

# ImageSAN 1.0.4 Release Notes

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This document contains information regarding fixes that address known issues in ImageSAN 1.0.1.

## **What is Fixed?**

- Choosing a synchronization interface card is added.
- ImageSAN tray icon changes when restart is needed to apply new settings.
- ImageSAN tray icon blinks when ImageSAN is running in Administrative mode and restart is needed.
- Full support for extended partitions and logical disks.
- Increased number of supported dynamic disks.
- The QLogic pseudo device is not imported in the ImageSAN disk table anymore and the ImageSAN window does not display this disk.
- Support for Time Delay Instant Replay (TDIR).
- Network shares are accessible without the need a user to be logged on the computer that shares resources.
- Support for File Server for Macintosh service.
- Allow the access of services running in Local System Account to SAN volumes.
- Handling long file names.

## **Installing ImageSAN**

You can choose between installing a fresh copy of ImageSAN or updating your version of ImageSAN. Before installing ImageSAN, check the system requirements and the prerequisites (see “System Requirements” on page 3 and “Prerequisites” on page 3).

## System Requirements

To run, ImageSAN administration software your computer must meet the following minimum requirements:

- PC with a PII with a 300 MHz (megahertz) processor clock speed
- no support for Microsoft Windows® 95, Windows® 98 or Millennium Edition
- For Microsoft Windows NT® 4.0:
  - 64 MB of RAM minimum
  - You must be running Service Pack 5 (or higher)
- For Microsoft Windows® 2000:
  - 64 MB of RAM minimum
  - You must be running Service Pack 2
- For Microsoft Windows® XP:
  - 64 MB of RAM minimum
- Mouse
- Network LAN connection

**Important:** *Configuration between two computers connected with a cross cable is not supported.*

- CD-ROM drive (if installation is done from a CD-ROM)
- Some components may require additional system resources not outlined above

Disk-Space Requirements for ImageSAN is only 2MB.

## Prerequisites

Before installing ImageSAN make sure that:

- All workstations on which you intend to install ImageSAN are connected through the Local Area Network (LAN) to one and the same domain or workgroup.

**Note:** *Each workstation should have a unique IP address.*

- All workstations are running Windows NT®, Windows® 2000 or Windows® XP.
- On each workstation, a QLogic or Emulex Fibre Channel Host Bus Adapter (HBA) is properly installed.
- The SAN switch and all drives are setup.
- All workstations are connected to the storage and see the storage volumes.

**Note:** *On Windows® 2000/XP workstations, all dynamic disks on the remote storage should appear as Online in the Disk Management console prior to installing ImageSAN on them. If there are Foreign or Offline disk, you should import/reactivate them before installing ImageSAN.*

- The Guest account is enabled on all workstations.
- Any SAN management software is removed from your system (necessary when installing a fresh copy of ImageSAN).

## Installing a Fresh Copy of ImageSAN

Before installing ImageSAN on your computer, check the “System Requirements” on page 3 and “Prerequisites” on page 3.

The procedures for installing ImageSAN are the same for each workstation you want to connect to the Storage Area Network (SAN).

Three ImageSAN setup files are available for the different operating systems:

- ImageSAN\_nt.exe for Windows NT.
- ImageSAN\_w2k.exe for Windows 2000.
- ImageSAN\_xp.exe for Windows XP.

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You should run the setup file corresponding to the operating system installed on the computer on which you want to setup ImageSAN.

To prevent data loss, you should not allow ImageSAN and non-ImageSAN workstations to access the shared storage simultaneously. Install ImageSAN on one computer at a time.

**Note:** *Since Windows® XP does not support Basic volumes with spanned or stripe layouts, it is recommended to prevent Windows XP machines of mounting such volumes. Remove the drive letters of these volumes from the Computer Management console before installing ImageSAN.*

After having selected a computer on which to install ImageSAN, do the following:

### To install ImageSAN:

1. Shut down all other computers.
2. On the selected computer, log on using an account with administrative privileges.
3. On the Start menu, click Run.  
The Run dialog appears.
4. In the dialog, type one of the following:
  - X:\path\ImageSAN\_nt.exe
  - X:\path\ImageSAN\_w2k.exe
  - X:\path\ImageSAN\_xp.exe

Where X:\path is the location where the setup file is stored.

The installation begins.

5. Restart your computer when prompted.
6. Shut down the computer and proceed with the installation on another computer.

When ImageSAN is installed on all computers you can start them.

## Updating ImageSAN

When ImageSAN 1.0 or 1.0.1 is installed on your workstation, you can update it with ImageSAN 1.0.4. You do not need to stop all other computers connected to the SAN in order to update ImageSAN on a single workstation. Besides the setup program preserves all your ImageSAN settings.

### To update ImageSAN 1.0 or ImageSAN 1.0.1:

1. On the selected computer, log on using an account with administrative privileges.
2. On the Start menu, click Run.  
The Run dialog appears.
3. In the dialog, type one of the following:
  - X:\path\ImageSAN\_nt.exe
  - X:\path\ImageSAN\_w2k.exe
  - X:\path\ImageSAN\_xp.exe

Where X:\path is the location where the setup file of ImageSAN 1.0.4 is stored.

The installation begins.

4. Restart your computer when prompted.

## Uninstalling ImageSAN

To prevent data loss, you should not allow ImageSAN and non-ImageSAN workstations to access the shared storage simultaneously. You can uninstall ImageSAN from all workstations or, after uninstalling it from one workstation, disconnect the Fibre Channel HBA.

When you need to return your ImageSAN activation key for replacement, for example, you need to uninstall and deactivate ImageSAN. After deactivating ImageSAN on your computer, you will not be able to activate it again with the key you have

and benefit from the SAN performance even if you reinstall ImageSAN, until you obtain a new activation key.

**To uninstall ImageSAN without deactivation:**

1. Display the Control Panel.
2. Double-click the Add/Remove Programs icon.
3. In the Add/Remove Programs window, select ImageSAN and click the Change/Remove. The Setup wizard starts.
4. Clear the Permanently deactivate ImageSAN check box (if selected).
5. Click Next.
6. When prompted, restart the computer.

**To uninstall and deactivate ImageSAN:**

1. Display the Control Panel.
2. Double-click the Add/Remove Programs icon.
3. In the Add/Remove Programs window, select ImageSAN and click the Change/Remove. The Setup wizard starts.
4. Select the Permanently deactivate ImageSAN option.
5. Click Next and follow the on-screen instructions. During the deactivation process the Setup wizard generates deactivation information which is required on the licensing server. It is recommended to write down this information.

**Note:** *Make sure to write down correctly the serial number, activation and deactivation keys. Note that all this data is case-sensitive.*

For your convenience, the Setup wizard copies the deactivation key on the clipboard and connects you to the licensing server allowing you to complete the deactivation procedure.

6. After completing the deactivation procedure on the licensing server, restart your computer.

## Fixes Explained

### Choosing A Synchronization Interface Card

ImageSAN workstations use a synchronization interface to determine the other participants in the SAN and distinguish the master and slave workstations. Besides, the synchronization interface is used for exchanging metadata between the master and slave workstations.

The synchronization interface card is that device that connects your computer to the Local Area Network (LAN). ImageSAN uses an Ethernet adapter for a synchronization interface.

This device should meet the following requirements:

- its Media Access Control (MAC) address should be different from zero, indicating that the device is enabled and functioning properly;
- a valid IP address is assigned to this device so ImageSAN can use this IP address to represent the computer before the other ImageSAN workstations.

Till this maintenance, ImageSAN automatically detected the first network interface card (NIC) with a non-zero MAC address and a valid IP address and chose it for synchronization interface with the other computers on the ImageSAN network. No user interface was available for altering the automatic selection of a synchronization interface.

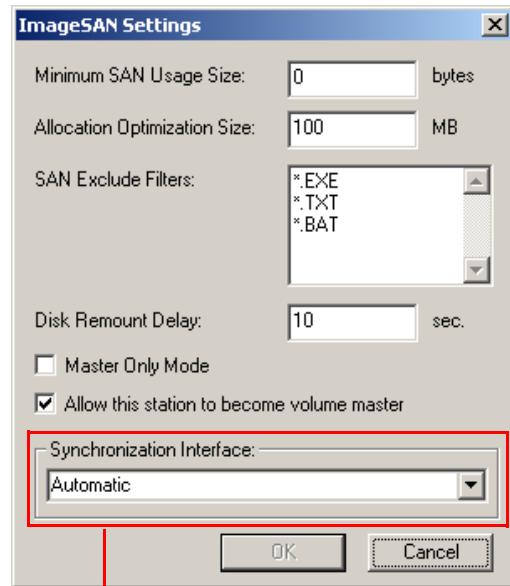
The automatic selection of a synchronization interface card contributes to the ease of setup of ImageSAN and the plug-and-play installation workflow. This convenient for the user solution works in most cases. However, in more complicated

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scenarios, the automatic selection of a synchronization interface may cause incorrect functioning of ImageSAN and unavailability of SAN volumes.

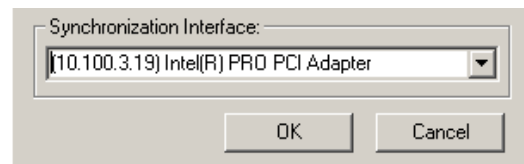
For example, if there are two or more NICs in your computer and they connect your system to different subnets. ImageSAN automatically selects the first NIC with non-zero MAC address and a valid IP address. However, there exists the risk ImageSAN to choose a NIC that is not connected to the same subnet to which all other ImageSAN workstations are connected. Due to this, ImageSAN would be unable to find a master workstation for the SAN volumes, and all resources located on the shared storage would be inaccessible. To solve the problem, you need to choose the correct NIC manually.

In this release, a new control is added on the ImageSAN Settings dialog - Synchronization Interface combo box.



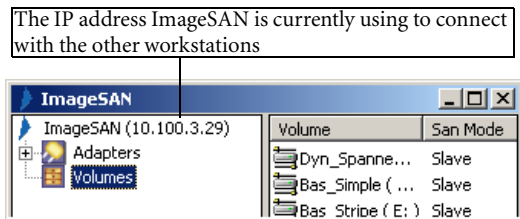
New control allowing the user to choose a proper NIC when necessary.

**Synchronization Interface** — Lists all NICs installed in your computer. You can distinguish each network adapter by its IP address and the make and model.



When installed, ImageSAN is set to automatically select the synchronization interface. Beside the

ImageSAN tree item in the ImageSAN application window the currently used IP address is displayed.



If ImageSAN uses an incorrect IP address to connect to the other workstations on the SAN, you can choose a preferred synchronization device.

#### To choose a preferred synchronization interface:

1. Display the ImageSAN application window and show the ImageSAN Settings dialog.


To show the ImageSAN Settings dialog, right-click the ImageSAN tree item and choose SAN Settings.

2. From the Synchronization Interface combo box, choose the preferred NIC.


**Tip:** You can distinguish the preferred NIC by its IP address. Make sure each workstation on the SAN can ping successfully the selected IP address.

3. Click OK.
4. Restart the computer.

### ImageSAN Tray Icon Indicates When Restart is Required

The ImageSAN tray icon changes to  when you make any changes to the ImageSAN settings and restart is needed in order the new changes to be applied.

### ImageSAN Tray Icon Blinks

ImageSAN tray icon changes to  and begins to blink when you enter the Administrative mode. The

purpose is to remind you that restart is required after you finish your work while in Administrative mode of ImageSAN.

**Warning:** *It is a potentially dangerous situation when a workstation running ImageSAN in Administrative mode and other workstations running ImageSAN in common mode access the SAN volumes simultaneously. This may lead to data corruption and loss of data stored on the SAN drives. When you enter Administrative mode on a specific workstation, make sure that all other SAN-connected computers are shut down. After you finish your work in Administrative mode, restart the computer and only after that start the other ImageSAN workstations.*

### Full Support for Extended Partitions

Prior to this maintenance ImageSAN could not recognize correctly the file system on extended partitions on SAN drives. ImageSAN 1.0.4 provides full support for extended partitions and they can be successfully mounted on systems running ImageSAN.

### Increased Number of Supported Dynamic Disks

The previous versions of ImageSAN supported up to 20 dynamic disks per workstation. ImageSAN 1.0.4 supports up to 256 dynamic disks per workstation.

### QLogic Pseudo Device Issues

This issue is related only to the case when ImageSAN works with QLogic Host Bus Adapters.

Prior to this fix ImageSAN imported in the ImageSAN disk table the pseudo device each QLogic HBA creates. When the Fibre Channel cable was unplugged, ImageSAN detected only the QLogic Pseudo device and displayed it in the list of available hard disks.

This maintenance fixes this problem and the pseudo device is no longer displayed in the ImageSAN application window.

## Support for Time Delay Instant Replay

This maintenance build provides support for Time Delay Instant Replay (TDIR) on SAN volumes. This feature allows applications that support TDIR to benefit from the high performance of SAN disks.

TDIR allows simultaneous read and write operations on the same file located on a SAN volume to be initiated from client applications that support TDIR and running on different workstations. For example, on one of your ImageSAN workstations you use an application to capture video material and store it on a SAN drive. On another ImageSAN workstation you run a TDIR-enabled application to play the captured material while it is still being captured on the first workstation. The playback is continuously updated while new material is captured.

## Shares Accessible without Logging On the Sharing Computer

SAN resources shared from ImageSAN workstations were not accessible for clients accessing these resources through the LAN if no user was logged on the computer that shared these resources. This maintenance addresses this problem and currently, folders, shared from ImageSAN workstations (masters or slaves) can be accessed through the LAN without the need any user to has logged on the computer that shares these folders.

## Services Running in Local System Account

This maintenance fixes problems related to the inability of services running in Local System Account

to access SAN volumes. Currently, if a service is running on a master workstation, no additional configuring of ImageSAN is required to guarantee the access of the service to the SAN volumes.

In case a service is running on a slave workstation, it needs to communicate with the ImageSAN service, which is running on the master workstation, through the Local Area Network when accessing SAN volumes. To allow this communication, you need to enable the share redirection and specify a share redirection account. To see the requirements about share redirection accounts, refer to “Share Redirection Account Issues” on page 8.

## Share Redirection Account Issues

A volume master is that workstation connected to the Storage Area Network (SAN) that supervises a specific volume and takes care about data protection. The master workstations processes all metadata requests from the slave workstations and provides the necessary information to them so they can access the data stored on the shared volume.

When a slave workstation shares resources on the SAN storage, and a client workstation that is not connected to the SAN tries to access these resources, the slave workstation should redirect the metadata requests to the master workstations. These requests need to be authenticated by the master using a specially dedicated account.

The share redirection account serves for authentication of metadata requests before the master of a SAN volume coming across the LAN from workstations that access resources on SAN volume, shared by a slave workstation.

In a domain scenario, you should use a domain, network enabled account for a share redirection account. Make sure that you can log on both the master and slave workstations using this account. You

should also be able to access each workstation through the LAN using the share redirection account.

In a workgroup scenario, you need to create the same account to use as share redirection account on both the master and slave workstations. Make sure you can log on and access the both workstations across the LAN using this account.

You can use the share redirection account not only for redirecting metadata requests from clients outside the SAN to the master of shared resource. Services that run on a slave workstation using the Local System account also need appropriate representation when accessing resources through the Local Area Network (LAN).

For example, on a slave workstation you run a service, called proxy service, that searches specific SAN drives for video files and creates lower quality copies of these media. Other workstations, using an appropriate client application, access the lower quality media files when performance is required. The proxy service should handle all requests for lower quality media coming from the clients. However, only the master of the volume, on which the lower quality media is located can provide the necessary metadata when clients try to access the it. Due to this, the proxy service should communicate with the ImageSAN service that runs on the master computer and exchange the necessary metadata through the LAN. However, the Local System account does not have access to network resources. In this case you have two options:

- Assign a user logon account to the service. This solution is not recommended when using ImageSAN with fail-over because nothing can guarantee the ability of the service to logon to the new master workstation in the case of a master failure.
- Enable the share redirection in ImageSAN and create a domain share redirection account or on each

workstation connected to the SAN create the same share redirection account. This way you ensure that your service will always have access to the SAN volume, does not matter which of the computers in the SAN has become a volume master.

## File Server for Macintosh Service Issues

With ImageSAN 1.0.4 you can create shared folders on SAN volumes which are accessible for Apple Macintosh clients.

To create a shared folder for Apple Macintosh clients, the following should be observed:

- The File Server for Macintosh service should be installed on an ImageSAN master workstation. The recommended SAN configuration is Master-only in order to guarantee that the shares for Apple Macintosh clients will be always available.

**Note:** *It is not possible to share SAN resources for Apple Macintosh clients from an ImageSAN slave workstation.*

- The File Server for Macintosh service should be dependent on the ImageSAN service when sharing resources on SAN drives. To see how to make a service dependent on ImageSAN, refer to “Support for Different Types of Services” on page 10.

## Handling Long File Names

Blue screens were witnessed when copying files with long filenames (approximately 256 characters) on drives managed by ImageSAN. This problem is fixed and ImageSAN handles correctly files with long filenames.

## Best Practices

This section provides information on how you can provide access to SAN drives for different types of services with ImageSAN installed on your system.

### Support for Different Types of Services

Some services you install on your system require the availability of specific resources so they can operate properly. In some cases, the absence of these resources at the boot time of the system may even prevent these services from starting. An example of a resource on which a service may depend is a hard disk drive or another service installed on the system. It may be necessary to delay the startup of a service till the resources on which it depends become available to ensure its proper functioning. You delay the startup of a service by making it dependent on another service.

At boot time of the system, ImageSAN protects the SAN disks and prevents their mounting by the system. The SAN disks become available and ready for use only after the successful startup of ImageSAN service. In this case, all other services that rely on the availability of SAN disks during the startup of the system will not start or they will generate errors.

For example, if you create a share for Apple Macintosh clients on a SAN volume, after the restart of the system, this share will not be available because when the File Server for Macintosh service starts, the SAN drives are not ready for use yet. Other examples of services that may rely on the availability of SAN volumes include the World Wide Web Services, which are part of the Internet Information Services (IIS), Distributed File System services, and so on.

To solve this problem, you should delay the startup of services till the SAN drives become available and

ready for use. This means that you should make all these services dependent on the ImageSAN service.

**Note:** *Change the dependencies of a service and make it dependent on the ImageSAN service only if it relies on the availability of SAN volumes. If a service works properly, do not change its dependencies.*

For example, if you share a folder for Apple Macintosh clients that is located on your local hard drive which is installed in your computer, you do not need to change the dependencies of the File Server for Macintosh services.

Note that making a service dependent on the ImageSAN service slows down its startup because it waits for ImageSAN to start and prepare the SAN volumes for use. This may result in slower loading of the system as a whole.

**Warning:** *Plan the changing of service dependencies very carefully because this may prevent the system from starting properly if you establish a "circular dependency". For example, such a problem would occur when you make two services dependent on one another. Neither service would be able to start as they would both require the other to be started first.*

You can choose between two methods for delaying a specific service and making it dependent on the ImageSAN service:

- Use Microsoft® Registry Editor. This method is complicated and that is why it is not recommended. For step-by-step procedures on delaying the loading of a specific service using the Registry Editor, refer to the Microsoft Knowledge Base Article - Q193888 at [www.support.microsoft.com](http://www.support.microsoft.com).
- Use the ISANUtil tool to make a service dependent on the ImageSAN service or cancel service dependency on ImageSAN. We recommend the usage of ISANUtil.exe because this method is simple and, although it involves modifying the registry, it prevents the user from unintentional modifying any

part of the registry that is not related to delaying service startup.

Before you make a service dependent on ImageSAN, you should know the name of the service. When changing the dependencies, you use the real service name and not the display name.

#### To view the service name:

1. Click Start, point Settings and choose Control Panel.
2. (Windows 2000/XP) Open the Administrative Tools window.
3. Display the Services dialog/snap-in.
4. Select the service you want to make dependent on ImageSAN and display its properties.
5. Write down the Service Name. You will use this name later to make the service dependent on ImageSAN.

#### To run ISANUtil.exe:

1. Click Start and choose Run.
2. In the Run dialog, type **cmd**.
3. In Command Prompt, type **isanutil**.  
ISANUtil starts listing the parameters it can accept.

#### To list the services dependent on ImageSAN:

In Command Prompt, type **isanutil /dl**.

All services that are dependent on ImageSAN are listed with their Service Name and Display Name which appears in the Services snap-in/dialog box.

#### To make a service dependent on ImageSAN:

In Command Prompt, type **isanutil /da [servicename]**.

Where [servicename] stands for the real name, and not the display name, of the service you want to make dependent on ImageSAN.

After you make a service dependent on ImageSAN, you may want to make sure it is really on the list of services that start after the ImageSAN service. Using ISANUtil.exe list all services that depend on the successful startup of the ImageSAN service. You can also check the Dependencies tab on the service's Properties dialog (you can display it from the Services snap-in/dialog box).

#### To cancel the dependency on ImageSAN:

In Command Prompt, type **isanutil /dd [servicename]**.

Where [servicename] stands for the real name of the service you want to make independent from the ImageSAN service.

