

HughesON™



Don't Let Your Network
Slow Down Your Business

HUGHES[®]
An EchoStar Company

Power Your Business with HughesON

In today's tough economy, organizations are constantly looking for ways to gain a competitive advantage by delivering compelling new services, enhancing the customer experience, training and retaining good employees, and maximizing overall network performance and operational efficiency. Delivering these advantages can be especially challenging for business with many branches like retail, hospitality, food service, retail petroleum, energy, and network operators. Don't let your network hold you back from achieving these goals—Power Your Business with HughesON™.

Welcome to HughesON Managed Solutions—a next-generation portfolio of network and digital media solutions designed to meet the unique needs of the

Powering Your Business



distributed enterprise. From high-capacity access to high-availability networks, from digital signage to employee communications and training, from managed security to managed WiFi and voice, HughesON enables you to cost-effectively delight your customers, engage your employees, and streamline your business operations.

With the HughesON portfolio of network and digital media solutions, you can do more with less, leverage your existing networking infrastructure for greater performance and capabilities, and affordably improve your competitive position by deploying the latest applications—ultimately transforming your network into an essential asset to serve your business. **What benefits can HughesON deliver for your business?**

HughesON is...





HughesON is
HIGH-CAPACITY



Deliver Your Applications Faster

Get higher network performance and increased bandwidth for all your nationwide business locations—at a lower price point. Hughes High-Capacity Access™ delivers a cost-effective, nationally available high-speed service, scalable up to 12 Mbps. Hughes High-Capacity Access solves a major cost and complexity issue for companies whose business applications have outstripped the bandwidth capacity at their branch locations. Hughes High-Capacity Access is faster than T1 and less costly and more widely available than Ethernet.

Hughes ActiveBonding

In cases where a single broadband connection is not sufficient, Hughes can intelligently combine multiple broadband links, using its Hughes ActiveBonding™ Technology. Hughes ActiveBonding takes into account the inherent performance variability of best-efforts broadband connections. It actively monitors the performance of multiple links, and intelligently bonds them together into one homogeneous, high-capacity connection that allows each application access to the full capacity. The result is up to eight times more bandwidth than T1 access at similar price points, and up to one-third less than the typical cost of Ethernet solutions.



CUSTOMER SNAPSHOT

High-capacity Everywhere

A growing retail petroleum company deployed Hughes High-Capacity Access to deliver cost-effective access up to 6 Mbps to all their hundreds of locations throughout the US.



HughesON is
TECHNOLOGY



Deliver Your Applications Smarter

How does Hughes transform best-efforts broadband into an enterprise-grade WAN?

Hughes has been a pioneer in performance optimization technology since the early days of satellite networking in the mid-80's, and today its suite of Active Technologies continues to advance the state-of-the-art in WAN optimization of both terrestrial and satellite networks for distributed enterprises in all vertical sectors.

Hughes ActiveQoS

Hughes ActiveQoS™ network optimization technology delivers better performance over affordable DSL and cable broadband connections. Using sophisticated edge intelligence, ActiveQoS adapts to traffic demands, automatically classifying traffic flows in real-time through our **Hughes SmartC™** technology. The result—ActiveQoS ensures your real-time, latency-sensitive applications get through no matter what data is present. As a result, applications like POS, voice, or Citrix remote desktop run with minimal packet loss and jitter, even in split-tunnel configurations for cloud services and Guest WiFi.

Hughes ActiveCompression

Hughes ActiveCompression™ technology dramatically increases the 'virtual' bandwidth available at your branch locations, improving performance without incurring the expense of increasing the access link speed. The technology employs an innovative two-step compression algorithm for optimum compression gain. In real time, ActiveCompression adaptively determines the combination of the two algorithms that provides the best overall compression.



Best of Breed Technology



As an engineering company, Hughes prides itself on its innovative technology and continues this tradition by partnering with other technology leaders to provide the broadest breadth of managed solutions possible. Keenly focused on the needs of the distributed enterprise, Hughes has selected and uniquely integrated technology from companies such as: Aruba Networks for WiFi, Fortinet for security, and Scala for digital signage.

Hughes HS1200 Broadband Optimization Appliance

Don't want to replace your existing branch router, yet still want the advantages of Hughes ActiveQoS and ActiveCompression? No problem. The HS1200 works in tandem with your existing Fortinet or Cisco router, delivering end-to-end QoS coupled with advanced compression over your primary or secondary broadband network.



Hughes HR4000 Family of Branch Gateways

The Hughes HR4000 family of Branch Gateways combines Hughes performance optimization technology with best-in-class, enterprise-grade security and routing from Fortinet in an easy-to-deploy unified platform managed by Hughes. Unlike the HS1200 appliance, the Branch Gateway acts as the router in addition to providing WAN performance optimization benefits.

HR4400 Branch Gateway

Ideal for smaller branch requirements such as franchises and retail petroleum applications, the HR4400 Branch Gateway delivers advanced threat protection, including next-generation firewall, intrusion prevention, VPN, and Web filtering.





HughesON is Technology

HR4700 Branch Gateway

Designed for larger, more complex branch requirements, the HR4700 Branch Gateway offers the 4400's functionality, plus additional ports, throughput, and security features as well as the VDOM (Virtual Domain) feature. With VDOMs, Hughes can virtualize the 4700 into separate unique instances depending upon the needs of the customer for better, more robust security. VDOMs allow HR4700 management to be shared between Hughes and your IT department, enabling IT to retain control of strategic functions if desired.



HughesON Managed WiFi Solutions

Traditional in-store WiFi network implementations can hobble critical business traffic such as PoS transactions and VoIP conversations when sharing the same WiFi network with unpredictable guest WiFi traffic. With HughesON, you get a powerful WiFi network with the following benefits:

- Superior guest WiFi and business networking combined into a single solution
- End-to-end priority for business applications
- Great WiFi performance for shoppers, even during peak shopping periods
- Greater than four times improvement in bandwidth and performance
- Installed, protected, and managed by Hughes

HughesON In-store Mobility™ Solutions

Working with Aruba Networks, Hughes has combined its ActiveQoS to work in tandem with Arubas' wireless LAN priority scheme. As a result, customers can enjoy end-to-end QoS over both the wide-area network (WAN) and branch Wireless LAN (WLAN). Now critical applications such as Mobile POS and Assisted Selling get the end-to-end priority they need over less critical applications such as Guest WiFi.

HughesON Voice Solutions

Hughes offers the industry's first managed Voice-over-IP (VoIP) solution that provides toll-quality voice communications over affordable best-efforts broadband networks. ActiveQoS solves traditional VoIP performance problems, ensuring latency-sensitive voice calls get through with minimal packet loss and jitter, no matter what data traffic may be congesting the network. Depending upon the quality requirements of the customer, HughesON Voice™ Solutions can be configured with or without Hughes ActiveQoS technology.



CUSTOMER SNAPSHOT

High-quality Voice Without Costly Upgrades

A fast-growing, California-based wine, spirits, beer, and gourmet food store enjoys toll-quality voice calls over affordable broadband using Hughes Enterprise VoIP with ActiveQoS. The retailer saves upwards of \$70 per month per store and benefits from a single, consolidated bill.

Hughes Enterprise VoIP™ Service offers large enterprises a turnkey solution that allows you to:

- Enjoy toll-quality voice over the same cost-effective broadband network carrying your data
- Reduce overhead costs without replacing existing technology
- Enhance the customer and workforce experience with advanced voice features
- Improve store efficiency with flexible call routing



HughesON is
SECURITY



HughesON Managed Security Solutions

Delivering security with performance, Hughes Managed Security™ Solutions help protect your network, your data, and your reputation. Hughes can help secure your enterprise in vital ways—from achieving a PCI-compliant network, to providing monitoring and support.

HughesON Managed Security offerings are tiered to suit your needs, with each level building upon the previous one.



Standard Security

Hughes Standard Security provides the underlying networking infrastructure you need to become PCI-compliant, including next-generation firewall capabilities, VLANs, split-tunneling, and VPN.



Standard Security with Content Filtering

This option adds category-based Content Filtering to Hughes Standard Security, so that you can filter sites using whitelists and backlists to limit where employees and/or customers can visit. For example, you can designate non-work-related Websites as off-limits, while still providing access to the sites required to run your business. Automatic reports are generated showing the top sites that are accessed and denied.



Enhanced Security

Hughes Enhanced Security adds Intrusion Detection, Anti-Virus, and Anti-Malware protection to Hughes Standard Security with Content Filtering. These services, combined with Automated Security Reports, enable you to monitor your security situation with confidence.

CUSTOMER SNAPSHOT

Protecting Customers and the Business

The largest plumbing distributor in the U.S. employs Hughes Enhanced Security Service to secure customer privacy and store data. And recently they have added Hughes Guest WiFi to enhance the showroom shopping experience.

Hughes Security Operations Centers (SOC)

To better serve our customers, Hughes has invested in a Security Operations Centers (SOC) capability. As part of the Hughes' Network Operations Center, Hughes has brought on experienced security professionals armed with state-of-the-art network security technology to help customers better secure their networks as well as their customer's data.

The SOC provides back-end support to the HR4000 Series Branch Gateway—the key delivery component of Hughes comprehensive suite of Managed Security Solutions. The Branch Gateway, running Fortinet's FortiOS5, enables the SOC to provide Next Generation Firewall (NGF) and United Threat Management (UTM) security services for Hughes' enterprise customers.

Security is hard and getting more difficult every day, especially when there are many branch locations to lock down. Now, with the Hughes SOC, distributed enterprises can enjoy the peace of mind of knowing they have a reliable, experienced partner with the required technical expertise to help secure their network.





HughesON is
RELIABILITY



Hughes High-Availability Networking

Downtime is the enemy of your enterprise network. You need a way to keep critical business applications online at a reasonable price. Hughes High-Availability Networking™ combines the best of wireless and wireline technologies, providing multi-broadband diverse connections into your branch to deliver an integrated, fully-managed network with unmatched reliability and performance. In addition to guarding against primary network outages, the secondary connection can also be used in a ‘co-primary’ configuration for less critical applications and in some cases, for the delivery of high-bandwidth rich-media content, such as digital signage, especially if the second connection is a multi-cast satellite network.

CUSTOMER SNAPSHOT

Making Downtime a Thing of the Past

A big-box wholesaler uses Hughes High-Availability Networking™ to provide critical backup to its stores. Since outages are so costly, the company uses multiple landlines as well as diverse wireless connections to back up their MPLS/T1 network.



HughesON is
VIDEO



Unleash the power of video to engage customers and employees when and where it matters most.

Strong business communications can open the door to lower employee turnover, improved customer experiences, and a consistent brand message. All of these will help increase revenue and create customer loyalty. Business leaders across all market segments are asking how they can deploy video in an effective and cost-efficient manner. HughesON Digital Media™ Solutions provide proven, innovative, turnkey managed services from a trusted service provider. A managed service from Hughes means a worry-free, lower total cost of ownership experience.

CUSTOMER SNAPSHOT

Engage Customers and Keep Them Coming Back

The country's largest independent retailer of fine wines utilizes Hughes MediaSignage to engage and educate customers using a high-quality video experience that sells more wine and creates customers for life.



The anatomy of a digital media solution

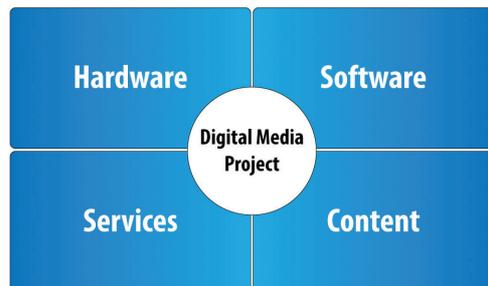
Hughes recognizes that a digital media solution requires much more than simply hanging an LCD monitor on the wall and displaying a loop of slides. At Hughes there is an understanding of the psychology involved in getting a message viewed and having the viewer retain what they saw. The use of visual media is a combination of message and method to get maximum value from the investment. There are four primary components of a digital media project.

Hardware

No matter what operating system is preferred, the choice of hardware is critical; uptime, reliability, serviceability, life span, and more are important details to consider.

The two primary pieces of hardware that need to be reviewed are the player and the monitor. What is the environment, what is the daily use pattern, and what are the necessary routine maintenance requirements for the hardware? Also,

there is the management side to consider; what are the server requirements, what are the network bandwidth requirements, what is the usability and system administrator training requirements associated with the selected solution?



Software

Can the software be purchased separately and installed on existing computer hardware and is this the best way to proceed? For management and control, is a SaaS solution a better direction? Are there cost and resource requirements that can be avoided by a SaaS implementation?

Services

Implementation of a mature solution requires planning and management of many variables. The initial implementation typically requires construction level work. Hanging screens and connecting players and screens to network and power should be carefully planned and executed to avoid significant expenses and safety issues. Once the solution is installed, field maintenance services are required. The occasional break-fix visit, and more importantly, the ongoing services such as cleaning are important. When a screen is not displaying the correct information or has gone completely dark, whom does the local site contact? Is the existing help desk service prepared to troubleshoot digital media solutions? Will there be proper access to a repair service and the ability to quickly react to the situation?



CUSTOMER SNAPSHOT

Engage Employees to Reduce Costs and Improve Customer Service

A popular department store employs the Hughes BreakroomTV™ to great effect in its recently renovated and upscale break rooms. Store managers share local goals and results plus highlight local accomplishments. This communication helps improve employee satisfaction, increases loyalty, and ultimately leads to better customer service.

Content Sourcing

One of the biggest hurdles to media projects is the concern over how to “feed the beast” once it is turned on. In order to keep eyeballs coming to the screens there needs to be changing and current content. Is there a plan for sourcing real-time content and can that source be easily integrated into the system? Can multiple sources of real-time content be integrated and scheduled? What type of content can be sourced e.g., static images, videos vignettes, audio feeds, live company broadcasts, etc.



HughesON is Video

“In my business, with 140,000 people, engagement is my number one concern. In businesses of scale, you don’t even get started without engagement.”

— Justin King, CEO Sainsbury UK

The Business Case for Digital Media

Implementing a robust digital media solution is supported by a strong business case. The Hughes digital media solutions will engage customers and employees when and where it matters most.

Increase profitability

Engaging customers at the point-of-decision with targeted, high-impact messaging will increase revenue, increase profitability, and improve the overall customer experience, which develops loyalty. Real-world results are showing that using video and digital media to announce new products results in a 5x increase in the sales of the new product. Highlighting existing products in a digital signage screen is showing an average of 10% increase in the purchase of the focused item.

Employee productivity

Workplace communication is critical to the engagement and retention of top employees, but it is a challenge for distributed companies. To maximize effectiveness communication should be delivered in a form that is comfortable. Employees like video. They watch and post videos to social media and are comfortable receiving corporate information in the same way. Leverage the impact that social media is having on information exchange – let the employee base see senior leadership discussing the positives and highlighting accomplishments.

The engaged employee understands their role, understands the broader company goals are and understands how their contribution helps achieve the company goals. Utilizing video solutions from Hughes, you can engage your employees with motivational messages and current information about products, promotions and activities. Engaging the employees will create a sense of community and loyalty, which will reduce turnover and increase productivity.

The customer experience

In today's world consumers and guests are watching television on their tablets and tracking business results on their smartphones. Peer recommendations, hashtags, and other social media recommendations are influencing more than 50% of all purchases. In this world, there is a high expectation of – and critical importance placed



on – the customer experience. Research shows that customers move through phases from strangers to fans. As they move through these stages, their value increases by as much as 80%, because their personal spend and their “influenced spend” will grow rapidly.

Video and visual media is the beginning; building services and solutions around that media is what Hughes does for customers. Menu boards and signage that highlight new product launches, interactive screens that provide an endless aisle, and two-way video chat screens that give access to offsite experts are all ways that Hughes is integrating visual media into solutions that enhance the customer experience, which builds loyalty and moves customers from strangers to fans.



“When employees care – when they are engaged – they use discretionary effort. In other words, they are willing to go the extra mile.”

— Kevin Kruse, Author



HughesON Digital Media™ Solutions

Our digital media suite of solutions combines innovative application technologies with knowledge and experience in corporate communications. We deliver this as a service based on our existing infrastructure that is serving thousands of locations today. By choosing a HughesON managed service, you can be confident that you are receiving a comprehensive, turnkey solution that will lower your total cost of ownership and let your team focus on growing the business.



Hughes MediaSignage™

Built on the idea that in order to be effective it must be full-featured and simple to use, the Hughes MediaSignage product line can provide several services within the same infrastructure and using the same content management system. Provided as a hosted SaaS or data-center implementation, the Hughes MediaSignage offerings will deliver powerful, flexible, and reliable messaging.

CUSTOMER SNAPSHOT

A Better Way to Keep Employees Informed

A leading grocery chain uses the Hughes HS media appliance to continually update its store associates with the latest training and company information. The system delivers rich-media video training (live, interactive, and on-demand) and up-to-the-minute merchandising information. Employees can watch the content in the training room or if authorized, view it from web-enabled devices such as tablets and smartphones.



Hughes Corporate DVR™

The digital video recorder has revolutionized the way people consume television content. It has removed subjugation to the linear programming schedule. It has replaced it with freedom to choose what, when, and where content is viewed and increasingly even the device used to view it. Hughes is moving this power



into the enterprise world with our HS media appliances; the “Corporate DVR” provides the same flexibility as the consumer DVR, but with the added benefit of manageability from a central corporate location. Control can be granted or withheld based on business rules and requirements.



CUSTOMER SNAPSHOT

Learning Leads to Better Employee Performance

One of the world's largest oil and gas companies uses the Hughes Portal to provide online certification training programs to more than 25,000 employees in retail sites throughout Europe in multiple languages. The flexible SaaS service provided by Hughes enables the company to monitor the success of each improvement initiative.

CUSTOMER SNAPSHOT

Delivering High-quality Video Globally

Today Hughes is delivering Hollywood and Bollywood films to thousands of theaters around the world. Ensuring secure, on-time delivery of new releases and providing a reliable service for high-value video content is just part of our video experience. We also deliver streaming audio and video to thousands of enterprise locations every day.



HughesON is
SUPPORT



Hughes Customer Gateway

Keeping track of your large-scale distributed network is a complex business. That's why we've created the Hughes Customer Gateway, a web-based monitoring solution designed to help you stay in control. The Hughes Customer Gateway is an easy-to-use performance and fault management tool for all wireless and wireline technologies deployed within your organization.

With its full suite of highly customizable features, the Hughes Customer Gateway ensures a higher standard of network monitoring than ever before. You'll enjoy complete control of your entire network via a single, easy-to-use interface. Using the Customer Gateway addresses common challenges associated with monitoring multiple technologies, resulting in increased uptime, optimized application performance, and faster outage recovery.



Take control of your network

- Access real-time network status and fault management data through the web portal and on your mobile device
- Monitor network-level trouble tickets and create and monitor site-level trouble tickets
- View and monitor Hughes-generated trouble tickets
- Track installation from initial scheduling to completion in real time
- Automate and review a wide range of reports including top talkers, top applications, and bit rate vs. time to optimize bandwidth and application delivery
- Access multi-router traffic graphs and virtual auto dial backup reports
- Access photos of your actual installations to help troubleshoot issues

Hughes has the Experience

For over 25 years, Hughes has been a trusted network services and products provider to industry-leading companies. The company's unique satellite heritage, hardware development, application software capabilities, and depth of service delivery expertise enable Hughes to bridge the best of wireline and wireless technology to offer innovative enterprise-grade solutions that are unmatched in the industry.

Since our early days as a pioneer of broadband satellite networking, Hughes has operated at the forefront of technology and innovation. We've grown into a robust provider of fully managed, distributed enterprise networking services and solutions, regardless of the transport technology. Hughes has hundreds of advanced-degreed network engineers on staff developing new technologies in IP video delivery, application acceleration, and customer premise router equipment.

Program Management Team

Hughes has some of the most experienced program managers in the business, many with over 20+ years of experience in rolling out and supporting complex multi-site networks. They know what it takes to roll out your program successfully in North America and around the world. Many of the networks Hughes manages have over 1,000 sites (one with over 97,000 locations) and include well-known brands such as Best Buy, BP, Pizza Hut, Safeway, and CVS. Our Program Managers have extensive knowledge of what can go wrong, and understand the nuances of your business, ranging from retail, gas stations, food service, hotel, banking, gaming, and oil and gas exploration. In North America, the program managers have an installation team of over 400 professionals at their disposal for on time national rollouts. Your program manager is your partner in leveraging the HughesON Solutions to ensure your network delivers the business results you need.

Solution Consultants

Hughes Solution Consultants (SCs) are experts at optimizing IP applications for wide area networks, and have developed strong relationships with leading business application vendors like Microsoft, Citrix, and VMware as well as knowledge of our partners' technology—Aruba, Fortinet, and SCALA. We can help to ensure peak performance of your business applications over your broadband wide area network (WAN)—regardless of the underlying transport technology. Our SCs not only understand the WAN, they also have a deep understanding of the applications running inside your branch and wireless LAN, from WiFi, VoIP, and digital signage, to ensure great application performance and efficiency for a cost-effective implementation.



HughesON is
GLOBAL



Multinational enterprises need a uniformly secure, affordable, and seamless network that crosses all boundaries. But connecting offices and people across different work environments and countries inevitably involves multiple regulatory authorities and networking technologies, presenting significant challenges and risks to tackle alone. Hughes brings the resources, the experience, and the relationships to help you resolve them.

Hughes is the one-stop provider of managed network services for organizations around the world. Our experience as a global managed services provider means we know our way around different networking technologies, infrastructures, and regulatory requirements, so you get a total solution anywhere you need connectivity—from one trusted source.

Hughes today serves over one million sites on five continents, providing broadband connectivity and solutions to a wide range of customers, from small businesses to governments and many of the world's leading multi-national enterprises. In addition to North America, Hughes owns and provides managed broadband services in Europe, India, and Brazil and has shipped over 4 million satellite terminals to customers in over 100 countries. Network operators using Hughes technology include operators in the Middle East, Africa, Latin America, Asia Pacific, Russia, and the CIS countries.



Hughes' customers work with a single trusted vendor and under one contract to deliver a uniform, high-quality network service at all locations, gaining the advantage of responsive local support while solving the problem of filling the gaps between countries.



HughesON is
COST-EFFECTIVE



Customers must constantly weigh the pros and cons of whether to manage the network themselves, outsource the management of the network, or take a hybrid approach between the two. Of course there are many options available and various gradations between totally managing the network yourself, totally outsourcing the network, or keeping some strategic functions in-house, while outsourcing others.

As customers leverage new applications to become more competitive, the branch network has become more complex and prone to security threats. This challenge is compounded the more branches you have. With that in mind, Hughes developed our HughesON™ Managed Solutions—a flexible next-generation portfolio of network and digital media solutions designed to meet the unique needs of the distributed enterprise as cost-effectively as possible. In some cases, this means saving customers more than 30% over their current network solutions and in many cases, allowing them to deliver new branch applications that weren't cost-effective to do before.

From high-capacity access to high-availability networks, from digital signage to employee communications and training, from managed security to managed WiFi and voice, HughesON enables you to cost-effectively delight your customers, engage your employees, and streamline your business operations. Focus on your business, not on your network.

Power your business with HughesON.

HughesON™



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Headquartered outside Washington, D.C., in Germantown, Maryland, USA, Hughes maintains sales and support offices worldwide, and is a wholly owned subsidiary of EchoStar Corporation (NASDAQ:SATS), a premier global provider of satellite operations and digital TV solutions.

