

Infodraw MRS Server Requirements

Introduction

MRS Server is a TCP and UDP server that serves MRS device and monitor clients. Its most basic functionality and prime reason for its existence is to distribute video packets from cellular MRS client devices with limited bandwidth to a number of monitor clients observing the video streams. Other than that, the server is responsible to enforce access permissions by the monitors over the devices, based on the identifiers of the devices, user names and passwords. It is also capable of recording the streams from the devices, manually and automatically during special events. Common PC software usually comes with a manual asking for fixed minimal OS and hardware requirements from the user before installing the software. However, since this software is a server, serving an unknown number of clients and performing different operations by demand – streaming, recording, downloading, playback, etc, the minimal requirements vary and allow cheaper solutions where possible and extreme solutions where necessary.

Windows and Linux

The server comes as software only, a package for Windows and an alternative package for Linux. The main difference between the Windows package and the Linux package is that the Windows package comes with a self-installer program that can install itself automatically, where the Linux package must be manually installed (instructions are available). Other than that, the Windows service can upgrade itself upon a web request using the Web Administration User Interface's Software Updates section. The minimal requirements from the Windows OS is XP/2003. The minimal requirements from the Linux OS is LibC 6, LibStdC++ 6 and kernel 2.6.24.

Bandwidth

The bandwidth required from the server is one of the most important issues when selecting an MRS Server that should serve online streams from a number of devices. The bandwidth depends mainly on the bit rates of the streams that pass through from devices to monitors. Simply add the bit rate of the incoming streams from the devices to the down-link requirements, and separately add the bit rate of the outgoing streams to the monitors to the up-link requirements. For example, if there are 20 devices each sending one video-only stream of 500 kbps to 20 monitors, each monitor watching one stream of video from a single device, then you need a symmetric bandwidth of 10 Mbps. To calculate the monthly traffic based on 24/7 take the 20 Mbps (10 up + 10 down) and multiple it by 60*60*24*30 (2592000), reaching a total of 6.48 TB.

Memory

Less important than bandwidth, memory size, if used accordingly in the server configuration (see Resource Limits page in the Server Administration UI document), will determine the quality of service that the server gives its monitors during times when there are communication problems such as large delays and packet loss. RAM compensates for these problems and makes the outcome better for the viewers. Other than that, more memory is also required when using secure connections. It is difficult to guess how much memory will be required, so to keep it simple, let's allow 1-4 GBs for the OS (depending which one) and about 2 MBs for each client, either device or monitor and 2 MBs for each video stream. For the example above of 20 devices each sending one video-only stream of 500 kbps to 20 monitors and the server using Windows XP, we will calculate 1 GB for XP, 80 MBs for the clients and 40 MBs for the streams, total of 1120 MBs, so 2 GBs of RAM will be more than enough.

CPU and cores

These days, the main difference between the different server processors is the number of cores. The greater number of cores you have, more actions can be performed in parallel. The MRS Server can work on any x86 or x64 CPU with any number of cores, but if it has many tasks to perform, it will help to have more cores. Usually the MRS Server does not work hard, so 2 cores will usually be enough, but under special conditions, such as over 100 connections, over 30 secure connections, or heavy recording on the server one should consider 4 cores.

Storage

If the server records client streams, consider using a fast and large storage device. How fast? It depends on the total recorded bit rate. For 10 Mbps recording, almost any regular SATA HDD would be good enough. How large? It depends on how much needs to be stored. If one needs to store a month back of 20 devices with 500 kbps streams around the clock, then you need a storage capacity of $20 \times 500 \times 1000 / 8 \times 60 \times 60 \times 24 \times 30 = 3.24$ TB.