



The Need is Clear

IPTV Service Assurance Solutions

Now, the Solution is Clear

To maximize IPTV service delivery opportunity and profitability, providers need to be ready to scale rapidly from thousands to millions of subscribers—without compromising customer quality of experience (QoE).

The market is ready.

High definition (HD) home entertainment systems are mainstream, and consumers want subscriber services that showcase the full functionality of these electronics investments. With its nearly limitless potential for interactive viewing functionality, IPTV is emerging as a strong contender in this market space. But for service providers to win and keep IPTV subscribers, exceptional quality of service (QoS) is critical. These consumers will not settle for less than perfect. The solution to meet this challenge is an integrated service assurance solution that provides test and monitoring coverage from the head end to the home.

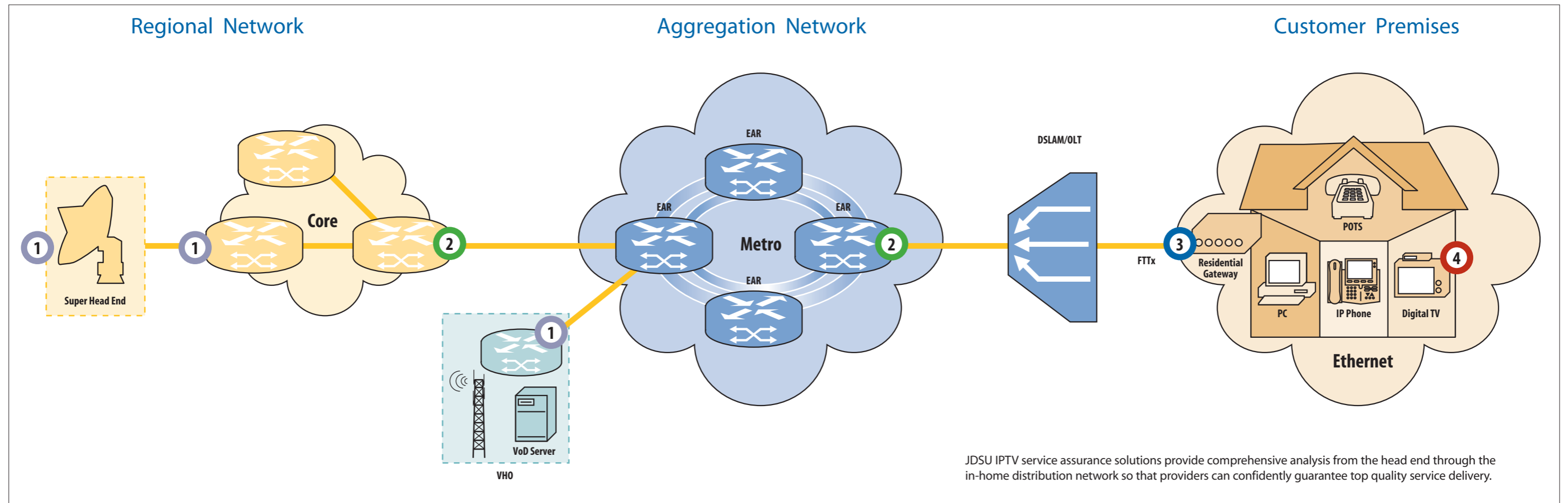
Are you ready?

The IPTV service delivery chain is complex and the potential for errors exists throughout. JDSU, the industry leader in network service assurance solutions, offers NetComplete™, an integrated proactive approach for centralized IPTV monitoring and trouble resolution that sectionalizes the chain and categorizes the possible problems. This, combined with a powerful set of integrated field test instruments and MPEG-2/4 analyzers, is the most effective tactic available for providers to maximize return on investment for IPTV service offerings and to guarantee high QoE for customers. The JDSU NetComplete IPTV service assurance strategy ensures that providers get complete and integrated solutions to answer four critical questions.



JDSU service assurance solutions help providers deliver clearly better IPTV QoS. By drilling down into the MPEG-2/4 transport stream, these solutions identify and correct errors that erode the customer's viewing experience.

Complete Test Solutions from the Head End to the Home



1 Is the source video transmission clear?

Quality reception in the subscriber's home requires rigorous monitoring of the digital video (DV) content from the network ingress point to the STB. The DV content must be qualified at the point of reception and through various manipulation points including ad insertion and remultiplexing prior to the DV being launched into the core and metro networks. The DTS-330 Digital Broadcast Test Platform analyzes both the physical/transport layer and drills down into the MPEG transport stream. DTS:

- Ensures SHE/VHO/VSO digital video manipulations do not corrupt video quality or service and proactively ensures stream integrity at all relevant points within the network at full line rate
- Provides TR 101 290 analysis and segments Timing /PCR issues enabling QoS problem resolution (e.g., lip-sync, blocking)

2 Is the IP transport network performing within parameters?

The integrity of the IPTV data stream is susceptible to transport impairments that ultimately result in garbled or missing sound and poor-quality images. The JDSU QT-600 Ethernet & Triple-Play Probe proactively detects and resolves problems before customer QoE is affected. The QT-600:

- Pinpoints potential service degradations by proactively measuring and reporting key QoS indicators continuously including packet loss, jitter latency, and video MOS
- Simultaneously monitors hundreds of MPEG transport streams within a GigE link
- Combines both on-demand testing with 24x7 continuous service monitoring in a single probe
- Is a triple play probe, providing true real-time service assurance for voice, video, and data
- Interfaces with the JDSU digital and IP video test and monitoring product portfolio for total MPEG analysis capability

3 Is the physical plant prepared for the bandwidth demands?

IPTV places unprecedented demands on the xDSL access loop. To ensure that the infrastructure can handle IPTV's bandwidth requirements and low tolerance for error, JDSU offers centralized service assurance and field solutions including the QT-200 xDSL & Triple-Play Probe, NetComplete Consumer Broadband Tools, and the HST-3000 Handheld Services Tester. With these tools, technicians can:

- Perform copper pre-qualification, line optimization, capacity management, narrowband and wideband testing, and continuous monitoring
- Improve network management effectiveness and performance via expedited fault isolation and automated load balancing
- Test through to the in-home distribution network

4 Is the customer receiving quality audio and video?

To see what the customer is experiencing, providers need the capability to emulate the service actively. The JDSU QT family of probes integrates with centralized solutions to:

- Test the IPTV network actively to fully understand the customer's viewing experience
- Measure and monitor time associated with network channel changes to ensure customer QoE
- Emulate channel changing and video on demand (VoD) service requests to ensure that customer requests are processed and programs are delivered as ordered
- Ensure that customers receive IPTV service that maximizes home HD entertainment system investments

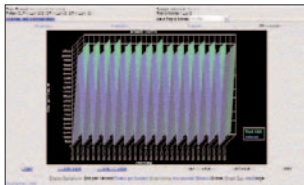
The Choice is Clear

NetComplete service assurance solutions from JDSU provide industry-leading test and monitoring functionality. With capabilities including comprehensive coverage, rapid fault isolation, in-depth drill-down analysis, and full reporting, providers can roll out, scale, and maintain efficient IPTV service that reliably performs to high QoE expectations. Contact a JDSU sales engineer or visit www.jdsu.com for complete information on JDSU IPTV service assurance solutions.

NetComplete IPTV Service Assurance Solutions

Consumer Broadband Tools

Consumer Broadband Tools is a suite of software tools enabling engineers and operations personnel to improve broadband network management including performance optimization of xDSL services, broadband fault isolation, and capacity planning and management.



NetAnalyst Test Management OSS

NetAnalyst is a powerful carrier class test OSS that centralizes crucial test creation and management functions. Service providers can create customized, pre-defined, repeatable tests and schedule them to run automatically, reducing user-induced errors and allowing specific trouble areas to be quickly detected and isolated.

NetOptimize Performance Management and Capacity Planning OSS

NetOptimize is a carrier-class Performance Management OSS. It combines service and network performance monitoring and capacity management with a fully scalable architecture that keeps pace with network and subscriber growth for triple-play services. NetOptimize correlates service quality, and customer data to fully qualify the customer experience in addition to identifying and proactively predicting network and service problems.



QT-200 xDSL & Triple-Play Probe

The QT-200 xDSL & Triple-Play Probe and NetAnalyst Test Management Software, provide unsurpassed ability to pre-qualify, provision, maintain, monitor, and troubleshoot xDSL triple-play services as well as copper loop and POTS lines.



QT-600 Ethernet & Triple-Play Probe

The QT-600 Ethernet & Triple-Play Probe, working in conjunction with both NetAnalyst and NetOptimize, provides triple-play services turn-up testing, troubleshooting, performance monitoring, and reporting capabilities. The QT-600 is a carrier-grade, scalable, multi-service probe. Through proactive traffic monitoring, the QT-600 probe detects patterns of QoS degradation and, from a centralized location, quickly segments the network to identify the source of the problem.

Portable and Handheld Solutions

JDSU DTS-330/200, HST-3000, and Test-Um® products provide complementary functionality for IPTV test and monitoring applications for comprehensive, integrated testing from the head end through the home. The DTS products provide in-depth MPEG-2/4 analysis capabilities for use from the head end to the core. The HST-3000 addresses field testing from the access network through to the customer premises, while Test-Um solutions, such as the IVT-600, provide unmatched functionality for verifying and troubleshooting in-home wiring.

DTS-200 MPEG-2/4 Field Instrument



The DTS-200 Digital Video Field Test Tool is a portable MPEG/IPTV instrument offering full remote operation from the office, lab, or home. It performs real-time digital and IP video analysis and verification of stream contents, service plans, PIDs, rates, timing parameters, and TR 101 290 Priority 1, 2, and 3 parameters at full line rate. The DTS-200 automates testing for baselining with event logs, triggers, and reports.

DTS-330 Digital Broadcast Test Platform



The DTS-330 Advanced Digital Broadcast Test Platform is a comprehensive MPEG/IPTV test solution providing transport stream generation, capture, and analysis. The DTS-330 is a lab grade digital and IP video test instrument providing the most interfaces in the industry (including 8VSB/COFDM IP, ASI, PSK, and QAM). The DTS-330 also provides all of the industry acclaimed features of the award winning DTS-200.

HST-3000 Handheld Services Tester



The HST-3000 is a handheld, modular platform for copper and multi-service testing. Lightweight, rugged, and battery-operated, the HST-3000 cost-effectively scales to provide an all-in-one solution for field installation, maintenance, and troubleshooting of voice, video, and data services. Its automated testing features enable improved productivity and work-process efficiency. The HST-3000 is a Workflow Solutions-enabled platform.

IVT-600 Voice, Video, Data and IPTV Installation Meter



The IVT-600 is the test solution for IPTV, VoIP, home networking, whole-home DVR and residential gateway installation. It combines a full suite of features for performing essential tasks including coax/cat-5/3 testing, wiremapping, outlet identification, basic Ethernet testing, network capacity verification, POTS-SLIC emulation, tracing and advanced tone generation.

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