same as on the initial Physical Server (to the same tracks, on the same disks, for the same length)



Step 4. If desired, add all the logical servers to a server group

Step 5. Log into this server group to view all the servers

Step 6. Make sure nothing is set to record on the Standby server (e.g. no EVENT recording)

Final Checks

Step 1. Restart all the servers to ensure they read the failover settings correctly

Step 2. Check in the system log that the Standby server is reporting that it is a PRIMARY STANDBY server

Step 3. Check there are no issues in the system logs of the other servers

Stopping Failover

If you have a server which was part of a failover group but now isn't, especially a standby server, it's sometimes hard to disable failover because when it has failed over to the other server configuration, any edits are edits to the logical configuration, not the Standby server's configuration.

Step 1. There is a command to deal with this case Tools → Execute Command ifailover–delete (This removes the failover configuration from that server. Use this only when you need to repurpose the server and permanently remove it from the failover group.)

Failover on Event

As well as total failure, it is necessary to be able to configure conditions on which failover might happen (e.g. Disk fault). These are available and distinct as Event Rules causes.

It is necessary to be able to trigger a failover action.

Step 1. To do this use Script (script 99, parameter 0, text Failover)

Step 2. Failover action will set a new status of 99 FAILED

- WaveView client will show as greyed out box
- Secondary network interfaces will be dropped
- Capture devices will be stopped

Step 3. Clearing the fault will also clear FAILED status

Step 4. It is necessary to restart the machine to get it working again

- Typically, after removing the original cause of the fault
- The machine will not attempt to win arbitration while it's set to FAILED

Waveview Security

To allow the Waveview client to remain connected to the logical IP when the physical server been failed over. You will need to ensure the 'Check server public key when connecting' option unticked.

This option can be found under Tools > Preferences > Security