

# StorMagic™ Witness

## High Availability with 2-node Clusters

### OVERVIEW

Many organizations nowadays are heavily dependent on IT for everyday operations, and as such, the availability and uptime of these systems is critically important. Loss of service equates to loss of productivity which, depending on the severity, can have a huge impact on an organization.

Adding high availability to a business' IT infrastructure is like adding in an insurance policy, protecting the organization from disruptive downtime. When one server node fails or is taken offline, the others remain operational, enabling employees to keep working.

Businesses that require high availability for their applications can design their IT infrastructure in such a way as to create redundancy and eliminate single points of failure. However, in order to properly mitigate against failures and the threat of downtime in even-numbered server clusters, an additional element is required - the "witness."

### THE STORMAGIC WITNESS

StorMagic SvHCI and SvSAN both create highly available server clusters to keep business-critical applications and data online. These clusters need only contain two nodes which is a key differentiator in the HCI and virtualization market. As the 2-node cluster size is even-numbered, to prevent split-brain, SvHCI and SvSAN clusters require the use of the StorMagic witness.

The StorMagic witness prevents split-brain scenarios from occurring in 2-node SvHCI or SvSAN clusters by regularly checking the state of each node in the cluster. The only data passing between the witness and the nodes is the 'heartbeat' - the witness is not in the data path. This allows it to tolerate significant latency and low bandwidth, and can therefore be located great distances from the clusters it provides quorum service for, even if they are in remote, harsh environments.



#### RELIABLE

Get 100% uptime and protect against split-brain with 2 servers per cluster, tolerating low bandwidth and high latency.



#### SIMPLE

The witness VM has extremely low system requirements and can be deployed anywhere: local, offsite, in the cloud, or as-a-service from StorMagic.



#### LOWER COST

One witness provides high availability for up to 1000 clusters, eliminating the need for a third node and additional networking at every location.

# STORMAGIC WITNESS SYSTEM REQUIREMENTS

|                         |                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CPU</b>              | 1 x virtual CPU core (1 GHz)                                                                                                                                                                                                                                                                                                                                                            |
| <b>Memory</b>           | 1GB (reserved)                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Disk</b>             | 1GB VMDK                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Network</b>          | 1 x 1Gb Ethernet NIC<br>When using the witness over a WAN link use the following for optimal operation: <ul style="list-style-type: none"><li>● Latency of less than 3000ms, this would allow the witness to be located anywhere in the world</li><li>● 9Kb/s of available network bandwidth between the VSA and witness</li></ul>                                                      |
| <b>Operating System</b> | The witness can be deployed onto a physical server or virtual machine with the following: <ul style="list-style-type: none"><li>● Windows Server 2019 and 2022 (64-bit)</li><li>● Hyper-V Server 2019 and 2022 (64-bit)</li><li>● Raspbian Buster (32-bit)</li><li>● vCenter Server Appliance (vCSA)<sup>1</sup></li><li>● StorMagic Witness Appliance</li><li>● Ubuntu 20.04</li></ul> |

<sup>1</sup> VMware vSphere 6.7 and higher

## STORMAGIC WITNESS DEPLOYMENT OFFERINGS

### Deploy software - locally or remotely

The StorMagic witness is included with every SvHCI or SvSAN license as a piece of additional software that can be run as a VM, or installed on hardware as lightweight as a Raspberry Pi. It can be sited locally to a cluster, or remotely over a WAN link at another location or in the cloud. For any multi-site deployment, the witness can be located at HQ, or in a datacenter, providing quorum to the clusters at each location - up to 1000 clusters per witness.

### Deploy in the cloud - Witness-as-a-Service

Alternatively, the witness is available as a cloud subscription service, purchased on top of an SvHCI or SvSAN license. This product is known as witness-as-a-service (WaaS) and is part of a suite of features that make up StorMagic Cloud Services. Instead of installing the witness on hardware, an organization can simply connect their clusters to the WaaS feature provided by StorMagic and manage everything from one location, with nothing to maintain.

For more information on the licensing and pricing of StorMagic SvHCI and SvSAN, as well as the witness and WaaS, please refer to the separate [SvHCI pricing](#) and [SvSAN pricing](#) web pages.

## STORMAGIC WITNESS FEATURES AND BENEFITS

- Provides the arbitration service in a cluster leader election process
- Is a passive element of an SvHCI or SvSAN configuration and does not service any I/O requests for data
- Maintains the cluster and mirror state
- Has the ability to provide arbitration for thousands of SvHCI or SvSAN mirrors
- Is serviced remotely from the StorMagic Cloud
- Used over a wide area network (WAN) link
- Can tolerate high latencies and low bandwidth network links
- Is a unique service provided by StorMagic

Want to read more about how the witness works, its tolerances and failure scenarios? [Consult the StorMagic witness white paper for a more in-depth explanation.](#)