

# PoINT Jukebox Manager

Version 4.1

## System Requirements

The following server and client system requirements refer to PoINT Jukebox Manager 4.1

### Server

The following sections describe the PoINT Jukebox Manager server requirements for read/write access to jukeboxes, changers and single drives. Write access includes "disc-at-once" recording as well as incremental recording.

#### CPU

Intel Pentium based system with at least 466 MHz.

If the sum of the transfer rates of all configured drives exceed 5 MB/sec an Intel Pentium system with higher performance is required according to the following table:

Total transfer rate up to	Intel Pentium
10 MB/sec	600 MHz
20 MB/sec	800 MHz
30 MB/sec	1.0 GHz
40 MB/sec	1.2 GHz
50 MB/sec	1.4 GHz
60 MB/sec	1.6 GHz

The table is related to systems equipped with EDO-RAM. If your system has SD-RAM or DDR-RAM the clock rates may be divided by 2 (SD-RAM) or 4 (DDR-RAM), respectively.

Please refer to your hardware specification to determine the transfer rates of the drives which are configured in your system.

#### Operating System

Windows NT 4.0 SP6 (Workstation or Server),  
Windows 2000 SP3 (Professional, Server, Advanced Server, Data Center),  
Windows XP Professional SP1 or  
Windows Server 2003

Server versions are recommended (see note below).

#### Note:

Windows NT 4.0 Workstation, Windows 2000 Professional and Windows XP Professional have some restrictions when used as a server for a networked environment limiting the performance of PoINT Jukebox Manager:

- The maximum number of simultaneous network connections is limited to 10. This restriction limits the number of clients which can access the PoINT Jukebox Manager server to 10 at a time.
- The maximum number of operating system threads for simultaneous network requests is restricted to 4. This limitation decreases PoINT Jukebox Manager performance for jukebox requests processed in parallel.

## Memory

Installed system memory should fulfil the requirements of the Microsoft Windows operating system. Additionally 64MB should be installed and furthermore 20MB per configured drive.

## Hard Disk

### Program Installation

100 MB free disk space is required for PoINT Jukebox Manager program files.

### Read & Directory Cache

Hard disk space is required to store the complete directory structure of all files and directories which will be managed by PoINT Jukebox Manager. The following formula is an estimation for the required space for the Directory Cache size if no Volume Sets are configured:

$$\text{Directory Cache Size} = (512 \text{ Bytes} * \text{NumDirs}) + (128 \text{ Bytes} * (\text{NumDirs} + \text{NumFiles}))$$

*<NumDirs> and <NumFiles> are the total number of files and directories stored in the jukebox.*

If Volume Sets are configured the result of the formula must be multiplied by 2 to calculate the required space.

Because PoINT Jukebox Manager requires one entry for the size of Read & Directory Cache the size for an optional Read Cache must be added to the calculated Directory Cache size.

### Write Cache

The required hard disk size for the optional Write Cache is at least the capacity of one complete optical disc. Recommended is to provide a write cache which is as large as the amount of data which will be written in one go.

### CD/DVD-R "Disc-At-Once" Recording

"Disk-at-once" recording is used for e.g. image recording, copying of CD/DVD media and ECR. For parallel "disc-at-once" recording with multiple CD/DVD-R drives the hard disks which store the images have to fulfil special requirements.

For parallel recording with multiple recorder drives a separate hard disk for CD/DVD images only is required. The free hard disk space must be at least 700 MB / 4,4 GB to store a CD/DVD image of full size.

The throughput requirements (see table below) are calculated for recorder drives with disabled Buffer Underrun Protection to get maximum performance. Enabled Buffer Underrun Protection allows to record CD/DVDs even if the data stream is multiply interrupted during recording. This allows to use slower hard disks as source devices.

CD Speed	Number of recorders	Hard disk Average Access Time, Min. Sequential throughput
CD 16X	1	15ms, 2900KB/sec.
CD 32X	1	15ms, 3700KB/sec.
CD 40X	1	15ms, 4800KB/sec.
CD 48X	1	15ms, 5800KB/sec.
CD 16X	2	15ms, 6000KB/sec.
CD 32X	2	12ms, 7900KB/sec.
CD 40X	2	12ms, 10500KB/sec.
CD 48X	2	12ms, 12700KB/sec.
CD 16X	4	15ms, 13200KB/sec.
CD 32X	4	12ms, 17500KB/sec.
CD 40X	4	12ms, 23800KB/sec.
CD 48X	4	12ms, 29800KB/sec.

DVD Speed	Number of recorders	Hard disk with Average Access Time, Min. Sequential throughput
DVD 2X	1	15ms, 3100KB/sec.
DVD 2X	2	15ms, 6600KB/sec.
DVD 2X	4	12ms, 14000KB/sec.

#### Notes:

- For parallel operation of more than four CD/DVD recorder drives at 12X/1X or above, RAID systems or hard disks with 10000 rpm or 15000 rpm and a short "full stroke" access time are recommend.
- In case that the hard disk is not exclusively used for "disc-at-once" recording (e.g. it contains the operating system), the specified throughput value shall be increased by 800KB/sec.
- In case that hard disks are connected to PIO (in contrast to DMA) mode host adapters (e.g. IDE controllers), the minimum sequential throughput shall be twice as high as specified, and the CPU speed shall be twice as high as specified. This requirement shall be seen in addition to the note(s) above.
- In case that a recording drive with CD speed over 8x or DVD speed over 1x is connected to a PIO (in contrast to DMA) mode host adapter (e.g. IDE controllers), the CPU speed shall be twice as high as specified. This requirement shall be seen in addition to the note(s) above.

## SCSI Configuration

### SCSI Adapter

The SCSI adapters connected to hard disks and optical drives shall be PCI bus-master adapters.

### SCSI Bus Configuration

Recorder drives (CD-R, DVD-R, DVD-RAM, MO) and other devices (CD/DVD reader drives, jukebox robotic) have to be connected to separate SCSI busses.

Multiple recording drives of the same type can be connected to the same bus. For some specific DVD-R drives a separate bus per drive is required. Please refer to the README file for the exact model names.

SCSI hard disks shall not be connected to the same SCSI bus as recorder drives.

In case of recorder drives which do not support Buffer Underrun Protection not more than 4 recorder drives shall be connected to one SCSI bus.

## Client

The client system requirements are:

To access the data stored in the jukeboxes, it is not necessary to install any client software. However, if you want to administer the Jukebox Manager service from a remote computer or if a user wants to use the off-line management or the recording features of PoINT Jukebox Manager, you need to install the client software on the remote machine which is integrated into the Windows network. The client requirements are:

### CPU

Intel Pentium based system

### Operating System

- Windows 95 or later
- Windows NT 4 SP6 or later
- Windows 2000 SP3 or later
- Windows XP Professional SP1 or later
- Windows Server 2003