

# Video Archive Server User Guide



**B.A.S.I.S.® ET**

BEST ACCESS SYSTEMS INTEGRATED SOLUTIONS



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# Archiving

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# Chapter 1: Introduction

## *Video Archive Server Overview*

The Video Archive Server software allows you to archive video recorded from a camera(s). B.A.S.I.S.<sup>®</sup> supports both continuous and event-based video archiving. Video is archived 24 hours a day, 7 days a week. Event-based video archiving stores a certain pre-configured time span based on an alarm.

Since video files can be very large, continuous archiving is done in one-hour increments. To view the video of the time period 10:03 am to 11:06 am, two requests would have to be made: one for the video from 10:00 am to 11:00 am, and the other from 11:00 am to 12:00 noon.

Video creates numerous large files. To keep enough drive space free for new video files, you must either purge the video files or archive the files. *Purging* means that after a specified period of time (or specified amount of disk space remains), the old video files are deleted. If you are purging the files, the Archive Server service can be run on any computer on the network, and that computer does not have to be running Windows 2000 Server. When purging, it is common to run the Archive Server service on the same computer that the Communication Server is run on.

When archiving is used, the Archive Server service must be run on a Windows 2000 Server machine. *Archiving* means that the most recent files are kept on the video recorder (generally few days), while older files are stored on tape. B.A.S.I.S. uses Remote Storage Solution, an application that comes with Windows 2000, to migrate the video files from disk to tape.

This is not a backup solution, it is a storage solution. You must make a copy of the tape to have a backup!

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**Important:** If you are upgrading to Windows 2003 Server, you **MUST** upgrade to the Enterprise edition.

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## *Conventions Used in this Manual*

- Where a term is defined, the word is represented in *italics*.
- Field names, menus, and menu choices are shown in **bold**.
- Keyboard keys are represented in angle brackets. For example: <Tab>, <Ctrl>.
- Keyboard key combinations are written in two ways:

- <Ctrl> + <Z> means hold down the first key, then press the second
- <Alt>, <C> means press the first key, then press the second
- Window buttons on the screen are represented in square brackets. For example: [OK], [Cancel].

## Chapter 2: Digital Video Archiving

The Archive Server is based on a centralized archiving scheme, which makes the management of video archiving easy. Video recorders can be located anywhere on a LAN or WAN connection, as opposed to a central location. The video recorders no longer have to be easily accessible for backup and tape management.

### *Advantages of Centralized Archiving*

Place the video recorders in remote areas that may not always be accessible. It is still possible to archive the video from them to a central storage system. Moving or archiving video from the video recorders to a centralized Archive Server allows tape management to be provided from a single point. An IT department can now provide archive and tape management as part of its normal network administration. Retrieval of video in a non-centralized system is always problematic. If the requested video is not on the tape loaded in the video recorder, someone would have to go to the remote server and load the tape.

In a centralized solution, a single person can manage the archival and retrieval of an entire system. Maintenance of a centralized system is easier to manage since all of the archival hardware can be located in a single location. This unique centralized archive mechanism becomes even more evident as video from completely different systems can all reside on a single tape library. With the use of fewer tape jukeboxes or hard drive vaults, the cost of ownership is significantly less and cost of management labor is also reduced.

### *Time Synchronization*

B.A.S.I.S. synchronizes the time on all video recorders as well as any intelligent system controller by use of the B.A.S.I.S. Communication Server. The communication server periodically checks all panel clocks to make sure they are at the same time. If they are not, it will set the panel or video recorder times so they are the same.

1. The synchronization “Master” can be on any computer on the network.
2. B.A.S.I.S.’s services must be synchronized with the “Master.” This includes the Communication Servers, the Linkage Server, and the Archive Servers.
3. All clients should be synchronized with the master. (This is optional, but recommended).

## *Storage Options*

Best offers three storage option solutions for centralized archiving:

- internal tape drives
- tape jukeboxes
- hard drive vaults for online archive storage

### **Internal Tape Drive**

The internal tape drive option is an AIT2 LVD, and is capable of storing up to 50 GB of data per tape.

Using the internal tape drive option requires a PCS-WIN2K type of personal computer, which is running Windows 2000. The internal tape drive option (Q-637-0208-8) is an *AIT2* (Advance Intelligent Tape) *LVD* (Low Voltage Drive), which is capable of storing up to 50 GB of data per tape. Best does not support this option in the NiceVision digital box. It is only supported with the Windows 2000 PC box.

### **Qualstar Tape Juke Box**

All jukeboxes use AIT2 tape drives that are capable of storing up to 50 GB of data per tape. Best offers tape jukeboxes that range from 10 tapes to 120 tapes.

Using any of the Qualstar Tape Juke Box options outlined in the current pricing, all of the jukeboxes listed are using the same hardware. Each jukebox requires a PCS-WIN2K type of personal computer, which is running Windows 2000 for the operating system. The 10-tape jukebox can have up to two AIT2 tape drives. The 10-tape jukebox can store up to 500 GB (or 0.5 TB) of data, while the 120-tape jukebox can store up to 6000 GB (or 6 TB) of data. Qualstar does offer other bigger tape drive options all the way up to 360 tapes, but they are not currently included in Best's standard offerings. The number of tapes and tape drives in the jukebox determine how fast an event is recovered from a tape within a jukebox. It typically takes between 2 and 8 minutes to recover an event from a tape if the tape is still in the jukebox.

### **Dell Power Vault**

When using a hard drive configuration, it may not be necessary to have a Windows 2000 personal computer. In this configuration, a Windows 2000 computer with the Dell Power Vault configuration is required. You can, however, store the digital video data to any hard drive available on the network as long as it is running Windows 2000 for its operating system. The Dell Power Vault solutions max out at 288 GB per vault, but are stackable to a maximum of 64 drives or 2.3 TB in a 42-U rack. The advantage of using hard drives for your storage medium is that you always have instant playback for all events or video clips.

## Archiving Options

### Event Archive Storage

Event storage can be accomplished in any of the three archive storage options (internal tape drives, tape jukeboxes, and hard drive vaults) that Best supports. The maximum number of camera channels that can be stored to a single storage device is 320, or 10 loaded (32 channel) B.A.S.I.S. Digital video recorders.

Each recorder's video events are archived one at a time until all the specified events are archived so that the network bandwidth utilization is minimized.

### Continuous 24 x 7 Archive Storage

Continuous archiving is significantly different than event-based archive storage. With the Best video recorder, there is no limitation on this and archiving can occur on all 32 channels simultaneously.

With the LDVR, any camera channel that is going to be designated as a continuous archiving device may be set at any bit rate for motion and non-motion video recording.

B.A.S.I.S. takes the data from the camera channels and assembles it into compressed blocks of files. The data is then moved to the archiving device. The method of moving data is the same, regardless of whether the archiving device is a bank of hard drives, a tape drive, or a jukebox. The amount of time, data, and network bandwidth calculations are actually the same per camera channel as the total amount of event archiving per server.

No more than four video recorders (or 128 channels) can be continuously archived to a single archive server.

The amount of storage required when doing continuous archiving is dependent upon the number of cameras being archived and the bit rate at which they are recording.

When continuous video archiving is used, it is important to select a tape library with a large enough tape capacity. Ideally, the tape library should hold enough tapes that you do not need to remove tapes. There are two reasons for this recommendation:

1. The message that is sent to the Alarm Monitoring station specifying which tape is needed is also broadcast to every other Alarm Monitoring station that is also requesting a tape that is not in the tape drive. This means that one Alarm Monitoring Station may receive a tape request message that was intended for another Alarm Monitoring station in addition to the message for the tape that they requested.
2. If no one is continuously monitoring the Operator Requests in the REMOTE STORAGE console, a user will have to call someone to have the tape with the information they need inserted into the tape drive.

Select a Tape Library that holds enough tapes that you do not need to remove tapes.

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# Remote Storage

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## Chapter 4: Install and Configure Remote Storage

### *Prerequisites for Remote Storage Installation*

Before Remote Storage is installed, there are several requirements that must be met. They include:

1. **Only the Tape Library SCSI tape drive should be installed.** There should be no SCSI tape drives other than the Tape Library attached when installing Windows 2000 Server. If other tape drives are installed, then Windows 2000 Server must be reinstalled before proceeding.
2. **Windows 2000 Server must be installed.** Windows 2000 Server can be installed, but the Remote Storage component of Windows 2000 must be installed **after** the tape jukebox is attached to the computer and powered on.
  - In order to install Remote Storage, Windows 2000 Service Pack 1 is required.
3. **Separate NTFS partition for Remote Storage is required.** A separate Windows 2000 NTFS partition must be created for Remote Storage. The recommended minimum partition size is 4.5 GB.

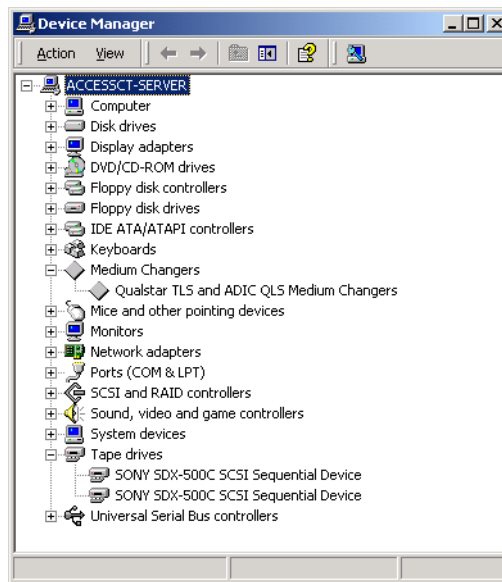
### Installing Remote Storage

#### Step 1: Install the Video Archiving Hardware

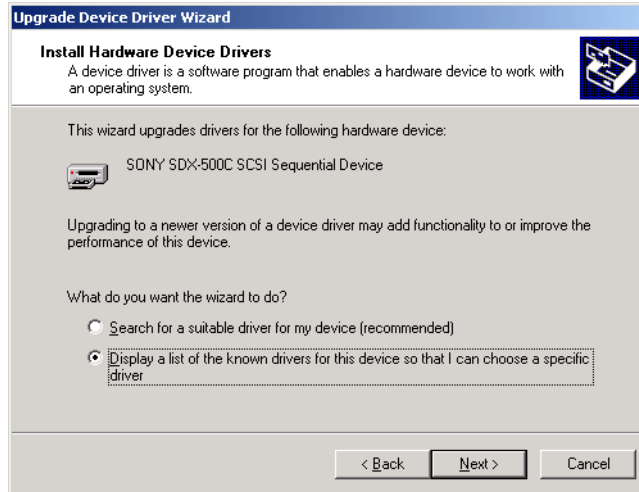
1. After the prerequisites for Remote Storage installation have been met, the video archiving hardware should be installed.
2. Install the Ultra Wide SCSI-2 LVD controller in the system for Tape Library compatibility. Only AIT low voltage drives are supported.
3. Connect the Tape Library SCSI output to the external output of the SCSI controller above. Make sure that the SCSI terminator is installed on the Tape Library.

### Step 2: Power Off the Computer and Jukebox

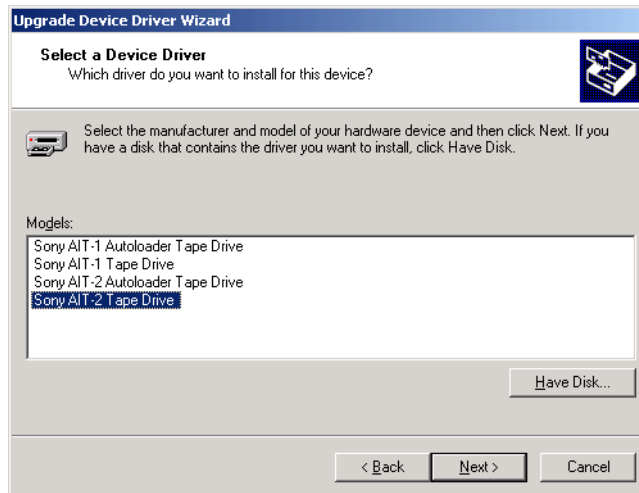
1. For Windows 2000 to detect the jukebox correctly, both the computer and the jukebox must be powered off.
2. Power off the computer and jukebox.
3. Power on the computer and jukebox.
4. The computer will start up. In the Windows **Control Panel**, select **System** and then click the **Hardware** tab.
5. Click [Device Manager...].
6. Expand the “Tape drives” and the “Medium Changers” folders, or “Other Devices.” If you see the following, you are done:



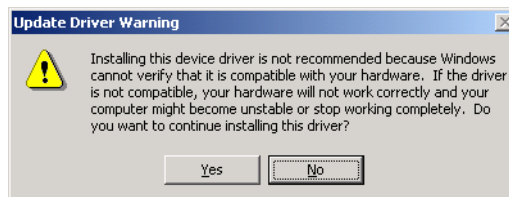
7. If you see yellow question marks over the icons of the devices in the “Tape Drives” folder and the devices are listed as unknown, then you must install the correct drivers before installing Remote Storage. To do this:
  - a. Obtain the **SonyAIT2** drivers from Sony. If you made this purchase from Best, the driver diskettes are included. They can be found on the CD, B.A.S.I.S. disk 2.
  - b. Right-click on the first device listed under “Tape devices.”
  - c. Select the **Properties** menu option.
  - d. Click on the “Driver” tab.
  - e. Click [Update Driver...].
  - f. The Upgrade Device Driver Wizard will start. Click [Next].
  - g. Select the “Display a list of known drivers for this device so that I can choose a specific driver” radio button (as shown).



- h. Click on the [Next >] button.
- i. Click on the [Have Disk...] button.
- j. Insert the disk that contains the drivers, then select the correct driver.
- k. Click on the [OK] button.
- l. Select the “Sony AIT-2 Tape Drive” entry (shown below) and click [Next>].



- m. When the following warning message is displayed, click [Yes].

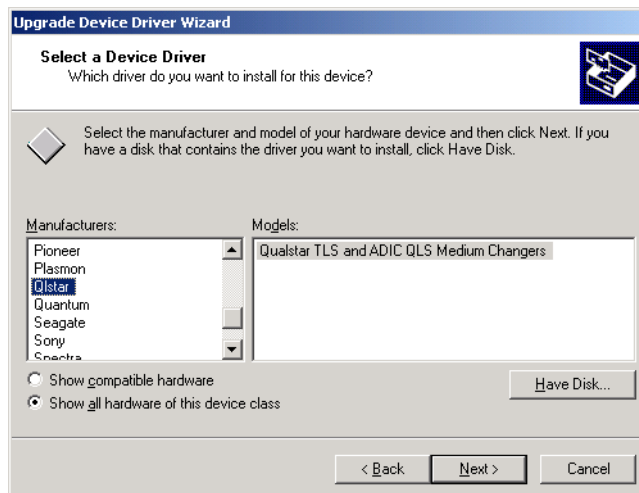


- n. Click on the [Next>] button.
- o. Click on the [Finish] button.

- p. Repeat previous steps for the second device listed under “Tape devices”.
8. If the “Medium Changers” folder has a device that is listed as unknown, you must install the correct driver before installing Remote Storage. To do this:
  - a. Right-click on the unknown device listed under “Medium Changers.”
  - b. Select the **Properties** menu option.
  - c. Click on the “Driver” tab.
  - d. Click on the [Update Driver...] button
  - e. The Upgrade Device Driver Wizard will start.
  - f. Click on the [Next] button.
  - g. Select the “Display a list of known drivers for this device so that I can choose a specific driver” radio button (as shown).



- h. Click on the [Next >] button.
- i. Select the “Show all hardware of this device class” radio button, as shown below:



- j. Select “Qlstar”, then click [Next >].

- k. Click [Finish].

### Step 3: Install Remote Storage

Remote Storage comes as a part of Windows 2000. After the Archive Server hardware has been installed, Remote Storage can then be installed and configured. If Remote Storage was not installed on the system when Windows 2000 Server was installed, install it from the Windows 2000 Server CD.

Make sure the SCSI tape jukebox is attached to the computer that it will be managed from **before** the Remote Storage component of Windows 2000 is installed.

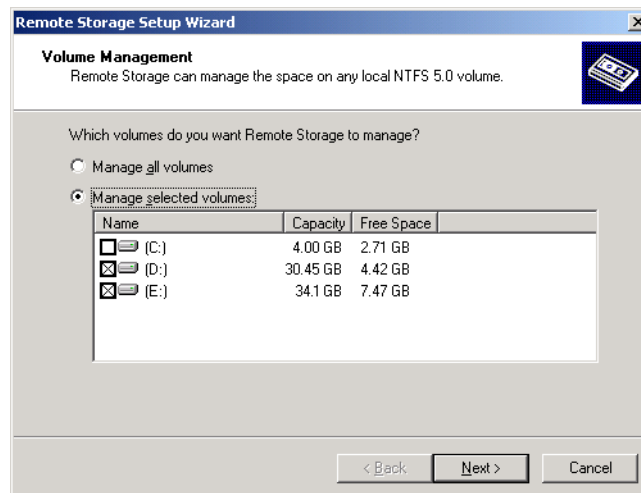
1. In Windows, click the **Start** button and navigate to **Settings > Control Panel**.
2. Click the Add/Remove Program icon.
3. Then select Windows Components.
4. Click on the [Add/Remove Windows Components] button.
5. Select the **Remote Storage** checkbox.
6. Click on the [Next] button.
7. Click on the [Finish] button.
8. Click on the [Yes] button, and the computer will reboot. This completes the installation of the Remote Storage component of Windows 2000.

## Step 4: Configure Remote Storage

1. In Windows, click the **Start** button and navigate to **Administrative Tools > Remote Storage**. This will launch a wizard that is used to configure Remote Storage, which looks like the following:

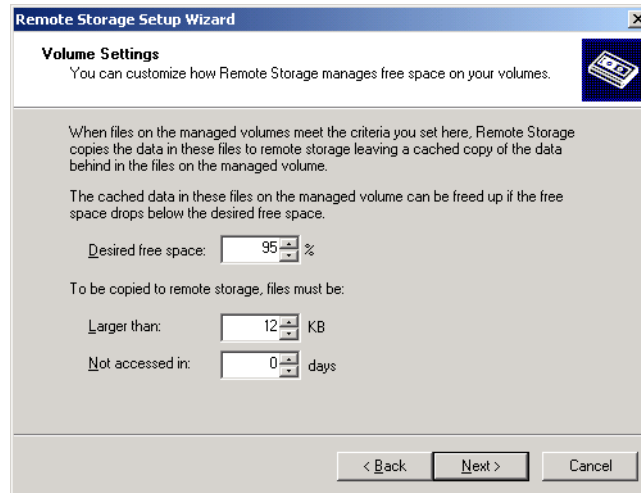


2. Click [Next >].
3. The wizard continues. On the following screen, select the Manage selected volumes radio button, and then select the NTFS volume that will be used for Remote Storage. Typically, this will be drives **D:** and **E:**.

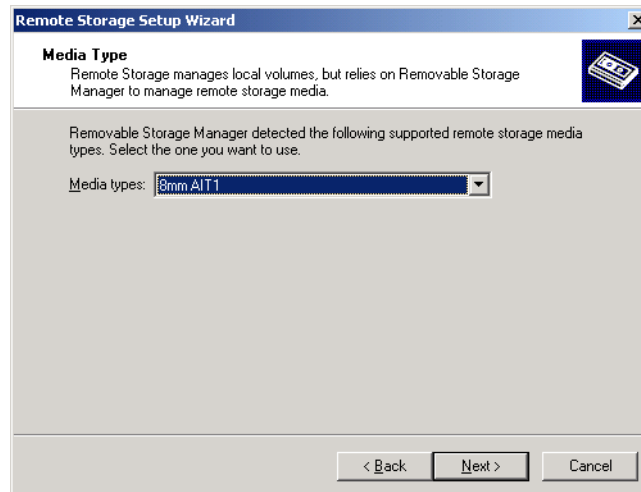


4. Click [Next >].
5. The wizard continues. On the following screen, select these settings:
  - Desired free space: **95%** - the amount of free space that must remain on the drive
  - Larger than: **12 KB** - the size that a file must exceed in order to be copied to remote storage
  - Not accessed in: **0 days** - the files are eligible for archiving immediately

**Note:** When the archive server determines that the amount of free space remaining on the drive is less than the **Desired free space** setting, enough video events will be archived to free up the specified amount of drive space.



6. The wizard continues. On the following screen, there should only be one selection in the Media types dropdown list. That selection must be the tape library that will be used for archiving.



7. Click [Next>].
8. The wizard continues. On the following screen, if you are doing **only** event archiving, click [Change Schedule...].

**Notes:** If you are archiving, the steps pertaining to scheduling should be SKIPPED. If you happen to run through this portion of the wizard, a task will be created in the Scheduler called “Copy Files.” Open up the Scheduler and modify this task by selecting the **Disable** option to disable this task.

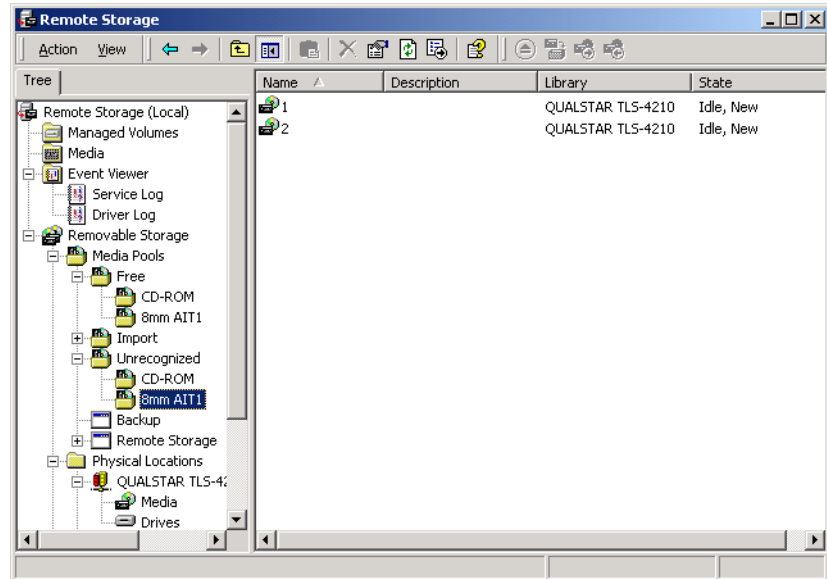
This task is designed for the RSS to automatically archive video from the Archive Server to a storage tape at scheduled time. The B.A.S.I.S./RSS solution requires B.A.S.I.S. to specify when video is to be moved off to tape and thus this task would interfere with the normal operation of the system.

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9. The Advanced Schedule Options screen will close. Click [Next>].
10. On the final screen of the wizard, click [Finish].



11. The Remote Storage management console window will automatically open. It looks like the following (in this case, the jukebox contains two tapes):



12. Turn off compression and indexing services. To do this,
- Right-click on each drive and select **Properties** from the popup menu.
  - Make sure the checkboxes next to “Allow indexing services” and “Compression” are unchecked.
  - Click on the [OK] button.
13. Share drives D: and E: if they are not already shared.
- For the D: drive, create a new folder. Name the folder **rss1** and share it.
  - For the E: drive, create a new folder. Name the folder **rss2** and share it.

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**Note:** To share a folder, right-click on the folder and choose the **Sharing...** option. Click on the radio button **Shared As...** and then click on the [Apply] button.

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- Under Managed Volumes, right-click on the D: drive. A popup menu will appear.
- Select the menu option **All Tasks > Copy files to Remote Storage**.
- Under Managed Volumes, right-click on the E: drive. A popup menu will appear.
- Select the menu option **All Tasks > Copy files to Remote Storage**.
- Disable the automatically scheduled task “Remote Storage Copy Files.” This function is access in the **Programs > Accessories > System Tools >**

**Scheduled Tasks.** Locate this task and right-click on it. Select Properties from the popup menu and uncheck “Enable..” checkbox.

19. The tasks “Copy files to Remote Storage D” and “Copy files to Remote Storage E” must exist but not be scheduled.
20. Right click on the task, “Copy files to Remote Storage D.” Select **Properties** then go to the Settings Tab and uncheck “Stop the task if it runs for 72 hours.”
21. Repeat this procedure for second task.

## Chapter 5: Using Remote Storage

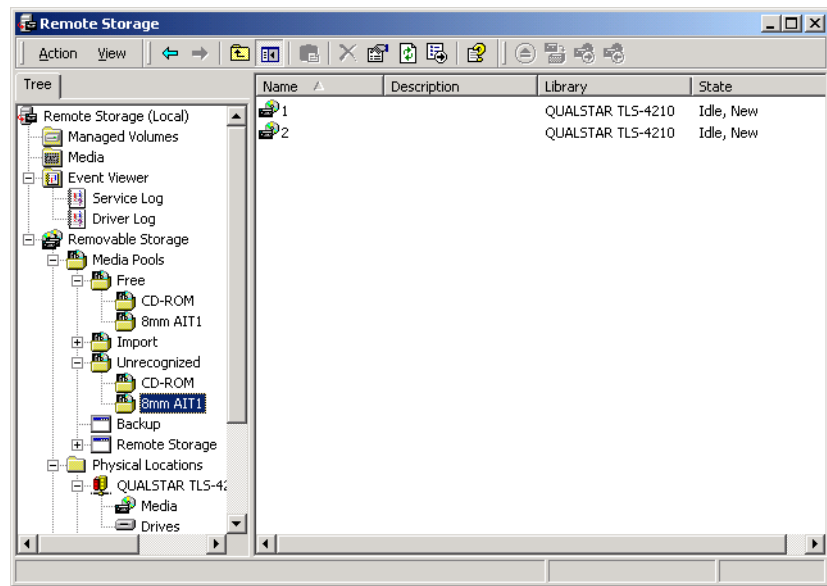
### *Remote Storage Management Console*

The Remote Storage Management console consists of the following areas:

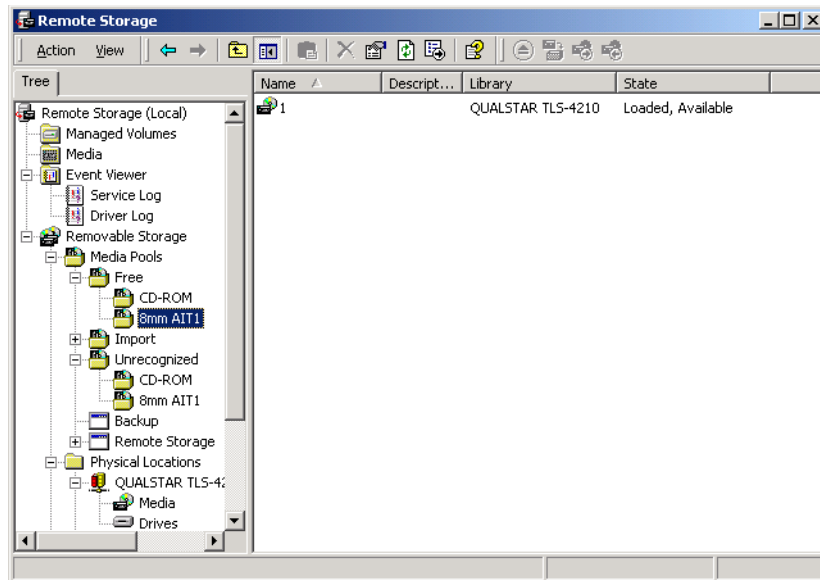
1. Managed Volumes:
2. Media:
3. Event Log: lists all events
4. Removable Storage: storage that is removable, i.e. CD-ROMs, JAZ drives, tape drive, etc.
  - a. Media Pools: logical divisions of stored media
  - b. Physical locations: places where tapes (or other removable media) reside
  - c. Operator requests: when the system needs something, such as a specific tape, the request is listed here
5. Work queue: shows all tasks that Remote Storage performs internally

### Tapes in the Remote Storage Management Console

When a tape is injected into the jukebox, it will be listed in the Remote Storage Management Console in **Removable Storage > Media Pools > Unrecognized > 8mm AIT1**, and will have a **State** of “Idle, New” listed in the right window pane. In the following screen shot, there are two new tapes in the jukebox, named “1” and “2” by default.



Before a new tape can be used, it must be prepared. When a tape is prepared, it gets moved from the Unrecognized media pool to the Free media pool, and its State changes from “Idle, New” to “Loaded, Available”. To prepare a tape, refer to “Preparing a Tape” on page 25.



## *Remote Storage Procedures*

### Tape Procedures

#### Preparing a Tape

1. In the left pane of the Remote Storage Management Console, navigate to **Removable Storage > Media Pools > Unrecognized > 8mm AIT1**.
2. Double-click on the “8mm AIT1” folder. Any new tapes that need to be prepared will be listed in the right pane.
3. Right-click on the tape you wish to prepare and choose “Prepare” from the right-click menu.
4. The tape will be moved to **Removable Storage > Media Pools > Free > 8mm AIT1**, and the **State** will change to “Loaded, Available.”

### Jukebox Procedures

#### Monitor Tape Activity

During normal operation, tapes will be automatically moved from the “Free Pool” to the “Remote Storage Pool” as they are needed. This happens when the Jukebox needs to write data to the tapes, but there is no space left on any of the tapes in the “Remote Storage Pool.” If there are no tapes left in the “Free Pool”

when a tape is needed, a system alert will pop up on the archive server asking that a tape be added to the “Free Pool.” There are two options when this situation arises:

- A tape from the “Remote Storage Pool” needs to be deallocated and moved back to the “Free Pool” for reuse. If this is done, all of the data on the tape moved back to the “Free Pool” will be lost forever.
- A tape from the “Remote Storage Pool” will have to be removed from the system using the Ejection Wizard and a new tape will need to be injected into the Jukebox using the Injection Wizard. Once injected, it must be moved from the “Unrecognized Pool” to the “Free Pool” before it can be used.

It is recommended that in either case, the system should be monitored to avoid the situation where there are no tapes left in the “Free Pool.” It is good practice to add tapes back to the “Free Pool” before it is completely empty and a system alert is generated.

Currently, there is no automatic way of moving media from the “Remote Storage Pool” to the “Free Pool”. This must be monitored and done manually.

## **Eject a tape**

1. In the Remote Storage console, right-click on the name of the tape you wish to eject.
2. If the tape is currently mounted, select Unmount. If not, proceed to step 3.
3. Select Eject, and the Eject wizard will appear. Follow the instructions on the screen.

## **Inject a tape**

1. In the Remote Storage console, double-click on **Physical Locations**.
2. Right-click the applicable library. Select **Inject**, and the Inject wizard will appear. Follow the instructions.
3. Follow the instructions on the Media Inject wizard.

## **Proper Tape Labeling Techniques**

When the period of time for which the tapes are kept exceeds the amount of space available within a Jukebox, the full tapes must be removed from the system and properly labeled.

Every tape moved from the “Free Pool” to the “Remote Storage Pool” is given a unique name. When you “Eject” a tape from the “Remote Storage Pool,” the system will remember what is stored on that tape and will reference that tape based on that unique name. It is possible for you to rename the tape within the Remote Storage software prior to ejecting it from the system, and the Remote Storage System will remember and reference the tape using that name, but it is not recommended.

Once a tape is ejected, a label should be applied to the tape that matches the name given by the Remote Storage System. A typical name given a tape would be “RS\_*x*” where *x* is a variable.

## Maintenance Procedures

### Cleaning Libraries

Removable Storage can manage the cleaning of an entire robotic library or the drive for a stand-alone drive. Each tape-based robotic library can contain one cleaner cartridge. You can use Removable Storage to clean a drive, assign or release a cleaner slot, and insert or eject a cleaner cartridge. Removable Storage generates an operator request. If you eject a cleaner cartridge before it has reached its maximum usage count, Removable Storage deletes the usage count information.

To clean a robotic library:

1. Under Removable Storage, right-click on the library you want to clean.
2. Click on Cleaner Management.
3. Follow the instructions in the Cleaner Management wizard.

### Recycling Tapes

Tapes are automatically taken from the free pool and added to Remote Storage. The new tape is named and numbered the next increment from the last tape. In order to conserve space, tapes can be recycled.

1. Select the tape you wish to recycle. It is recommended that you select the tape with the lowest number (this would be the earliest tape).
2. Right-click on the tape and choose the option, **Deallocate**. This tells the system that the tape is no longer needed.
3. Move the tape back into the free pool. You can do this by dragging and dropping the tape into the free pool, or right-clicking and selecting the option, **Prepare**. The data on the tape will be destroyed.

## Remote Storage Error

On occasion, Remote Storage may elect to skip or fail to archive files off to tape. This is a normal part of the system, as long as the next archive iteration picks up those files and archives them off to tape. This event “Warning” can be ignored.

Note, however, that the same textual message may show up in an event “Error.” This should not be ignored. If an event “Error” occurs, then appropriate measures should be taken to troubleshoot the problem, such as ensuring that there is enough free media to archive the files.

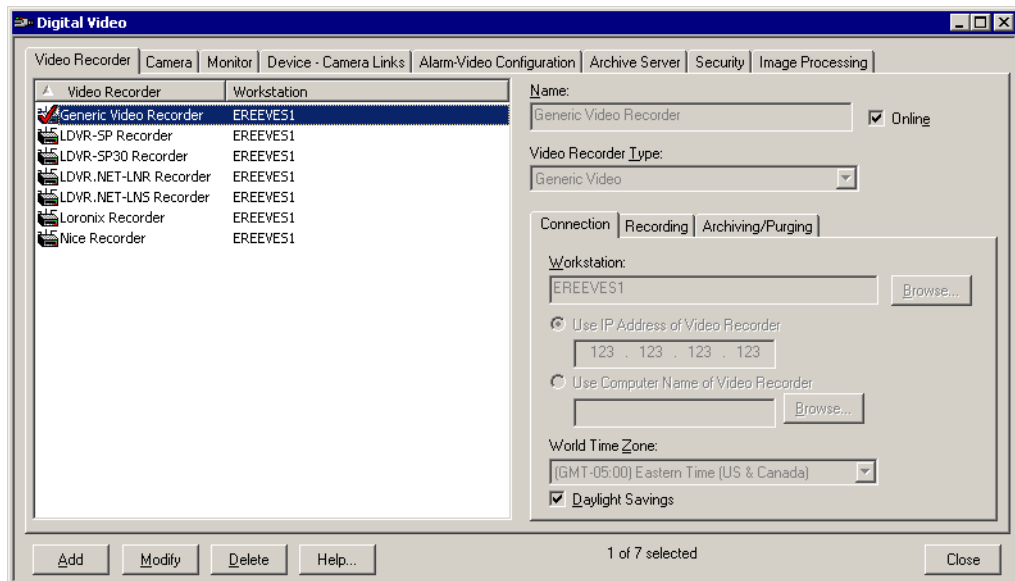
## Chapter 6: Configuring B.A.S.I.S. for Archiving

### *System Administration Configuration for Video Archiving*

#### Add a Video Recorder

After Windows 2000 has been installed, the archiving mechanism has been installed, and Remote Storage has been installed and configured, you are ready to configure video archiving in B.A.S.I.S. See the “Digital Video folder” chapter in the System Administration User Guide for more details. The general procedure is as follows:

1. Open System Administration.
2. Select **Digital Video** from the **Video** menu.
3. Add a video recorder. To do this:
  - a. Click on the **Video Recorder** tab. The following window will be displayed:

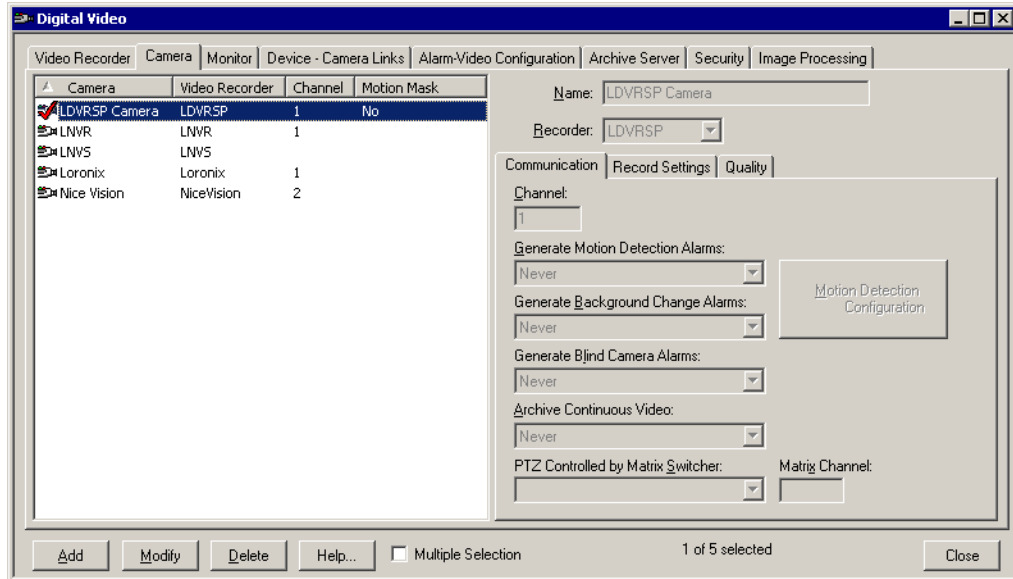


- b. Click [Add].
- c. In the **Name** field, type a unique, descriptive name for the video recorder.
- d. Select the **Video Recorder Type** from the drop-down list.
- e. Complete the Connection information section.
- f. Click [OK].

## Set Up the Cameras

Set up the cameras. To do this:

1. Click on the **Camera** tab. The following window will be displayed:



2. Click [Add].
3. In the **Name** field, type in a unique, descriptive title for the camera displayed on the video.
4. Complete the Communications section.
5. Complete the Record Settings section.
6. Complete the Quality section.

---

**Important:** If you choose to archive continuously, the **Motion Bit Rate** and the **NonMotion Bit Rate** must be 64 Kbps.

---

7. Click [OK].

## Set Up the Archive Server

To set up data storage:

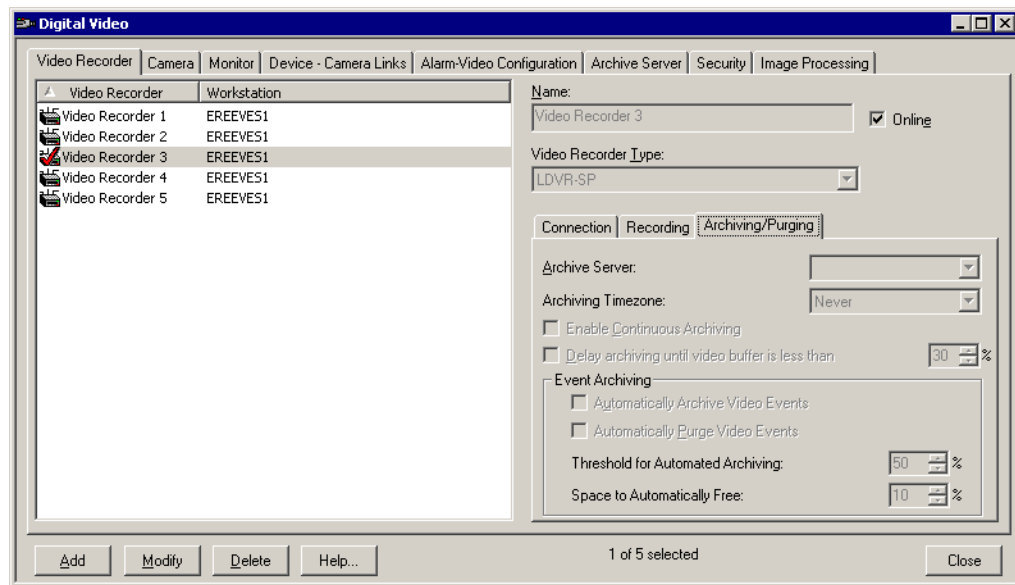
1. On the Archive Server tab, click [Add].
2. Type in the name of the workstation on which archived data will be stored.
3. From the list of shared folders, select the folder which will serve as the location for archived data. Use the arrow button(s) to move the selected folder under **Archived locations**.

**Note:** You may have to click [Refresh] in order to see the shared folders on a particular workstation. If nothing shows up on the list after doing so, go back to the workstation and verify that the folder has been defined as a shared folder.

4. Click [OK].

## Configure Archiving

1. On the Video Recorder tab, click on the Archiving/Purging sub-tab. The following window will be displayed:



2. Select the video recorder you wish to configure in the listing window.
3. Click [Modify].
4. Select the location for archived video. The options in the drop-down list are defined on the Archive Server tab. If this list is blank, go to the Archive Server tab and define this.
5. If you want an Event-based backup, complete the Event Archiving section. If you want a Continuous Backup, select the **Enable Continuous Archiving** checkbox.
6. Click [OK].

## Event-based Archiving

Event-based archives and continuous archives can be stored in different locations. The location must be a network drive/share. For example, you might choose to archive the event-based archives to

\\SERVER1\DSHARE\RSS\EVENTS and the continuous archives to

\\SERVER2\DSHARE\RSS\CONTINUOUS.

Event-based archiving issues:

- Events can be purged or archived. For this functionality, the Archive Server host should be running Windows 2000.
- The **Automatically Purge Video Events** checkbox should be selected when no tape device will be used. It deletes the **Space to Automatically Free** specified from the Video Archive Server when space is needed.
- The **Automatically Archive Video Events** checkbox should be selected when video events will be stored on a tape device.

---

# Configuration

---



## Chapter 7: Alarm Monitoring Configuration for Archiving

Alarms can have video associated with them. Events with video associated with them can also be traced.

### *Using the Archive Server*

Time synchronization is required for the use of Archive Server.

#### **Start the Archive Server**

In Windows 2000 on the Archive Server Host machine, click the Start button and navigate to **Programs > B.A.S.I.S. ET > Video Archive Server**.

The Archive Server will open as an application.

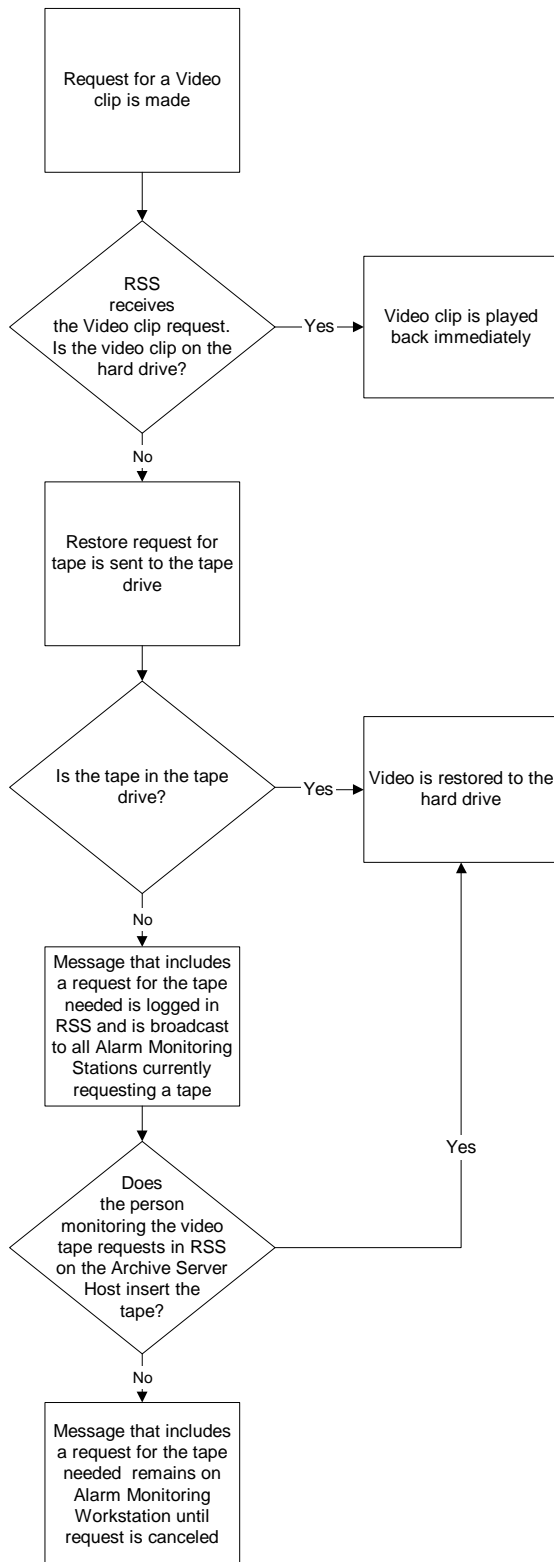
#### **Requests for Video**

When a request for video is received by Remote Storage, one of two things occurs. If the video requested is on the hard drive, it will be played back immediately. If the video requested is off the hard drive and has been archived, then a restore request is sent to the tape drive. The file will then be restored back to the hard drive. If the tape that contains the requested video is not in the tape drive, then a message is sent Remote Storage (and displayed in “Operator Requests” in the Remote Storage console) and to the Alarm Monitoring station specifying which tape must be inserted into the tape drive for the video to be restored from.

The message sent to the Alarm Monitoring station specifying which tape is needed is also broadcast to every other Alarm Monitoring station that is also requesting a tape that is not in the tape drive. This means that one Alarm Monitoring Station may receive a tape request message that was intended for another Alarm Monitoring station in addition to the message for the tape that they requested. For this reason, it is recommended that your tape drive have a tape capacity large enough that a tape never has to be taken out or put in after the initial setup.

See the Video File Request Process diagram on the following page for more information.

## Video File Request Process



## *Restore Archived Video from Offline Media*

When a restore request is made from Alarm Monitoring for a video clip that is on a tape which is no longer in the Qualstar Juke Box, the system will prompt the user to insert the tape. The user can either accept the request and inject the media back into the system, or cancel the restore operation.

When this action is cancelled, the actual “Operator Request” to put media back into the juke box is not deleted from the Operator Request Queue within the Remote Storage application running on the Archive Server. This operator request acts as a block, preventing any following restore requests for offline media. The request must be manually deleted from the queue.

---

**Note:** This only affects new requests for video clips that reside on offline media. Requests for video clips that are still on tapes within the system can still be successfully recalled.

---

### **Delete a Cancelled Operator Request from the Queue**

1. Open Microsoft Remote Storage on the Archive Server computer where the video restore request was made.
2. Expand “Removable Storage” in the system tree view in the left pane of the window.
3. Select the Operator Request from the expanded tree.
4. On the right side of the window (the list view), select the Restore Request that is listed.
5. Right-click on the request and choose the option **Refuse** from the pop-up menu. You can also select **Delete** from the pop-up menu.
6. The request will be removed from the list. Future restore requests for offline media will no longer be blocked.
7. Close the Microsoft Remote Storage application.



## Appendix A: Glossary of Terms

<b>A</b>	
AIT2	Advanced Intelligent Tape
Allocate	To reserve a resource, such as sufficient memory, for use by a program.
Archive	In video archiving, when the most recent files are kept on the video recorder (generally a couple of days), while older files are stored on tape.
<b>C</b>	
Continuous archiving	The Archive Server records video 24 hours a day, 7 days a week.
<b>D</b>	
Deallocate	To free previously allocated memory.
<b>E</b>	
Eject	To remove a tape from a tape jukebox
Event-based video archiving	The Archive Server records for a certain time span based on an alarm. This occurs only when an event triggers it to do so.
Event log	The Windows 2000 process of recording an audit entry in the audit trail whenever certain events occur, such as services starting and stopping, or users logging on and off and accessing resources.
<b>I</b>	
Inject	To insert a tape into a tape jukebox
<b>L</b>	
LAN	Local Area Network
Library	A data storage system, usually managed by Remote Storage. A library consists of removable media (such as tapes or disks) and a hardware device that can read from or write to the media.
LVD	Low Voltage Drive
<b>M</b>	
Managed volume	For Windows 2000, a local NTFS file system 5.0 volume whose disk space is managed by Remote Storage.
Media	Any fixed or removable object that stores computer data. Examples include hard disks, floppy disks, tapes, and compact discs.
Media pool	A logical collection of removable media that have the same management policies. Media pools are used by applications to control access to specific tapes or discs within libraries managed by Removable Storage. There are four media pools: Unrecognized, Import, Free, and application-specific. Each media pool can only hold either media or other media pools.
Mount	To place a removable tape or disk into a drive.
<b>P</b>	
Purge	After a specified period of time (or specified amount of disk space remains), the old video files are deleted.
<b>R</b>	

## A: Glossary of Terms

---

Remote storage	Remote Storage, a component of Windows 2000 that is used to control archiving
<b>U</b>	
Unmount	To remove a disk or tape from active use.
<b>V</b>	
VID	An extension for a file that the Nice server creates and saves video events to
VIX	The extension for a file that the Nice server creates, which contains information about the VID files
<b>W</b>	
WAN	Wide Area Network
Work queue	List of all library requests, or work items, initiated by an application.

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