Television facilities worldwide are moving to IP, and customers are looking to implement the most effective COTS-based SMPTE ST 2110 live production systems. Imagine Communications' Selenio Network Processor and Magellan Control System combined with Cisco's IP Fabric for Media (IPFM) and Cisco's Nexus Dashboard Fabric Controller (NDFC) provide customers a reliable foundation when making their move to IP.

Cisco NDFC provides a single point of management, streamlined automation, comprehensive monitoring, and visibility, for IP Fabric for Media (IPFM) deployments, supporting functions formerly done through the Data Center Network Manager (DCNM).

Even while the underlying technology is modernized, television production infrastructure still must perform its basic mission – connecting signals around the plant – through the time-tested routing system paradigm. The key is to provide a system that is easy to operate and fully featured; capable of routing signals from any source to any destination; with the flexibility to support small to very large IP routing systems – supporting the customer's needs today and tomorrow. To achieve these requirements, Cisco's Nexus 9000 Series Switches deliver industry leading infrastructure for building out secure, flexible, and scalable IP-based networks. Cisco's Nexus 9000 platforms support high density and bandwidth capacities – link speeds up to 400G and 800G -- enabling future-proofed IP routing systems for even the largest media environments.

IP Multicast Routing is a fundamental part of IP production systems, and managing bandwidth in the control system is important. The objective of most projects is a fully non-blocking infrastructure – and moving to UHD expands the signal bandwidth even further by 4x and can saturate spine/leaf linkages without careful design and management. Modern IP networks give customers the headroom to make the transition to UHD at their pace and provide the necessary tools to manage the links and bandwidths, even in situations of limited spine/leaf trunk bandwidth. IP systems also make it easy to change configurations for different events – UHD one day, 1080p the next – on a consistent network footprint.

Protocol Independent Multicast (PIM) is the default method for multicast routing across networks. Cisco's IP Fabric for Media goes a step further by fully enabling Non-Blocking Multicast (NBM), bringing bandwidth intelligence to the network to prevent oversubscription—a significant challenge faced by media customers today. The Magellan Control System, in conjunction with Cisco's NBM active mode, facilitates secure, end-to-end bandwidth efficiency, with the network orchestrating non-blocking paths based on the broadcast

controller's intent. NDFC provides the key linkages for the broadcast controller to configure and manage the NBM pathways and policies.

Interoperability is key to integrating the best technologies from each vendor, offering operators a choice of cameras, switchers, replay systems, multiviewers, and other critical technologies, including IP fabric infrastructure. Both Imagine and Cisco solutions provide a high degree of cross-vendor interoperability, facilitating seamless integration with critical technologies. Imagine and Cisco work seamlessly together to deploy cutting-edge IP systems in television projects worldwide.

Magellan Control System - Bandwidth Management with Cisco NDFC:

- Magellan Control System is fully integrated with Cisco NDFC, including leveraging the seamless backup and restore, migration process.

- Magellan Control System creates "Flow Policies" in NDFC that inform NDFC of the bandwidth value associated with each multicast address. Magellan also creates "Flow Aliases" in NDFC in order to associate production names to each multicast flow – critical for system utility.

- With Cisco's Non-Blocking Multicast (NBM) active mode, the network performs flow orchestration with bandwidth awareness on every signal switching event.

- Cisco NDFC also provides management, visibility, and monitoring for media fabrics.

- Routing operations are performed in parallel on "A" and "B" networks in 2022-7 hitless configurations – for full 1+1 redundancy along the way from end to end.
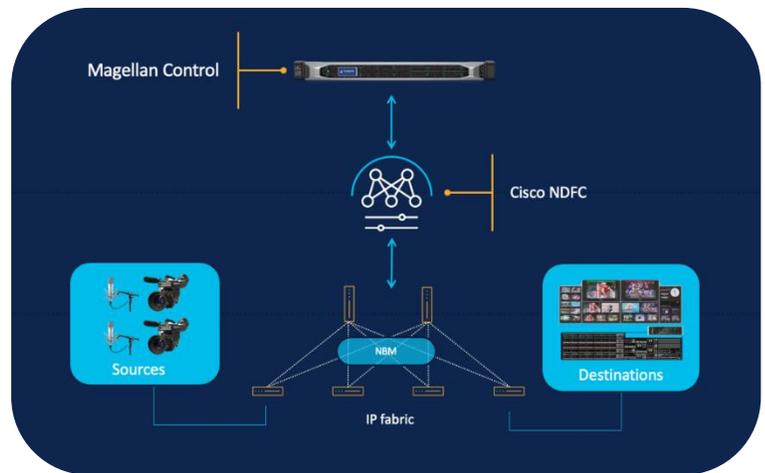
Imagine and Cisco – Some Customer Success Stories:

About Imagine Communications:

[Imagine Communications](#) empowers the media and entertainment industry through transformative innovation. Broadcasters, networks, video service providers and enterprises around the world rely on our optimized, future-proof, multiscreen video, and revenue enablement solutions every day to support their mission-critical operations. Today, nearly half of the world's video channels traverse our products, and our software solutions drive close to a third of global ad revenue. Through continuous innovation, we are delivering the most advanced IP, cloud-enabled, software-defined network and workflow solutions in the industry.

About Cisco Systems, Inc:

[Cisco Systems, Inc.](#) is the worldwide leader in networking for the Internet. Cisco's Internet Protocol-based (IP) networking solutions are the foundation of the Internet and most corporate, education, and government networks around the world. Cisco creates leading products and key technologies to make the Internet more useful and dynamic. These technologies include: advanced routing and switching, voice and video over IP, optical networking, wireless, storage networking, security, broadband, and content networking.