Configuring Redundancy in the ShoreTel System

Redundancy in the ShoreTel system can be achieved for many facets of the system, from IP phone failover to trunk redundancy, if you have the correct resources in your infrastructure. ShoreTel’s Distributed Voice Servers, virtual or physical spare switches, and setting up a redundant trunk group with your carrier can provide a resilient setup that will keep you functioning even if portions of your system fail. Each is outlined below. For detailed steps on how to properly configure redundancy, please contact your Inflow sales executive to get in touch with a project manager and engineer.

Setting Up IP Phone Failover
IP Phone failover will require that you have a spare switch set up in the ShoreTel system. You can use any physical switch EXCEPT V switches (50V, 90V) and you can also use a virtual switch. This will provide redundancy for your phones in the event of a switch failure.

The .OVA files for virtual switches are located on the ShoreTel Headquarters server. VMWare is required for these, Hyper-V is not supported:

Installation Paths (identical paths for both types of switch):

Virtual Phone Switch (Primary and Spare)
http://<HQ or DVS IP address>/ftproot/tsv/BareMetalInstall.ova

Virtual SIP Trunk Switch
http://<HQ or DVS IP address>/ftproot/tsv/BareMetalInstall.ova

Virtual Service Appliance
http://<HQ or DVS IP address>/ftproot/tsu/VMWareShoreTelVSA.ova

NOTE: You can also download the file directly via Director under Platform Hardware > Voice Switches > Primary by selecting ‘Add new switch/appliance at site: <Site> of type: <ShoreGear vPhone switch>’ and then clicking ‘Go’.

To set up the switch as a spare, you will want to click on the “spare” section of Application Hardware in Director. From there, you can select a switch to deploy just as you would if the switch were used as a primary.

Each switch will be able to host the same amount of phones that they would if they were a primary and used only for IP
phones. Virtual switches can support anywhere from 250 to 1000 phones based on the resources you provide the switch.

The resource requirements are below:

<table>
<thead>
<tr>
<th>No. of Phones</th>
<th>Up to 250</th>
<th>Up to 500</th>
<th>Up to 1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory</td>
<td>2 GB</td>
<td>2 GB</td>
<td>2 GB</td>
</tr>
<tr>
<td>CPU * Cores</td>
<td>750 MHz * 1</td>
<td>1.5 GHz * 1</td>
<td>2.9 GHz * 1</td>
</tr>
<tr>
<td>Disk</td>
<td>20 GB</td>
<td>20 GB</td>
<td>20 GB</td>
</tr>
<tr>
<td>Hypervisor</td>
<td>VMware vSphere ESX/ESXi 5.5</td>
<td>VMware vSphere ESX/ESXi 5.5</td>
<td>VMware vSphere ESX/ESXi 5.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No. of Trunks</th>
<th>Up to 100</th>
<th>Up to 200</th>
<th>Up to 500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory</td>
<td>2 GB</td>
<td>2 GB</td>
<td>2 GB</td>
</tr>
<tr>
<td>CPU * Cores</td>
<td>2.9GHz * 4</td>
<td>2.9GHz * 8</td>
<td>2.9GHz * 16</td>
</tr>
<tr>
<td>Disk</td>
<td>20 GB</td>
<td>20 GB</td>
<td>20 GB</td>
</tr>
<tr>
<td>Hypervisor</td>
<td>VMware vSphere ESX/ESXi 5.5</td>
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</tr>
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</table>

Make sure you install the spare switch at the main site to make sure it can handle all the child sites.

**NOTE:** A spare switch can only provide failover to one site at a time. If another site goes down you will not be able to use the spare switch for multiple sites, another switch would be required.

Once the switch is installed, you will need to turn on IP Phone failover. This is a check box in IP Phone options.

When you check this box you will get a popup indicating that you must reboot all phones for IP phone failover to take effect. Do this during your next maintenance cycle.
Setting Up Communicator Redundancy

Communicator redundancy is achieved by having a Distributed Voice Server local to the site that needs the redundancy. This is a licensed server that can provide voicemail local to the site as well as communicator functions. Speak to your sales rep for licensing details.

To set up this redundancy, simply deploy a Distributed Voice Server at the site that requires the redundancy, and then point your communicator clients at the Headquarters server.

The Headquarters server will then tell those clients to report to the DVS at the site, based on the phone assignment of the user. Then, if that DVS fails, the Headquarters server will be able to pick up the functionality, giving you a near seamless continuation of services.

NOTE: If you are using Softphone, you must assign the users to the softswitch on the server to get this redundancy, instead of setting them to “any IP Phone”. In addition, softphone calls in progress will drop if the server goes down, as the failover is not able to retain this call. There is no workaround for this limitation.

Setting Up Trunk Redundancy

Trunk redundancy can be done with a PRI or SIP trunk at a geographically remote site in conjunction with a site license and trunks brought in by a carrier of your choosing. We recommend using SIP for this as the failover options are typically better, you can handle more trunks with one circuit and they are typically easier to work with for caller ID and local call limitations. At the remote site, you will need a physical switch for trunks, such as a T1K if using PRI, or if using SIP you can deploy a virtual trunk switch (highly recommended – requires VMWare; refer to the specs above in the IP Phone section for resources). In addition if using a SIP circuit a Session Border Controller may be required if your carrier does not provide one. See your sales rep for details.

Once the new circuit is installed and tested, you must ensure that the user groups that need the redundancy have the new circuit in their outgoing trunk group access.
Now your users will be able to use the trunk group. The ShoreTel system will prefer local trunks for all calls, unless it’s a call that is local to the redundant group and not local to the main site. If the main site trunks fail, then the users will be able to use the redundant trunk to call outbound.

If the same carrier operates both circuits they may be able to set up inbound failover that will route calls to the backup group in the event of an outage. ShoreTel can then use DNIS mapping to route the calls appropriately and ensure that your call flow works unimpeded. For more information on the availability of your inbound failover, speak with your carrier representative.

**Workgroup Redundancy**

Workgroups do not intelligently switch from server to server like Communicator can, but you can make use of the backup extension field to send calls that fail to reach the workgroup to a different destination. In conjunction with Hunt groups, which reside on switches instead of servers, you can provide a redundant solution.

Make a hunt group with the important members of the workgroup (or all of the members if it does not need to simultaneously ring, OR the total member count is under 16). Make a note of this extension, and make sure you have selected a switch local to the users in the switch dropdown. Then, add this extension as the backup destination on the workgroup. Now, if a call comes in and fails to reach the workgroup, it will fail down to the hunt group and your users will still be able to get the call. NOTE: While hunt groups provide group function similar to workgroups, they do not offer queueing or voicemail. Therefore the ability to get calls will still be available in this failover situation but those features will not be present while in a failed over state.

**Setting Up Local Voicemail & Failover**

Voicemail can be stored local to a site using a DVS or a V switch (50V or 90V, the same as their SG50 or SG90 counterparts but also able to host voicemail boxes). This will allow you to host the voicemail locally. To do this simply install a DVS or V switch at the site that requires this, and then change the mailbox server of the users at that site to the new instance. This will move their voicemails to that server for use.

If the voicemail hosting switch goes down, the HQ server will be able to pick up the voicemails and hold them temporarily until the primary device is back online. Once the device is back online, the system will use SMTP to merge the stored temporary voicemails with the mailbox on the primary, making them available to listen to.

NOTE: do NOT move user voicemail boxes from a switch that is currently down. This will result in all voicemails being lost for that user. You must wait until that device is back up to move those boxes unless you are not worried about losing voicemail in the process.

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**Need Help?**

Contact our expert support team by calling **855.9.INFLOW** today!

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**About Inflow**

Founded in 1997, Inflow Communications is a national leader in unified communications and Contact Centers. With over 120,000 endpoints under Inflow’s innovative support plans around the world, their dedication to knowledge, innovation, and unrivaled customer support has landed them in ShoreTel’s top 2% in global customer satisfaction, and as a winner of ShoreTel’s coveted Circle of Excellence Partners award. For two years in a row, Inflow is a ShoreTel Platinum Partner, the highest level of partnership, and is their fastest growing partner globally. In addition, Inflow is one of the few Cloud Contact Center providers that offers implementation, ongoing support, and comprehensive consulting and training programs. Inflow services clients across the globe and has local offices in over 10 major cities in the US.