

DIRECWAY® MultiCasting System

Reliable and accurate delivery of digital packages

HUGHES
NETWORK SYSTEMS

DiDIRECWAY®

The DIRECWAY® MultiCasting System from Hughes Network Systems (HNS) is an HNS-designed software product that provides a convenient, quick and accurate mechanism to multicast digital packages. The MCS provides a value-added service for ISPs, content providers and distributors that gives them a "first-to-market" advantage with a new and creative service.

The MCS product is designed as an IP-based standalone software package. Thus, it can be used in any networking environment, as well as integrated with the DIRECWAY family of broadband satellite products developed by HNS or with satellite terminal products developed by other manufacturers. The MCS takes advantage of the broadcast nature of satellite communications to greatly reduce the cost of receiving, in parallel, digital packages by all sites. The MCS Web-based user interface simplifies the process of creating and scheduling packages for delivery. It also monitors and verifies the package delivery process.

How Does MCS Work?

The provider of the information sends a package to the directory at the MCS sender. The MCS sender stores the package until it is ready to be broadcast to designated clients or MCS receivers. The information provider specifies the list of recipients and the time to submit the package. The MCS sender transmits the package to all MCS receivers simultaneously. Every package is delivered to the hard disk of the MCS receiver. Each MCS receiver confirms to the MCS sender that the package was received successfully. Upon confirmation of delivery to all recipients, the MCS sender sends the status report to the information provider's e-mail address.

MCS Features

- IP unicast and IP multicast supported
- Simultaneous transmission
- Auto scheduling
- Transmission rate control (10 kbps up to 9 Mbps)
- Package prioritization
- Auto-retransmission of lost packets
- Delivery confirmation, logs, and e-mail status reports
- Post-processing executable support
- Forward-error correction for one-way transmission
- GUI Web-based and command-line administrative user interfaces
- Package management, Simple Network Management Protocol (SNMP), and File Transfer Protocol (FTP) support

- Hot standby for high-availability networks
- Flexibility, as the MCS can be ported to a variety of platforms
- Application programmable interface (API) for integration with other applications
- Optional auto-rebroadcasts
- Optional use of signatures for highest security

MCS Offers

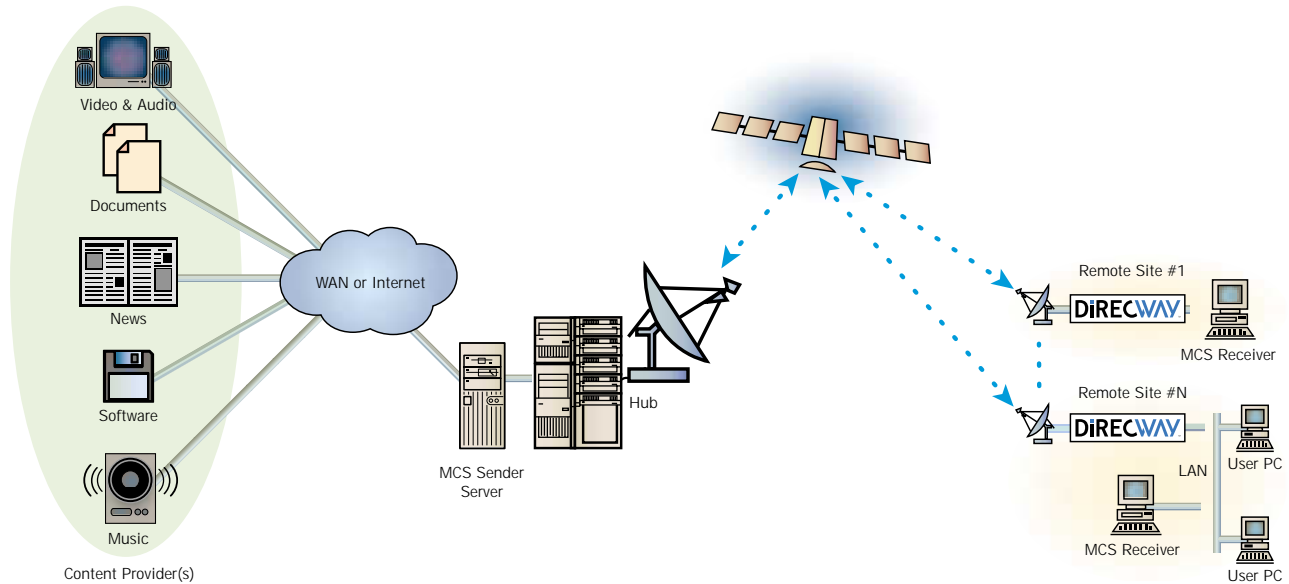
- Increased productivity
- Reliable and accurate package transmission
- Delivery assurance
- Reduced time and costs of using the telecommunication equipment, space segment, etc.
- Easy to use, deploy, manage, and support
- Comprehensive security features to protect the customer's sensitive business data
- Scalable to an unlimited number of recipients with no increase in bandwidth or time

Applications List

- Electronic software distribution
- Database replication
- Corporate presentations, literature, and demos
- Transmission of critical information to field offices
- Distribution of multimedia information to local servers
- Replication of Web servers to the edges of networks for improved performance
- Web site mirroring and precaching
- Radio, TV, and print advertising
- News stories, images, and video clips
- Medical imaging files and video
- Real estate images and 3-D walkthrough
- Weather images and radar screen animations
- Mapping and geodesic information



MCS Implementation via a Hughes Network Systems
Broadband Satellite Network



Highlights and Technical Specifications

Minimum MCS sender requirements:

- Pentium III class processor, 500 MHz
- 256 MB memory
- 30 GB hard drive
- 10/100BaseT Ethernet adapter

MCS sender software requirements:

- Microsoft Windows 2000 Professional
- Oracle 8i Standard Edition
- Microsoft Internet Information Server (IIS) 5.0 or higher (free with Win2000)
- ColdFusion Professional 4.5 or higher

Minimum MCS receiver requirements:

- Pentium II class processor, 266 MHz
- 128 MB memory
- 10 GB hard disk drive
- 10/100BaseT Ethernet adapter

MCS Receiver software requirements:

- Microsoft Windows 95/98/2000/Win NT4.0 (with service pack 5.0 or greater)

Terminology

MCS sender is a PC that acts as a server and is located at the headquarters or at the hub.

MCS receiver is a PC connected to a VSAT or another type of transport mechanism.

Package represents a binary stream file containing data or application software. One package can deliver multiple archived files simultaneously.