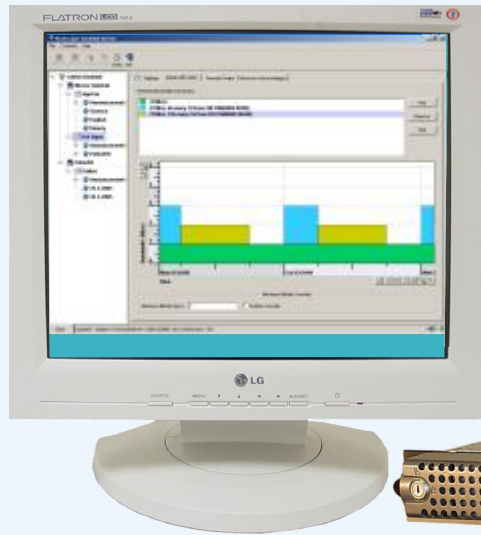


*SkyScraper*TM 3.0



**The Versatile
Content Distribution
System**

triveni
DIGITAL®

Highly Efficient Content Distribution

The SkyScraper™ system from Triveni Digital is a highly convenient and efficient platform for content distribution via any digital broadcast medium—satellite, digital cable, digital terrestrial TV, IP multicast, etc.—with point-to-point supplementary delivery as needed.

Realize the benefits of highly efficient content distribution:

- **Corporations:** Distribute digital content of all types efficiently to your branch offices/stores, customers, partners, etc., for training, advertising, and many other purposes.
- **TV Networks and Station Groups:** Use your satellite link to distribute ads and programming in file form to your affiliate or member stations, reducing costs and ensuring quality and consistency.
- **Public TV Stations:** Use excess DTV bandwidth to generate new revenues and enhance your public image by efficient delivery of multimedia content for education, homeland security and other public services.

Applications

The SkyScraper™ system can deliver rich, digital media content to large numbers of receivers, obviating the need for expensive, high-bandwidth Internet connections. This enables such sustainable applications as ...

Dynamic Digital Signage

Frequently updated, high-impact, multimedia material and associated indexes and playlists can be distributed easily to large numbers of in-store video screens, tourist kiosks, billboards, and other types of digital signs.

Homeland Security

Disaster alerts and other emergency relief information can be distributed quickly and reliably to local police and fire stations, hospitals and other first responders. Receiver targeting and encryption can protect sensitive information, limiting access to authorized recipients.

Education and Training

All types of educational materials, including live lectures, can be delivered conveniently and economically to schools, training centers, and even home computers, giving students and teachers top quality support for both self-paced and interactive learning.

Video/DVD on Demand

Satellite and terrestrial broadcasters can offer access on-demand to videos, music, DVDs, etc., on a subscription or pay-per-view basis, using a cost efficient push-and-store model of delivery to disks on set-top boxes.

Software Download Service

Broadcasters and cable operators can offer consumer electronics manufacturers a software download service for updating their DTV receiver software, based on the ATSC, DVB, or SCTE software download specifications.

SkyScraper™ 3.0

HIGHLIGHTS

- Delivers any type of digital content, including files, streaming media, and arbitrary IP packets
- Assures reliable delivery with forward error correction and receiver acknowledgements
- Controls content delivery via optional receiver targeting
- Provides security and privacy through optional encryption
- Supports automated content delivery with “Express folders”
- Facilitates content delivery in multi-transmitter networks via multi-transport stream scheduling
- Facilitates future growth with extensible, scalable architecture
- Supports ATSC and DVB data broadcast standards
- Has built-in encapsulation of files into IP packets, and IP packets into MPEG-2 packets
- Facilitates custom extensions by being standards-based
- Provides XML/IP-based remote scheduling interface for external applications
- Interoperates with all major encoders, multiplexers, and IP encapsulators
- Allows managers of broadcast pipes to:
 - Manage and monitor broadcast bandwidth
 - Support multiple content providers
- Allows managers of content to:
 - Control content scheduling within bandwidth allocations
 - Collect and re-use content from diverse sources

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Features

Versatile Architecture Makes Future Growth Easy

The SkyScrapper™ system provides a highly flexible, end-to-end environment for content distribution applications, using broadcast/multicast content transmission standards such as ATSC, DVB and IP.

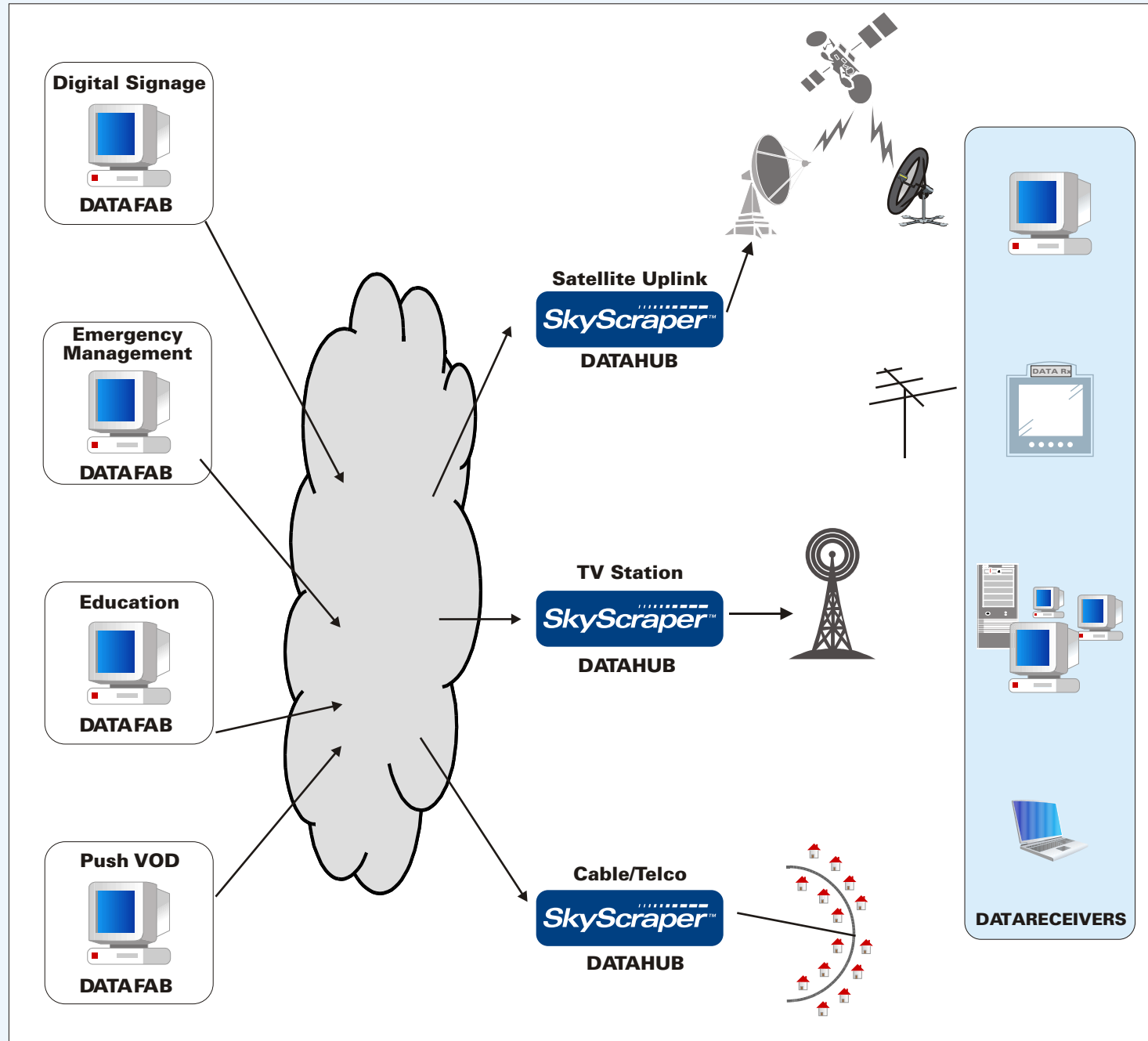
The system comprises three modular components:

DataHub — used by managers of the transmission pipe to allocate bandwidth among multiple content providers, insert content into broadcast stream, and monitor/report bandwidth usage.

DataFab — used by managers of content to organize content, set up distribution schedules, and target content to receivers.

DataReceiver — used to extract content from broadcast stream and make it available to end-users.

An optional Application Constructor toolkit is also available.



The SkyScrapper™ system's open, scalable and extensible architecture can accommodate today's content distribution needs, while providing a path for future expansion.

Features

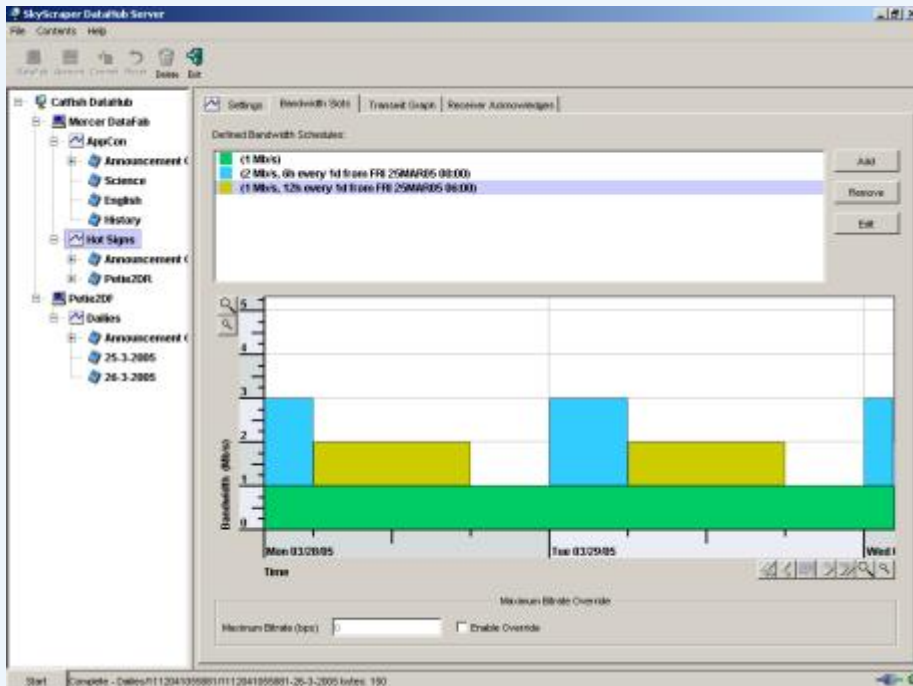
DataHub Simplifies Bandwidth Control

The DataHub's primary functions are:

- Allocate bandwidth among multiple content providers by date and time
- Receive content flow schedules from DataFabs
- Retrieve content items from source locations and insert them into broadcast streams according to schedules
- Monitor and report bandwidth usage

To do this the DataHub:

- Provides easy-to-use, local and remote user interfaces
- Interoperates with all major multiplexers and IP encapsulators
- Encapsulates files into IP packets, and encapsulates IP packets into MPEG-2 packets
- Supports opportunistic and guaranteed content insertion



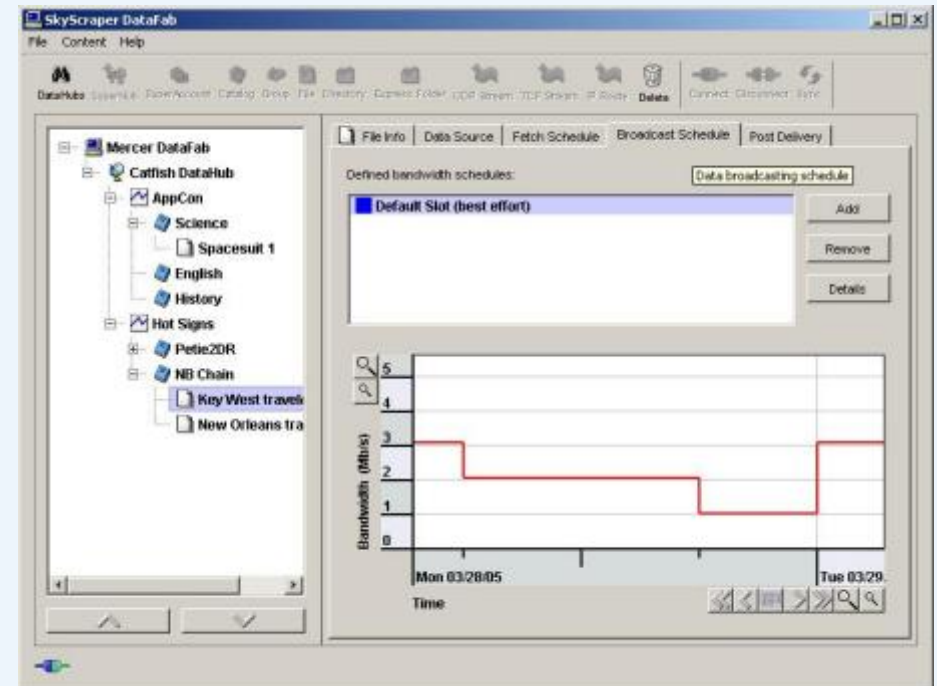
The DataHub allows the managers of the broadcast pipes to allocate bandwidth to content providers by day and time, without worrying about the scheduling details of individual content items.

DataFab Simplifies Content Flow Management

The DataFab aggregates and structures content to be distributed, thereby fabricating the content framework for end-users.

To do this the DataFab:

- Runs on a computer with a TCP/IP link to companion DataHubs
- Provides an easy-to-use graphical user interface (GUI) for identifying content items to be distributed (by URLs), and defining broadcast schedules and optionally target receivers for them
- Can schedule content conveniently to be distributed through multiple DataHubs, independently or concurrently
- Can monitor content receipt acknowledgements from receivers



The DataFab allows content providers to easily aggregate, organize, schedule and target content for distribution.

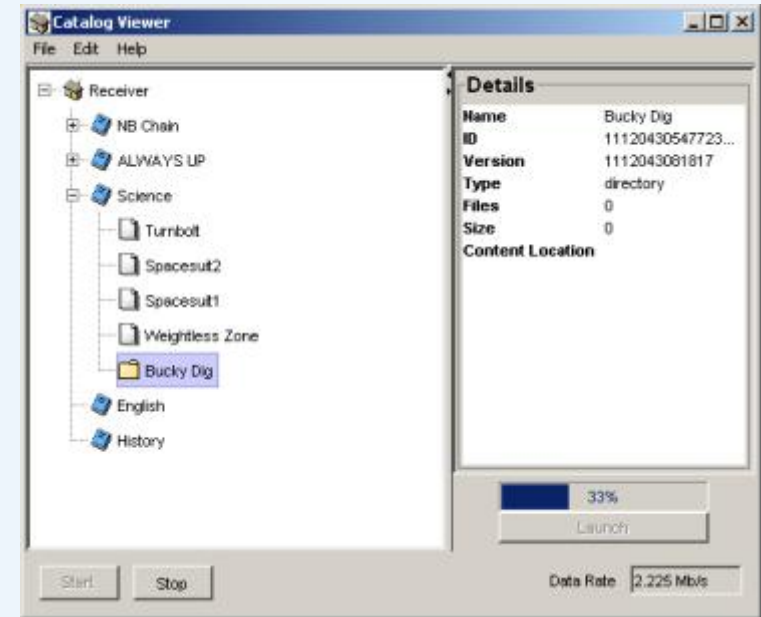
Features

DataReceiver Extracts Content from Broadcasts

The DataReceiver extracts content from a digital broadcast stream directly to an end-user's computer or a network file server.

To facilitate content reception and management, a DataReceiver:

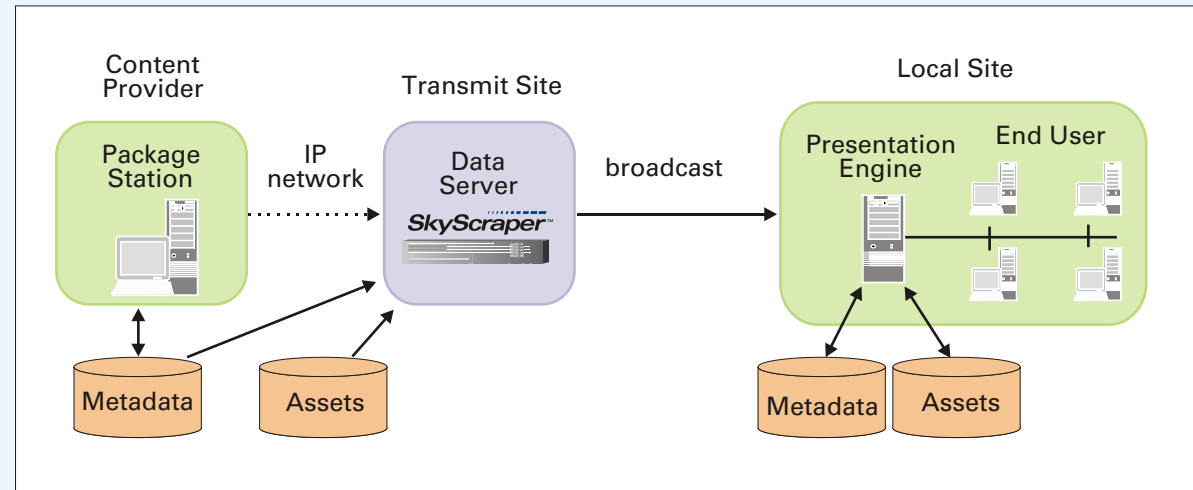
- Presents a directory of extracted content in an easy-to-navigate graphical user interface (GUI)
- Supports the receiver targeting function
- Applies decryption and forward error correction as needed
- Can auto-launch content on arrival, including software updates
- Provides filtering and cache management tools
- Can send content reception status back to DataHubs and DataFabs, if a back channel is available (such as an Internet link or dial-up line)



The DataReceiver's Catalog Viewer provides local tools for managing and monitoring the extraction of content from the broadcast stream.

Application Constructor Toolkit Provides Web-based Interface to Distributed Content

The optional SkyScraper™ Application Constructor toolkit uses the underlying SkyScraper™ content distribution system to deliver content to end-users at local sites and automatically provides a web-based interface for these end-users to access the content. This toolkit allows easy creation of customized content packaging, with metadata information surrounding the content. This metadata is not only displayed to end-users, but also provides searching capability. In this way, Application Constructor addresses a wide variety of content distribution needs and customer segments.



Technical Specifications

SkyScraper Systems

The SkyScraper system is available in three basic configurations:

- Datacasting System - broadcasts files and UDP streams (such as IP multicast media streams)
- DTV Router System - broadcasts all types of IP traffic
- Combination System - broadcasts files and all types of IP traffic

All configurations include DataHub hardware and software, plus DataFab and DataReceiver software licenses.

DataFab

The SkyScraper DataFab software runs on a computer with the following minimum requirements:

Operating System	Windows® 2000/XP
RAM	256 MB
Interface with DataHub	TCP/IP Network Interface

DataReceiver

The SkyScraper DataReceiver software runs on a computer with the following minimum requirements:

Operating System	Windows® 2000/XP
RAM	256 MB
DTV receiver adapter	Several supported
TCP/IP (only needed if using Acknowledgment)	10/100-BaseT Ethernet RJ-45

Turnkey DataReceiver systems are available in a range of standard and custom configurations.

Triveni Digital also offers PC-based DTV receiver adapters from leading vendors for installation into computers meeting the above specifications. Both PCI and USB configurations are available.

DataHub

The SkyScraper DataHub is delivered as a complete rackmount unit with the following characteristics:

Operating System	Windows® 2000 Professional
Physical	
Rack space	1RU
Dimensions: Height	1.75" x 17" x 30.1" (4.4 x 43.2 x 75.3 cm)
Weight	Approx. 37 lbs (16.7 kg)
AC Power Input	250 W @ 115/230 VAC, 50/60 Hz

Standard Interfaces

TCP/IP	10/100/1000-BaseT Ethernet RJ-45
Video	SVGA 15-pin D
Mouse, Keyboard	PS/2 connectors
DVB ASI output or 2 nd TCP/IP port	75 BNC or 10/100/1000-BaseT Ethernet RJ-45

Options

- Receiver acknowledgment service
- SMPTE Time Code input interface
- Application Constructor toolkit
- Dual power supply for DataHub
- Raid Level-1 disk for DataHub



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