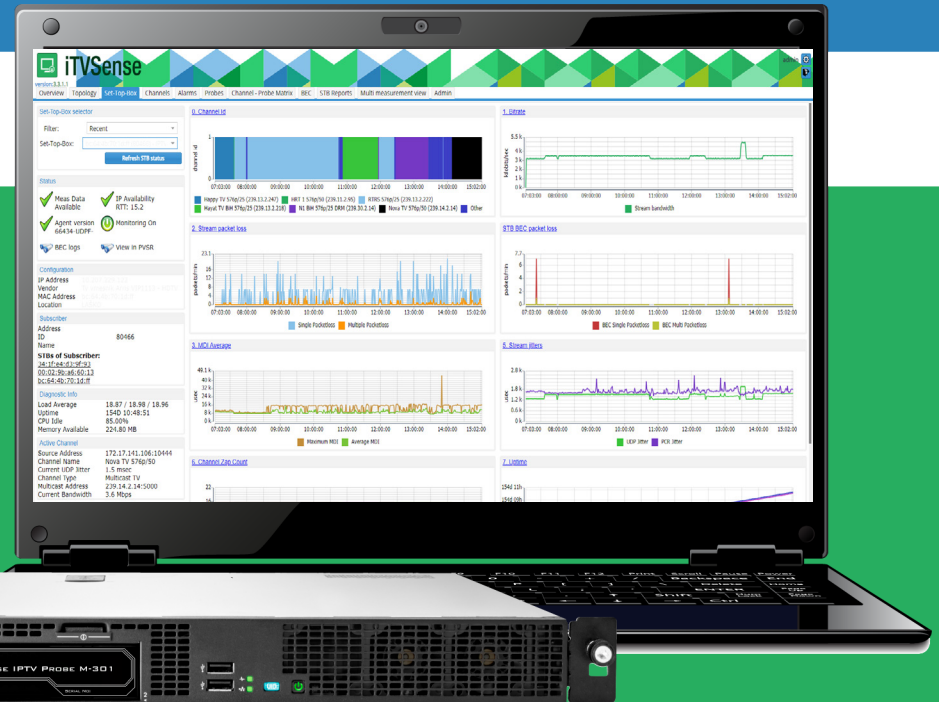


Service Quality Assurance for Digital Media Services

iTVSense RackProbe M-201 / M-301

NETvisor





iTVSense RackProbe M-201/M-301

SERVICE QUALITY ASSURANCE FOR DIGITAL TV AND MULTI-PLAY SERVICE PROVIDERS

iTVSense RackProbes appliances deliver exceptional performance and accuracy for the most demanding IPTV and 3-Play service monitoring tasks. Deployed to the IPTV headend, these probes can analyze up to 1000 channels simultaneously, providing complete service assurance even for the broadest IPTV channel offerings with a single and small form factor device.

Benefits

With a measurement capacity of 5000 Mbits/sec, the M3xx probes are versatile measurement devices for multiple application scenarios, e.g.

- As full-service assurance probes in IPTV headends with more than 200 (M-201) or 1000 (M301) channels – depending on the model.
- As a monitoring probe for massive unicast traffic.
- At strategic locations in the providers core network
- In network aggregation points, i.e. on switch/router ports for monitoring backbone and aggregation routing and switching.

All this functions are delivered by a small 1U high rack-mounted device, with a moderate, 60W power rating.



Operation modes

iTVSense probes may be operated under central control by an iTVSense server, or in stand-alone mode, controlled primarily from the Web GUI.

CENTRALIZED OPERATION

Operated under central control, the probe communicates with the iTVSense server environment for:

- Downloading measurement configuration as defined on the server.
- Serving the iTVSense performance recording server with periodic minute-resolution data.
- Serving the iTVSense GUI with 1-second resolution data for on-demand queries.
- Forwarding probe-generated alarms to be stored, analyzed, correlated, and eventually presented on the server GUI, or forwarded to umbrella managers.
- Storage of probe-generated data captures on the server.
- Generic system health monitoring and probe firmware upgrades provided by the server

To make centralized operation and control possible, probes support several options to provide firewall -transparent access from the management server.

STANDALONE MODE AND WEB GUI

Probes in stand-alone mode are mostly operated through the Probe Web GUI, a sophisticated, dynamic and bandwidth-economic web application with the following main functions:

- Probe status overview: identification, system and network status, probe alarms, and measurements overview.
- Detailed measurement charts with
 - Selectable measurements and metrics
 - Selectable time resolution (1 secs - 4 hours)
 - Interactive zoom functions
 - Related alarms indicated on measurement charts.
- Setup screens for
 - Measurement settings
 - Alarm thresholds defined through profiles assigned to channels or streams.
 - Boot and network setting, including
 - full VLAN support on either interfaces,
 - VPN links to make probe accessible from other, firewall-separated networks
 - Technology specific setups, like IPTV channel definitions, Internet test server lists and/or VoIP peer lists.
- Additional Network and Diagnostic tools like
 - Selective or generic mode packet capture: captured data is uploaded to a network server in PCAP format. Selective captures only include single channels or directions, while generic mode includes all network data, with custom filter definitions supported.
 - DNS, Ping, HTTP availability tests
 - Probe ecosystem diagnostics.

Technology Specific Features and Usage

iTVSENSE PROBES USED IN IPTV

In an IPTV service environment, Probes provide the following main features

- Measurement of up to 1000 channels (including SD and HD media of various encodings) simultaneously
- Second-resolution metrics and minute-based aggregates of metrics like bitrate, packet loss, RFC 4445 MDI DF (delay factor), and MLR (media loss rate, a.k.a. „CC error”), PCR jitters and errors, and No Signal errors.
- 60 seconds resolution data storage for up to 540 hours and seconds-level storage for up to 72 hours.
- Alarm definition based on measured values. In addition to being displayed on the probe Web GUI, alarms may alerts trigger
 - syslog/snmp alerts sent to external systems (escalation)
 - automatic data capture enabled for the alarm period

iTVSENSE MINIPROBES USED FOR INTERNET SERVICES

- Internet access measurements: availability, utilization, average/maximum RTT
- Basic internet service availability tests for DHCP, DNS, NTP, etc.
- Scheduled, periodic download/upload rate tests for selected servers
 - These probes can also act as a target for tests initiated from other probes.
- Website and online service availability tests, including replays of simulated or recorded multi-step http/https transactions (like online shopping sessions including catalog, registration/login/logout shopping cart, ordering, payment, etc.)



Specifications

NETWORK INTERFACES

- 2x SFP+ sockets for up to 10Gbps SFP+ modules (M-301)
- 2x1 Gbps copper Ethernet interfaces (M-201, M-301)
- iLO management interface (M-201, M-301)

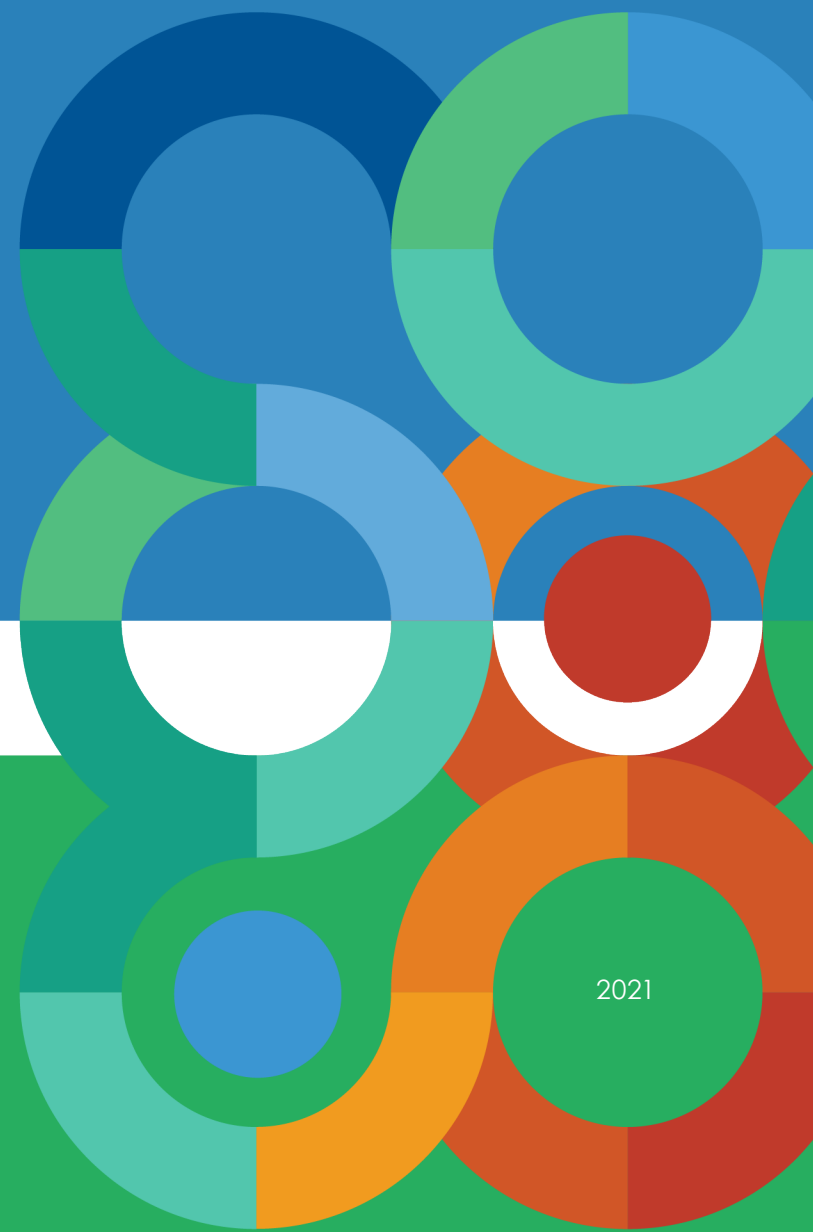
MONITORED DATA:

- Network UDP stream packet rate, byte rate, packet loss rate and various jitter metrics
- MPEG Transport Stream packet rates, jitter, packet loss, counter and encapsulation errors. Metrics are provided both as an aggregate and also by individual Mpeg streams (video, audio, control).
- RFC 4445 Media Delivery Index (MDI).
- Multicast join times and zapping time.
- Encoder alarm events
- IPTV server operation, network traffic and stream processing (via SNMP)
- VCAS Server network traffic and stream processing (via SNMP)
- Middleware and VoD service operation, resources and response time, server/OS/Database health.
- TCP and UDP downloads and uploads against dedicated target servers
- HTTP/FTP transfers from/to public Internet servers
- Simulated web transactions for testing interactive web services.
- ICMP and DNS availabilities and response times
- DHCP and Boot Image server availability and events





improving the quality & efficiency of ICT services



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